Internet Content for the Classroom

A Professional Development Training Program

from

The MarcoPolo Content Partnership

American Association for the Advancement of Science

International Reading Association

John F. Kennedy Center for the Performing Arts

The National Council of Teachers of English

The National Council of Teachers of Mathematics

National Council on Economic Education

National Endowment for the Humanities

National Geographic Society

Preface

This Third Edition of *Internet Content for the Classroom,* the Teacher Training Kit of the MarcoPolo Professional Development Program, reflects the learning and input of more than 175,000 teacher trainers who have participated in MarcoPolo training over the past four years. We started this training program with the premise that teachers are busy and need to build basic and transferable Internet skills, not in a vacuum, but in tandem with learning about great educational resources, such as MarcoPolo, that will serve them in their classrooms for years to come. This guiding principle could not be truer today.

This edition of *Internet Content for the Classroom* is focused on helping teachers find and use MarcoPolo resources in the classroom. In this Teacher Training Kit, you will find paradigms and templates on Internet integration and best-practice guidelines on managing an Internet-equipped classroom. You also will discover training resources built around the idea that modeling and workshops are far more effective training approaches than lecturing and demonstrations. To this end, the kit offers suggestions for ways you can adapt the resources included here to your own training style, needs and situations.

This edition of *Internet Content for the Classroom* also reflects growth at MarcoPolo. Every Content Partner site recently has been redesigned to provide easier access to standards-based lesson plans and other teacher resources, and content on all Content Partner sites has expanded significantly, including a host of K–12 content across all Content Partner sites. And we have added significant content to the MarcoPolo Web site as well, in addition to a new site design.

Over the past four years, our professional development initiative has grown as well. MarcoPolo now offers a broad mix of on-site and distance learning training sessions to school districts and states. More than one million teachers access our Web sites each month, demonstrating that the MarcoPolo professional development initiative is succeeding. We also have recruited MarcoPolo Certified Trainers from school systems across the country to carry out our expanding commitment to professional development. All this experience has played a part in shaping this edition of our training program and will no doubt continue to reshape it in years to come. We invite you to provide your feedback on the MarcoPolo program by using the Contact Us button on the Web site, completing our training surveys and submitting the follow-up reports referenced in this Teacher Training Kit.

We hope that this Third Edition of *Internet Content for the Classroom* helps to facilitate teacher training in your district and state.

The MarcoPolo Content Partnership

American Association for the Advancement of Science
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Introduction

Internet Content for the Classroom is a professional development training program designed to introduce educators at all grade levels to MarcoPolo, an Internet resource created through partnerships with the nation's leading educational organizations to help teachers effectively integrate *Internet Content for the Classroom* into the K–12 curriculum. This training program is one part of the MarcoPolo professional development initiative, which brings on-site and distance learning training sessions to educators and administrators in school districts across the country.

Goals

- Present *Internet Content for the Classroom* as an emerging discipline that brings powerful new resources to education.
- Introduce MarcoPolo as a pacesetter in the development of *Internet Content for the Classroom.*
- Explore the MarcoPolo Content Partner Web sites and the standards-based resources they provide for teachers in all subject areas.
- Develop strategies for integrating *Internet Content for the Classroom* into lesson planning across the curriculum.
- Develop techniques for teaching with *Internet Content for the Classroom* in a variety of instructional settings.

Target Audience

Internet Content for the Classroom offers professional development support for educators who are familiar with Internet technology and ready to begin integrating Internet resources into their lesson plans and classroom practice. The program is intended for training sessions and workshops, although it may be adapted for use as a self-tutorial.

How to Use the Program

Internet Content for the Classroom is designed to require minimal preparation and can be implemented effectively by those with basic presentation skills.

Organization

Each part of the program begins with a statement of the time required for presentation, an outline of training objectives and an overview describing briefly how that part of the training should unfold. These introductory sections are gathered together in the Overview chapter of this Teacher Training Kit so that you can see how the various parts of the program relate to one another.

Each part of the program also provides you with detailed training tips designed to help you shape your presentation to the best effect, and a step-by-step Microsoft® PowerPoint® presentation (available on the MarcoPolo Web site and on the Training CD-ROM) to help you structure and pace your presentation. You may find it helpful to follow the Teacher Training Kit closely when you are still becoming familiar with the program, but as you gain experience you will probably adapt this script to your own style.

Reproducible handouts for each part of the program are also gathered together at the back of each part. Make copies in advance for distribution during the training session.

Structure

Each time you conduct a Field Training session, you should complete four key logistical steps designed to help you track the reach and effectiveness of your professional development efforts. Before your training session begins, register your session at the Trainer Resource Center (http://www.marcopolo-education.org/pd/ftrc.aspx). During the training, go to the Training Logistics Forms page (http://www.marcopolo-education.org/pd/logistics.aspx) and have your attendees sign in on the roster and take the training survey. After the session, go back to the Trainer Resource Center and report to the Foundation on your session. By providing this information you contribute directly to the growth of the MarcoPolo Professional Development Program; moreover, you can use this information to highlight the accomplishments of your state, district, school or other organization. For more details on how to complete these steps, please consult the Trainer Resource Center User's Guide in the Appendix of this Teacher Training Kit.

Plan to present Parts 1–3 of the program as a unit. This is the foundation of the training and provides a detailed look at the resources MarcoPolo provides to educators in subjects across the curriculum. Depending on your group and personal training style, you may choose to present these sections through lecture and discussion or to adopt a more consistently hands-on approach.

Parts 4 and 5 of the program focus on using MarcoPolo resources in the classroom. Participants gain experience in developing lesson plans with *Internet Content for the Classroom* (ICFC) and in adapting lesson plans to different classroom situations. To help you make this experience relevant to the professional interests of your group, the program offers a wide selection of sample lesson plans for these workshops, as well as supporting materials on lesson development and class preparation. Choose the program elements most suitable to your group and tailor them to your training needs.

Part 6 of the program is devoted to evaluation of the training session and training materials. Please do not overlook this important part of the program as you plan your training schedule.

Finally, the Appendix provides training materials on topics that may be of special interest in some school districts or to some groups. These materials can be used as handouts or you can adapt them for presentation. Also, the Trainer Resource Center User's Guide provides you with detailed information on recording and tracking required training session data and training surveys.

Basic Training Topics

Please note that this edition of *Internet Content for the Classroom* does not include training materials on basic topics such as the use of browsers, search engines and e-mail.

Technical Support

Please notify MarcoPolo of any technical difficulties you encounter online during a training session: broken links, coding errors, missing graphics, inaccessible Web sites, problems accessing the survey and/or follow-up forms, etc. To report an item, select the Contact Us button at the top of the MarcoPolo Web site, and a representative will receive your message. In addition, the MarcoPolo Content Partners make every effort to monitor and maintain their Web sites, and your quick notice of a problem can help ensure a speedy solution.

Planning Chart

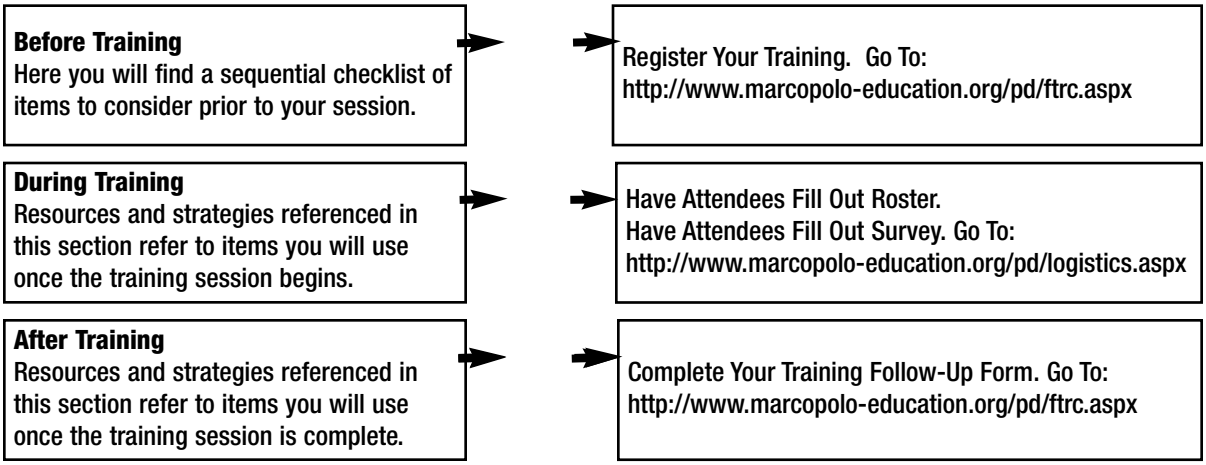
Internet Content for the Classroom has been designed to accommodate a variety of scheduling configurations. Estimated time requirements are provided for each part of the program and summarized in the planning chart below. Bear in mind, however, that actual time requirements will depend on your training style, the skills and experience of your audience and the amount of time you devote to the program's workshops and hands-on activities.

***Internet Content for the Classroom* Planning Chart**	
Sign-In/Roster	
Have your attendees sign in through the online Training Logistics Forms page at http://www.marcopolo-education.org/pd/logistics.aspx. Additional information on these procedures can be found in the Trainer Resource Center User's Guide in the Appendix.	5 minutes
Part 1: What Is *Internet Content for the Classroom?*	
Lead hands-on introduction to integrating Internet resources into the curriculum.	30 minutes
Part 2: Introducing MarcoPolo	
Provide background on the MarcoPolo project and a tour of the MarcoPolo Web site.	30–45 minutes
Part 3: The MarcoPolo Content Partner Web Sites	
Option 1: Guided Tour Lead a tour of the sites, then have participants work in teams to review each site.	2.5 hours
Option 2: Site Explorations Introduce each site, have participants briefly explore the site, then lead a discussion based on their discoveries.	3 hours
Option 3: Web Site Reports Have teams of participants prepare and present detailed reports on each site.	3.5 hours
Part 4: Lesson Development with *Internet Content for the Classroom*	
Framework Review types of ICFC and basic lesson planning strategies.	30 minutes
Case Studies (Optional) Investigate and adapt sample lesson plans in subject areas across the curriculum.	30–45 minutes (up to 6 hours)
Workshop Develop and present lesson plans using MarcoPolo *Internet Content for the Classroom.*	at least 1 hour
Part 5: Teaching with *Internet Content for the Classroom*	
Conduct class preparation workshop, adapting a lesson plan for implementation in different classroom situations.	2 hours
Review class preparation and classroom management suggestions.	15 minutes
Lead MarcoPolo poster activity. (Optional)	15 minutes
Part 6: MarcoPolo Training Program Evaluation	
Have attendees complete evaluation forms through the online Training Logistics Forms page at http://www.marcopolo-education.org/pd/logistics.aspx.	15 minutes
Complete follow-up forms after each training session through the online Trainer Resource Center at http://www.marcopolo-education.org/pd/ftrc.aspx.	5 minutes

Trainer Resource Center Activities

Sign-in and follow-up procedures are carried out through MarcoPolo's online Trainer Resource Center. Additional information on these procedures can be found in the Appendix.

Training Process Flowchart



Training Schedules

The following suggestions may help you adjust and adapt the program materials to the time available in your schedule. For more detailed agenda ideas, go to the Trainer Resource Center and select the Agenda Creator link in the Trainer's Toolbox.

Half-Day Training

Parts 1–3 require approximately 4 hours and should be presented together. If time permits, prepare your group to complete the lesson plan development workshop in Part 4 on their own.

Full-Day Training

Morning:

Present Parts 1–3 during the first half of the day (4 hours).

Afternoon:

Combine the lesson plan development workshop in Part 4 (2–3 hours) with the class preparation workshop in Part 5 (2 hours). If time permits, conclude with the MarcoPolo poster activity (15 minutes).

Two-Day Training

Day 1:

Morning: Present Parts 1–3 during the morning (4 hours). If possible, schedule additional time in Part 3 for exploration and assessment of the MarcoPolo Content Partner Web sites.

Afternoon: Present Part 4 in the afternoon. Review the ICFC integration framework (30 minutes) and include case studies of several sample lesson plans (1–2 hours). Begin the lesson plan development workshop (2 hours), asking participants to ready their lesson plans for presentation the next day.

Day 2:

Morning: Complete Part 4 by having participants present and discuss their lesson plans (1–2 hours). Introduce Part 5 and begin the class preparation workshop.

Afternoon: Have participants present and compare their class plans for different classroom situations (1–2 hours). Review the class preparation and classroom management suggestions in Part 5 and the materials on Content Filters and Internet Plagiarism in the Appendix (1 hour). Conclude your training session with the MarcoPolo poster activity (15 minutes).

Program Materials Checklist

❑ **Teacher Training Kit:** Provides step-by-step directions for implementing the program, with training tips, presentation notes and reproducible handouts for each section.

❑ **Trainer Resource Center:** Accessible online at http://www.marcopolo-education.org/pd/ftrc.aspx, the Trainer Resource Center contains a vast library of resources and strategies designed to help you conduct your Field Training session. This area of the MarcoPolo Web site also contains online forms for you to record the logistics of your session.

❑ **Sign-In/Roster:** Accessible via the online Training Logistics Forms page at http://www.marcopolo-education.org/pd/logistics.aspx; have your training attendees complete the roster at the beginning of your session.

❑ **CD-ROM:** Provides all the training resources needed to conduct the training session completely offline should Internet connectivity be slow or even nonexistent. Resources include PowerPoint presentation slides; training handouts in PDF format and Microsoft® Word format (for participants to complete and save during sessions); the MarcoPolo tour found at the MarcoPolo gateway site to provide a general overview of the MarcoPolo program; an interactive Framework for Integrating ICFC; and the case study lessons referred to in Part 4 of this Teacher Training Kit. The CD-ROM may be used on a PC or Mac, and it is optimized for Microsoft Internet Explorer, versions 4.x or later on a PC and version 4.5 or later on a Mac. The CD-ROM also includes a copy of the Teacher Training Kit in Adobe Acrobat format.

❑ **Online Teacher Training Survey:** Designed to assess the effectiveness of the training program, this survey must be completed by all training program participants. The survey can be found on MarcoPolo at http://www.marcopolo-education.org/pd/logistics.aspx. A hard copy of the survey form is also included in this Teacher Training Kit.

❑ **Online Teacher Training Follow-Up Form:** Designed to help evaluate the impact of the MarcoPolo training program, this form should be completed online by all trainers upon completion of every training session. The form can be found on MarcoPolo at http://www.marcopolo-education.org/pd/ftrc.aspx.

Presentation Equipment Checklist

❑ **Trainer's Computer,** equipped with:

- ❑ A projector.
- ❑ Microsoft PowerPoint
- ❑ A Web browser (Internet Explorer 5.0 or higher or Netscape® Communicator 6.1 or higher) with Java,™ RealPlayer, QuickTime,® Shockwave, Macromedia Flash™ and Adobe® Acrobat® plug-ins installed. All plug-ins may be accessed from the Trainer Resource Center in the Trainer's Toolbox.
- ❑ A high-speed (56K bps minimum) connection to the Internet.
- ❑ A CD-ROM or DVD player for the Training CD-ROM in case of slow or even non-existent Internet connectivity during a training session.

Note: When a projector is not available, trainers can download the PowerPoint presentation onto participants' computers and guide them through it. The presentation is available on MarcoPolo's Web site at http://www.marcopolo-education.org/pd/ training_kit.aspx, and it is included on the Training CD-ROM as well.

❑ **Participants' Computers,** equipped with:

- ❑ A Web browser (Internet Explorer 5.0 or higher or Netscape Communicator 6.1 or higher) with Java, RealPlayer, QuickTime, Shockwave, Flash and Adobe Acrobat plug-ins installed.
- ❑ A high-speed (56K bps minimum) connection to the Internet.
- ❑ Printer connection.
- ❑ Desktop software (word processing, spreadsheet, database, graphics and presentation package).

Preparation Checklist

- ❑ Register your training session at the online MarcoPolo Trainer Resource Center, at http://www.marcopolo-education.org/pd/ftrc.aspx.
- ❑ Read the Overview section to become familiar with the program's organization and principal learning objectives.
- ❑ Plan your presentation schedule using the program Planning Chart and the Trainer Resource Center.
- ❑ Review Parts 1–3. These sections make up the foundation of the program and should be included in every training session.
- ❑ Rehearse the PowerPoint presentation for Parts 1–3, available online in the Trainer Resource Center or on the MarcoPolo Training CD-ROM.
- ❑ Preview the MarcoPolo Web sites, which are the substance of Parts 2 and 3. These Web sites are updated frequently, so be sure to accommodate current revisions in your presentation.
- ❑ Review Parts 4 and 5. These sections offer a selection of training activities in lesson plan development and class preparation. Choose those most relevant to your group.
- ❑ Try out the training activities you plan to present and rehearse the accompanying PowerPoint presentation. Prepare for any Web site changes that may affect the presentation.
- ❑ Review the Appendix to determine whether any topics covered there are appropriate for your group.
- ❑ Make copies of the training handouts you plan to use for all members of your group.
- ❑ Confirm that your training site has the necessary equipment and that all equipment operates properly.
- ❑ If possible, create a bookmark file to guide participants through online portions of the training session and copy the file to all participants' computers.
- ❑ Reserve time at the end of your session for you and the members of your group to complete the online training evaluation forms.
- ❑ Complete the online training follow-up form after each training session you conduct.

Overview

This overview summarizes each part of the program and indicates the estimated time required for presentation. Use the overview to familiarize yourself with the program's organization and key objectives.

Sign-In/Roster

Have your training attendees sign in through the online Training Logistics Forms page at http://www.marcopolo-education.org/pd/logistics.aspx. Please see the Trainer Resource Center User's Guide in the Appendix of this Training Kit for detailed instructions concerning the roster. Should you be without Internet connectivity during your session, your attendees can still sign the roster in one of the following two ways. First, you can ask them to complete the online roster on their own before or after your training session. Or, you can have them fill out the appropriate hard copy roster form in the Appendix and return it to you so that you can input the information for them later. Please see the Appendix of this Teacher Training Kit for more information.

Part 1: What Is *Internet Content for the Classroom?*

Time Required: 30 minutes

Objectives:

- To provide hands-on experience in working with *Internet Content for the Classroom.*
- To model effective strategies for teaching with *Internet Content for the Classroom.*
- To establish the defining characteristics of *Internet Content for the Classroom.*

Summary

The program begins with a hands-on learning activity designed to give participants practical experience in working with *Internet Content for the Classroom* (ICFC) and a model for integrating it into the curriculum. The activity demonstrates that ICFC is the catalyst for effective Internet teaching and sets the stage for investigating how ICFC meets teachers' needs.

Part 2: Introducing MarcoPolo

Time Required: 30–45 minutes

Objectives:

- To provide background on the MarcoPolo Content Partnership.
- To explain the guiding principles of the MarcoPolo project.
- To highlight features of the MarcoPolo Web site.

Summary

This part of the training program introduces participants to the organizations that make up the MarcoPolo Content Partnership and outlines the principles that have guided their cooperative effort to provide standards-based *Internet Content for the Classroom* through a consortium of discipline-specific Web sites. Participants then tour the MarcoPolo Web site to learn about features that can help them integrate the Internet effectively into their teaching.

Part 3: The MarcoPolo Content Partner Web Sites

Time Required: 2.5–3.5 hours

Objectives:
- To explain how each MarcoPolo Content Partner Web site is organized.
- To highlight key features of each Content Partner Web site.
- To explore *Internet Content for the Classroom* (ICFC) available at each Web site.

Summary

This part of the training program provides a guided tour of the MarcoPolo Content Partner Web sites. Participants learn about the content standards adopted at each site, see how each site is organized and how its interactive features work and explore its contents. Finally, participants work in teams to review one Content Partner site, sharing their evaluations with the group. (This part can also be presented through group exploration of each Content Partner Web site, or by having teams of participants present in-depth reports on each site.)

Part 4: Lesson Development with *Internet Content for the Classroom*

Time Required: 1.5–7.5 hours (adjustable by trainer)

Objectives:
- To outline various types of Internet content and strategies for integrating *Internet Content for the Classroom* into the curriculum.
- To explore the use of *Internet Content for the Classroom* in core subject areas across the curriculum through case studies of sample lesson plans.
- To use *Internet Content for the Classroom* to gain hands-on experience developing standards-based lesson plans.

Summary

This part of the training program focuses on practical ways to integrate *Internet Content for the Classroom* into the curriculum, offering participants an opportunity to create standards-based lesson plans on their own. Participants first review a framework that outlines various types of Internet content and several strategies for integrating *Internet Content for the Classroom* into the curriculum. In an optional section, participants examine a relevant sample lesson plan drawn from one of the MarcoPolo Content Partner sites, using the case study method to see how *Internet Content for the Classroom* can be integrated into a specific part of the curriculum. (The 12 sample lesson plans presented in this section provide material for up to 6 hours of training.) Finally, participants work in teams to develop their own standards-based lesson plans using MarcoPolo *Internet Content for the Classroom*.

Part 5: Teaching with *Internet Content for the Classroom*

Time Required: 2.5 hours

Objectives:
- To examine factors that have an impact on the practical mechanics of teaching with *Internet Content for the Classroom*.
- To gain experience in preparing an *Internet Content for the Classroom*–based lesson plan for presentation in a variety of classroom situations.
- To exchange ideas for coping with class preparation and classroom management issues connected with the use of Internet-equipped classroom computers.

Summary

This part of the training program focuses on techniques for using *Internet Content for the Classroom* effectively in a variety of teaching situations. Participants first consider some factors that influence how Internet resources can be used in the classroom, then work in teams to prepare a lesson plan for implementation in several classroom settings. Finally, participants review suggestions for handling some special concerns associated with computers in the classroom.

Part 6: MarcoPolo Training Program Evaluation

Time Required: 20 minutes

Objectives:
- To assess the actual effectiveness of MarcoPolo materials in training teachers to integrate Internet content into their curricula.
- To evaluate the impact of the MarcoPolo training program.

Summary

This part of the training program is designed to gather information vital to the growth of MarcoPolo's professional development initiatives and to provide both participants and trainers with an opportunity to reflect on the session. Go to http://www.marcopolo-education.org/pd/logistics.aspx to complete forms.

Appendix: Optional Training Topics and Additional Training Information

This section provides additional information on topics of special interest, as well as the Trainer Resource Center User's Guide.

You can provide copies of this special interest material contained in this section to participants who raise questions about any of these topics in your training session, or use it to facilitate a discussion of the topic in the session. Meanwhile, the Trainer Resource Center User's Guide provides you with detailed information regarding how to record training session data and complete training surveys.

Optional Topics: Content Filters (30 minutes)—How they work, what they do, issues to consider and guidelines for their use in schools; Internet Plagiarism (30 minutes)—Scope of the problem and suggested steps to combat it; Evaluating Internet Content (30 minutes)—Guidelines for gauging credibil-

ity, accuracy, bias, substance, currency, relevance to the curriculum and suitability for classroom use; and A Glossary of Internet Terms.

Additional Training Information: Trainer Resource Center User's Guide for Field Trainers to use the Trainer Resource Center effectively; Training Logistics Forms for rosters, survey and follow-up forms to track MarcoPolo Field Training sessions.

PART 1: WHAT IS *INTERNET CONTENT FOR THE CLASSROOM?*

Time Required: 30 minutes

Objectives:
- To provide hands-on experience in working with *Internet Content for the Classroom*.
- To model effective strategies for teaching with *Internet Content for the Classroom*.
- To establish the defining characteristics of *Internet Content for the Classroom*.

Handouts:

Summary

The program begins with a hands-on learning activity designed to give participants practical experience in working with *Internet Content for the Classroom* (ICFC) and a model for integrating it into the curriculum. The activity demonstrates that ICFC is the catalyst for effective Internet teaching and sets the stage for investigating how ICFC meets teachers' needs.

Training Tips

- **Choose an activity appropriate to your audience.**
  The lesson presented here examines the Great Chicago Fire, a well-known and colorful historical episode that most participants will find interesting. As a model, however, the lesson is relevant mainly to middle and high school history teachers. Consider choosing a more pertinent hands-on activity for elementary school teachers and those who teach other disciplines, such as math or science. A variety of sample lessons can be found in Parts 4 and 5 of this Teacher Training Kit.

- **Adapt the activity to the training situation.**
  As presented here, the lesson assumes that participants can access the Internet through their own computers, either individually or in small groups. They are provided with a worksheet and can use it to analyze historical documents online. If possible, bookmark the participants' browsers to the pages on which these documents are found before the training session begins.

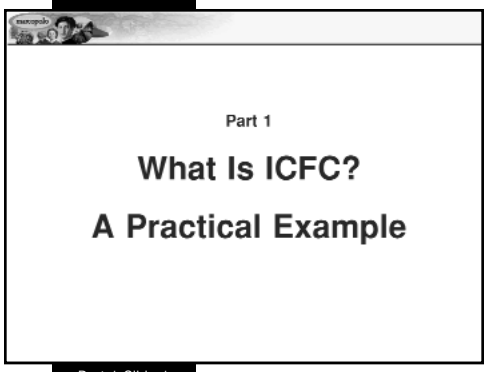
  To present the lesson in a setting where only one computer has access to the Internet, provide participants with printouts of the historical documents as well as copies of the worksheet. Use the computer to show them how you accessed the documents and to highlight additional content on the Web site.

  You can also present this lesson in a setting with no access to the Internet by using printouts and screen shots included in the presentation package (on the Training CD-ROM) that illustrate where the documents are found and additional content on that Web site.

  In whatever training situation you find yourself, be sure to point out how this lesson could be adapted to settings with better or worse Internet access. Use this point to emphasize that teaching with the Internet depends not on high-powered hardware but on high-quality content and an effective teaching strategy.

Training Tips (continued)

- **Tie the activity clearly to your training objectives.**
  Some participants may find this hands-on approach a strange way to begin Internet training and become impatient for talk about Web sites. Anticipate this reaction by explaining the purpose of the exercise at the outset, and remain alert to the mood of your group as you proceed. As soon as they see how the lesson works, shift attention to what it shows about Internet-based content. Specifically, focus on *Internet Content for the Classroom* as the key to the lesson's effectiveness—content that is authoritative, appropriate for students, aligned with curricular standards and adaptable to a variety of classroom settings and teaching strategies.



Part 1 Slide 1

Part 1 Slide 2

Handout 1-1
Handout 1-2

http://www.chicagohistory.org/fire/

What Is ICFC?

1. Explain that ICFC means "Internet Content for the Classroom," the kind of content teachers can find at the MarcoPolo Content Partner Web sites. Before looking at those Web sites, however, participants should have some practical experience with *Internet Content for the Classroom* in its natural habitat—the classroom.

Today's Lesson

2. Explain that you are going to model an effective strategy for teaching with *Internet Content for the Classroom* by having participants play the role of students. Ask them to imagine that they are back in a high school history classroom. To enhance the illusion, call the "class" to order and reintroduce yourself as today's substitute.

3. Introduce the lesson as an investigation into how historians reconstruct the past using primary sources. Pass out copies of the Witness to Destruction worksheet **(Handout 1-1)** and The Burnt District, an archival map of the area burned in the Great Chicago Fire **(Handout 1-2)**. Explain that participants will use the worksheet to analyze and compare two newspaper reports on the Chicago Fire.

4. Review the worksheet in a brief discussion. Note that it can help one discover various kinds of information in a historical document: both facts about the document itself and facts about the past.

5. Divide participants into two groups and have each group follow the directions at the top of the worksheet to access one of the newspaper reports at *The Great Chicago Fire and the Web of Memory* Web site at http://www.chicagohistory.org/fire/. Have them use the worksheet to analyze their document.

6. When participants have completed their analyses, compare the two documents in a brief discussion, using a chalkboard or easel pad to chart similarities and differences. For example:
   - Do the reporters agree in their descriptions of where the fire began and how it spread?
   - Do they mention the same landmarks of destruction and highlight similar incidents of human drama?
   - Do they contradict one another on any questions of fact?

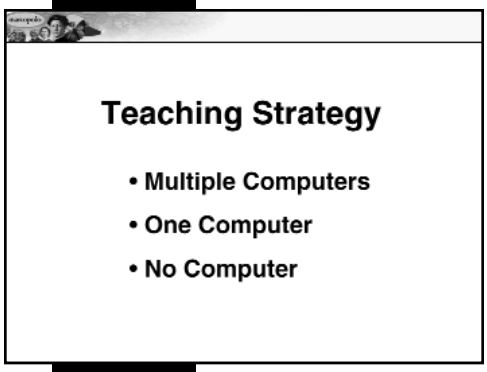
7. Talk about how a historian might use these two documents to construct a history of the Great Chicago Fire.
   - What are the advantages of having two accounts of the fire? To what extent can they be combined? Are there points on which they can be set in contrast or played off one another?
   - What might account for stylistic and factual differences between the documents? Are the writers aiming at different audiences? Offering different insights on the significance of the fire?

8. For another twist, pose the challenge, for example, that only one article can be archived to represent history. Discuss the participants' answers. Which would you choose? Why would you choose it over the other article?

9. Finally, compare the documents to visual accounts of the fire, like the map of the burned area. Have participants explore the Gallery areas of *The Great Chicago Fire and the Web of Memory* Web site for additional visual documentation, such as photographs of the destruction and engravings of dramatic scenes like those described by the newspaper reporters. To sample some of these Galleries, click Continue from the Web site homepage, then The Great Chicago Fire, then Galleries for any of the sections offered. What might a historian draw from these sources in constructing a history of the fire and its significance?

Part 1 Slide 3

Part 1 Slide 4



Part 1 Slide 5

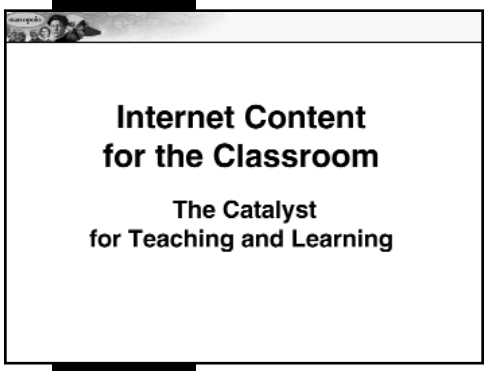
Handout 1-3 ▶

See Part 5 for more on adapting Internet-based lesson plans to different classroom settings.

Teaching Strategy

10. Now call the participants back from their imaginary high school classroom to talk about the lessons this exercise holds for teachers. (You may find it useful at this point to distribute copies of the formal plan for this lesson, **Handout 1-3.**)

- Ask participants to describe the strategy you have been modeling for integrating Internet content into the curriculum. They should recognize that the lesson's underlying strategy is fairly conventional: students analyze and discuss selected documents using a worksheet. In this case, however, the documents appear on screen, via the Internet, rather than on paper.
- Lead a discussion that explores ways a teacher might adapt the lesson to various classroom settings. Ask participants how they would conduct the lesson in a classroom with only one computer or with no computers. (See the Training Tips section above on pages I.1 and I.2 for suggestions on adapting the lesson to these settings.)
- Ask for variations appropriate to other settings, such as scheduled class time in a media center, independent study time in a library, etc.
- Through this discussion, guide participants toward a recognition that the Internet is a flexible teaching resource, not a technology that imposes its own rules on the learning process. In fact, the Internet can have a powerful impact on learning even when Internet access is limited—but that impact depends on the quality of Internet content.



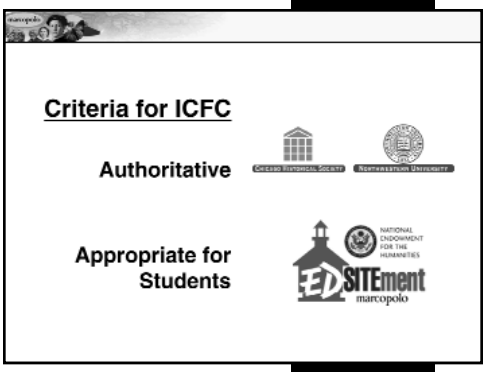
Part 1 Slide 6

Internet Content for the Classroom

11. Propose to your group that quality content is the catalyst for teaching effectively with the Internet. Lead a discussion exploring the criteria for quality that distinguish MarcoPolo's *Internet Content for the Classroom* from other kinds of content one can find on the Web, focusing on the content they used in the Witness to Destruction lesson.

Authoritative

12. Note first that *Internet Content for the Classroom* is clearly authoritative. Point out to participants that they have been working with material from *The Great Chicago Fire and the Web of Memory* Web site. This Web site was reviewed by a panel of experts for EDSITEment, the National Endowment for Humanities K–12 Web site for educators and an educational partner in the MarcoPolo project. The document analysis worksheet used in the exercise also comes from an EDSITEment peer-reviewed Web site: the National Archives and Records Administration's *Digital Classroom.*



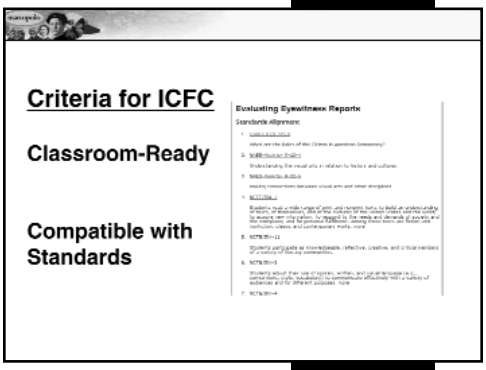
Part 1 Slide 7

Appropriate for Students

13. Point out next that *Internet Content for the Classroom* must be appropriate for students. Note that the material used in their lesson comes without links that might tempt a student to go on a shopping spree or wander into one of the Internet's more unsavory byways. The Web sites have been reviewed by educational experts to ensure that the resources are not only suitable for students, but also presented in a manner easily understood by students.

Classroom-Ready

14. Third, suggest that *Internet Content for the Classroom* should be classroom-ready. Explain that the Witness to Destruction lesson is adapted from a lesson plan developed for EDSITEment, one of MarcoPolo's Content Partners. This lesson, Evaluating Eyewitness Reports (http://edsitement.neh.gov/view_lesson_plan.asp?ID=281), provides rich Internet resources accompanied by guidelines for classroom teaching. Point out that the lesson plan includes links to specific documents, detailed discussion points, suggested assignments and directions for extending the lesson to content on other Web sites. Instead of starting from scratch, a teacher can adopt the EDSITEment lesson plan, adapt it or use it as a model for designing a lesson of his or her own.

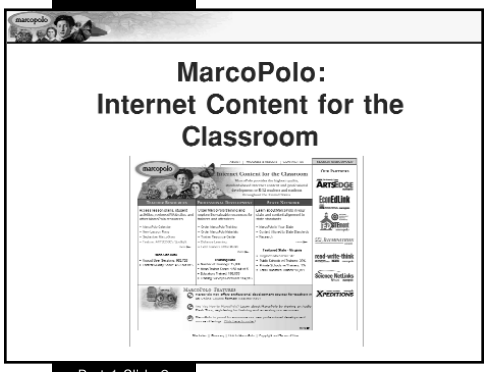


Part 1 Slide 8

Compatible with Standards

15. Finally, emphasize that *Internet Content for the Classroom* is compatible with curricular standards. Point out that the EDSITEment lesson plan includes an outline of learning goals and skills to help teachers align this lesson with their own curricular standards.

Discuss briefly how the lesson aligns with standards that call for analysis of primary documents in the history curriculum and for media literacy in the language arts curriculum. Highlight the lesson's relevance to standards pertaining to research and critical thinking skills.



Part 1 Slide 9

MarcoPolo: *Internet Content for the Classroom*

16. Wrap up this part of the training session by emphasizing that *Internet Content for the Classroom* is content created to meet teachers' needs, content that eliminates many of the worries and helps solve many of the problems teachers face as they try to integrate the Internet into their curricula. And the best place to find this kind of content is MarcoPolo.

Witness to Destruction

In 1871, a great fire virtually destroyed downtown Chicago. It was an event witnessed by millions and vividly reported in newspapers coast to coast. For historians, these reports serve as a primary source of information about the Great Fire. In this activity, you will evaluate two reports on the fire to learn how historians construct history from the records of past experiences and how those records can influence our view of what really happened in the past.

Use the Internet to read two newspaper accounts of the 1871 Chicago fire, accessible through EDSITEment at *The Great Chicago Fire and the Web of Memory* Web site. Then evaluate one of the newspaper reports using the *Digital Classroom's* Written Document Analysis Worksheet from the National Archives and Records Administration.

"The Tribune Reports to Chicago on Its Own Destruction"
www.chicagohistory.org/fire/conflag/tribune.html

"...the adamantine bulwarks of hell..."
www.chicagohistory.org/fire/media/bulwark.html

U.S. National Archives & Records Administration

www.archives.gov September 8, 2003

Written Document Analysis Worksheet

1. Type of Document (check one)

___ Newspaper ___ Letter ___ Patent ___ Memorandum ___ Census Report
___ Telegram ___ Diary ___ Map ___ Advertisement ___ News Report
___ Press Release ___ Report ___ Congressional Record
___ Other: _____

2. Unique Physical Qualities of the Document (check one or more)

___ Handwritten ___ Typed ___ Notations ___ "Received" Stamp ___ Seals
___ Interesting Letterhead ___ Other: _____

3. Date(s) of Document: _____

4. Author (or Creator) of the Document: _____
Position (Title): _____

5. For what audience was the document written? _____

6. Document Information

A. List three things the author said that you think are important.

_____
_____
_____

B. Why do you think this document was written?

_____

C. What evidence in the document helps you know why it was written? Provide quotations.

_____
_____

D. List two things the document tells you about life in the U.S. at the time it was written.

_____
_____

E. Write a question to the author that is left unanswered by the document.

_____
_____

Designed and developed by the Educational Staff, National Archives and Records Administration, Washington, DC 20408.

The Burnt District

From *The Great Chicago Fire and the Web of Memory* (www.chicagohistory.org/fire/ruin/pic0563.html).

Evaluating Historical Reports

Note: This exercise is derived and adapted directly from EDSITEment's Eyewitness to History lesson plan.

Aim: How is history constructed through primary sources, such as newspaper reports, and how can that history be evaluated and understood in light of its mode of production?

Materials: EDSITEment Resources. Reviewed Web sites: *Digital Classroom, The Great Chicago Fire and the Web of Memory.*

Subject Areas: Language Arts, Social Studies, U.S. History.

Instructional Objectives: The students will be able

- To gain experience in working with different accounts of historical events;
- To explore issues related to the evaluation of historical evidence;
- To consider the uses of historical evidence within different kinds of history; and
- To recognize that historical evidence may raise questions rather than provide answers about a past event.

Skills: Information gathering and research skills, primary document analysis, critical thinking, historical analysis, Internet skills.

Time Required: 2–3 class periods.

Grade Level: 9–12.

Summary:

This lesson offers students experience in drawing historical meaning from newspaper accounts that present a range of different perspectives. Students work with alternative newspaper reports of a single event, the Great Chicago Fire of 1871, to see how historical knowledge is constructed. After noting how these accounts complement and compete with one another, students will think about how they could use these primary source materials to engage in three types of historical reporting: a factual account of the fire, a description of the historical experience and an interpretation of the fire's historical significance. To conclude the lesson, students apply their research skills to present-day newspaper accounts, gathering published examples of differing news stories that describe the same contemporary event. They then produce a report on the potential value and use of these news stories as historical evidence.

Development:

Begin by providing each student with a copy of the Written Document Analysis Worksheet, available through EDSITEment at the *Digital Classroom* Web site of the National Archives and Records Administration (http://www.archives.gov/digital_classroom/index.html). From this page, click Document Analysis Worksheet, then click Written Document. Discuss with students how they can use the worksheet to discover various kinds of information in a historical document, including facts about the document itself (date, author, audience, etc.) and facts about the past. Explain that in this lesson students will use the worksheet to examine a variety of historical reports, first comparing several reports of a single dramatic event, then evaluating accounts of a more complex contemporary situation.

Have students first read two newspaper accounts of the Great Chicago Fire of 1871, available through EDSITEment at *The Great Chicago Fire and the Web of Memory* Web site. For the first account, a front page report from the *Chicago Tribune* published two days after the fire, on October 11, 1871, click The Great Chicago Fire on the Web site's homepage, then select Library under the heading The Great Conflagration and click The Tribune Reports to Chicago on Its Own Destruction. For the second

account, published by the *Chicago Evening Post* on October 17, 1871, click The Web of Memory on the Web site's homepage, then select Library under the heading Media Event and click "...the adamantine bulwarks of hell..."

- Have students work individually or in groups to analyze these two newspaper reports using the Written Document Analysis Worksheet. Compare their responses to selected sections of the worksheet in a class discussion. For example, what questions did they pose that the authors of these reports left unanswered?
- Help students compare the two newspaper reports, using the chalkboard to create a chart of similarities and differences. Do the reporters agree in their description of where the fire began and how it spread? Do they mention the same landmarks of destruction and havens of safety? Do they disagree on any questions of fact?
- Compare the reporters' selection of episodes: Do they highlight similar incidents? Focus on similar scenes of human interest? Share a vocabulary for evoking these dramatic moments? Ask students to offer possible reasons for any differences they may note. Are the reporters addressing different audiences? Aiming at different effects? Offering different perspectives on the significance of the fire?
- Finally, discuss how a historian might use these alternative accounts of the Chicago Fire. What is the advantage of having two accounts? How do they supplement one another? To what extent can they be combined? In what respect can they be set in contrast or played against one another? In what sense can they be considered primarily objective accounts or the records of two personal experiences?
- Because both of these newspaper accounts refer often to the streets and districts of Chicago, students may find it helpful to have a map of the city available as they read. For a map of the area burned in the Chicago Fire, click The Great Chicago Fire on the homepage of *The Great Chicago Fire and the Web of Memory* Web site, then select Galleries under the heading The Great Conflagration and click Inside the Burning City. This gallery includes not only a map (Mapping the Fire) but also engravings of some scenes that students might compare to those described in the two newspaper reports.

Follow-Up Research Activities:

Have students collect a series of articles from two newspapers over a one-week period. These articles should all cover the same contemporary issue (for example, an athletic competition, a natural disaster, a public celebration, the coming of some new technology like the automobile or the Internet). Have students use the Written Document Analysis Worksheet to evaluate their articles. Which perspectives are being represented? Which are not? How are the articles similar? How are they different? Students should then prepare a researcher's report explaining how these articles might be used by some future historian.

Part 2: Introducing MarcoPolo

Time Required: 30–45 minutes

Objectives:
- To provide background on the MarcoPolo Content Partnership.
- To explain the guiding principles of the MarcoPolo project.
- To highlight features of the MarcoPolo Web site.

Handouts:

Summary
This part of the training program introduces participants to the organizations that make up the MarcoPolo Content Partnership and outlines the principles that have guided their cooperative effort to provide standards-based *Internet Content for the Classroom* through a consortium of discipline-specific Web sites. Participants then tour the MarcoPolo Web site to learn about features that can help them integrate the Internet effectively into their teaching.

Training Tips

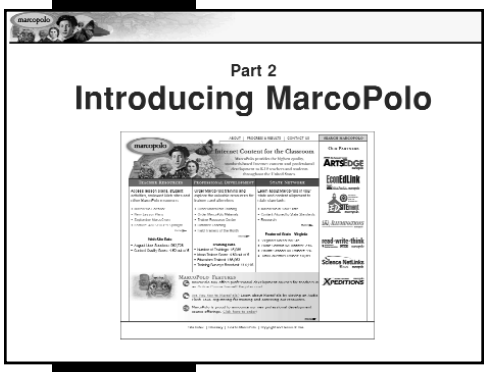
- **Invite discussion.**
  The training materials in this part of the program are designed to guide you through a presentation of the MarcoPolo Content Partnership and Web site. Plan to add prompts along the way that will encourage your audience to raise questions, and look for opportunities to engage them actively in the training process.

- **Focus on teachers' needs.**
  While participants will certainly want to know who is responsible for creating MarcoPolo and how these organizations have developed content for their Web sites, they will also want to know how this information is relevant to their work in the classroom. In other words, why does this matter to teachers? The presentation is designed to help you address this implicit question, drawing connections between aspects of the MarcoPolo project and teachers' needs. Plan also to pace your presentation with this question in mind, devoting most attention to those topics most relevant to teaching.

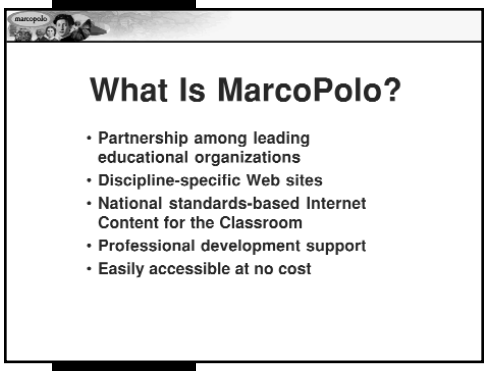
- **Preview the MarcoPolo Web site.**
  Before conducting the guided tour outlined here, explore the MarcoPolo Web site on your own. Key features of the site are briefly explained in this section, but you may decide that more (or less) explanation would be appropriate for your group. An offline version of the MarcoPolo Tour and an offline cache of the MarcoPolo site are included on the Training CD-ROM should you have slow or nonexistent Internet connectivity during a training session.

- **Reinforce Internet navigation skills.**
  These training materials assume that participants will follow your guided tour by navigating through the MarcoPolo Web site on their own computers. Take this opportunity to make sure all members of the group know how to open a new browser window when following a link (to keep a prior window easily accessible) and how to scroll back through the browser's catalogue of visited links (to avoid navigating with the Back and Forward buttons alone).

- **Point out the Teacher's Guides.**
  The Elementary and Secondary Teacher's Guides, available at http://www.marcopolo-education.org/teacher/guides.aspx, are useful supplements to navigating the MarcoPolo gateway site, which is outlined on pages 4–7 of the Guides.



Part 2 Slide 1



Part 2 Slide 2

Part 2 Slide 3

Introducing MarcoPolo

1. Explain that this part of the training program will introduce participants to MarcoPolo, a partnership project aimed at providing teachers with the resources they need to make the Internet as integral to every student's education as textbooks and libraries are today.

What Is MarcoPolo?

2. The MarcoPolo project was launched in 1997 as a partnership among some of the nation's leading educational organizations.

- Each of these organizations has created its own independent, discipline-specific Web site to provide teachers with standards-based *Internet Content for the Classroom*.
- In addition, the MarcoPolo program offers teachers professional development support through online and print training materials, as well as on-site and distance learning training sessions.
- Many of these resources are accessible with an ordinary Internet hook-up—no need for high-speed modems and high-end computers. Most important, all online content is available at no cost.

The MarcoPolo Content Partnership

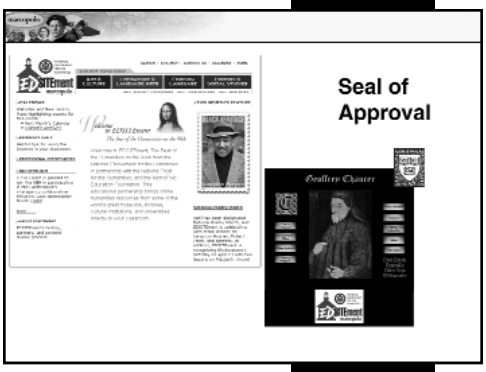
3. The MarcoPolo Content Partners make up perhaps the most prestigious concentration of educational expertise on the Internet.

- Each is a recognized leader within its discipline.
- Many have been instrumental in developing national content standards for their disciplines.
- All have extensive grassroots programs that keep them in touch with what's going on in the classroom so they can create resources that really meet teachers' needs.

Seal of Approval

4. Because MarcoPolo content is developed by the MarcoPolo Content Partners, it comes to teachers with an explicit "seal of approval."

- The Content Partners have each established a thorough review process to make sure that content available through their Web sites is accurate, unbiased, up-to-date and appropriate for the classroom.
- All content is screened by an expert review panel that includes both eminent scholars and experienced teachers to make sure that it is both accurate and relevant to the K–12 curriculum.
- In addition, every Content Partner Web site provides the names and credentials of its review panel members and a full explanation of the review process itself. Like the list of credits at the front of a textbook, this is probably not something most teachers will take the time to look at, but it can give you an important measure of confidence just knowing it is there.

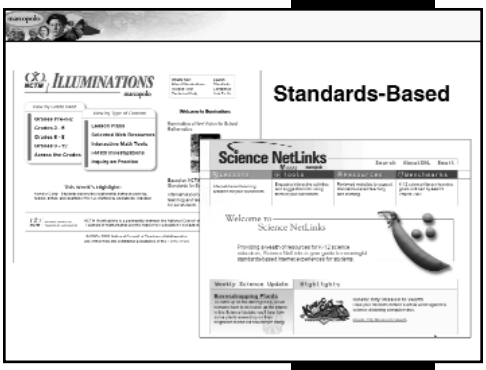


Part 2 Slide 4

Standards-Based

5. The MarcoPolo Content Partners recognize that teachers are guided by curriculum standards, and all provide content that reflects the standards commonly adopted in their disciplines.

- Some Content Partners have even organized their Web sites to align content directly with national standards, making it easy for a teacher to find resources that support a specific curricular goal.
- Others provide indexing information to help teachers align content with state guidelines.
- Either way, MarcoPolo's commitment to standards means Internet content that fits the curriculum and fulfills teachers' needs.



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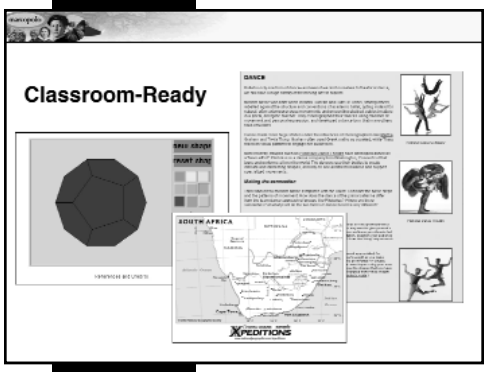


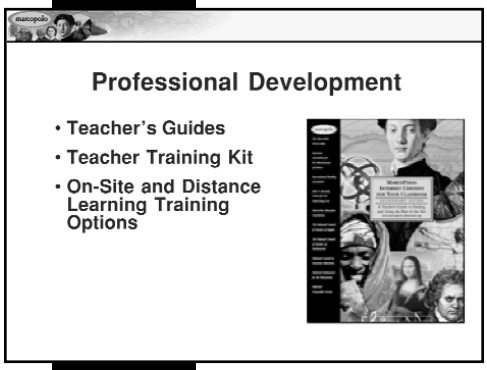
Part 2 Slide 6

Classroom-Ready

6. The MarcoPolo Content Partners are also aware that teachers prefer content in formats they can actually use—instructional tools rather than raw information. To meet this need, the Content Partner Web sites offer:

- Lesson plans for all grade levels;
- Online activities that engage students in self-directed learning; and
- A wide assortment of charts, maps and other teaching materials specially designed to print out.

After all, *Internet Content for the Classroom* should be adapted to the classroom and should be adaptable to various classroom settings and various teaching styles.



Part 2 Slide 7

Professional Development

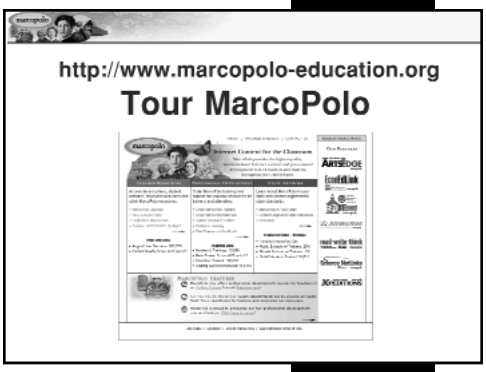
7. Finally, to help teachers bring Internet content into the classroom, the MarcoPolo Content Partners provide extensive professional development support.

- Both Elementary and Secondary Teacher's Guides, located at http://www.marcopoloeducation.org/teacher/guides.aspx, are available to help teachers learn about MarcoPolo and Internet integration. Several Content Partners have also developed their own online resources for teachers, which offer classroom-tested strategies for using Internet resources in class.
- Together, the Content Partners have also developed this comprehensive Teacher Training Kit, available for download at no cost, which is designed to help school systems meet their professional development needs.
- MarcoPolo also offers on-site and distance learning training sessions for teachers and trainers in schools, districts and states across the country.

Tour MarcoPolo

8. Follow up this introduction to the MarcoPolo project with a tour of the MarcoPolo Web site.

- Have participants access the site on their own computers and click along as you conduct the tour. Distribute copies of the MarcoPolo Outline Site Map **(Handout 2-1)** to help guide participants through their tour.
- Point out on the homepage that the MarcoPolo Web site provides teachers with easy access to all the Content Partner sites, making this the place to go for "one-stop shopping" convenience.
- But MarcoPolo is not just a gateway; it's an educational resource as well. Go on to show participants the resources described below.



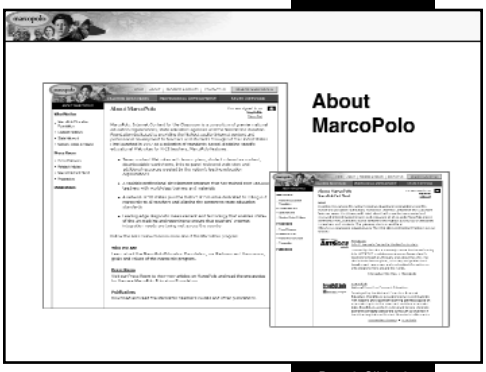
Part 2 Slide 8

◀ **Handout 2-1**

About MarcoPolo

9. Start by showing attendees where they can go to obtain general background information on the MarcoPolo program. On the MarcoPolo homepage, click on the About MarcoPolo link at the top and highlight the three components in this section.

- **Who We Are**—an overview of the MarcoPolo program, including information on the Content Partners, as well as the mission, goals and values of the MarcoPolo program.
- **Press Room**—press releases, articles, fact sheets and other information to help you keep up with the latest on the MarcoPolo program.
- **Publications**—links to downloadable copies of the Elementary and Secondary Teacher's Guides, which provide an overview of the MarcoPolo program, as well as Content Partner Web site overviews, sample lesson plans, student activities and technology tips.



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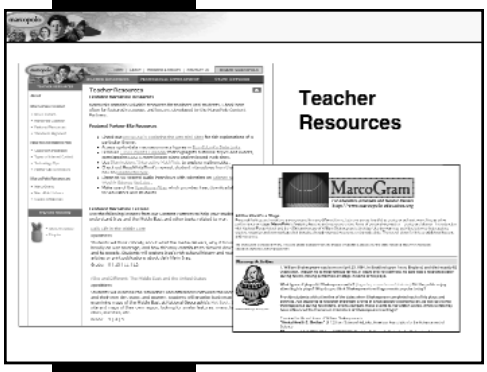
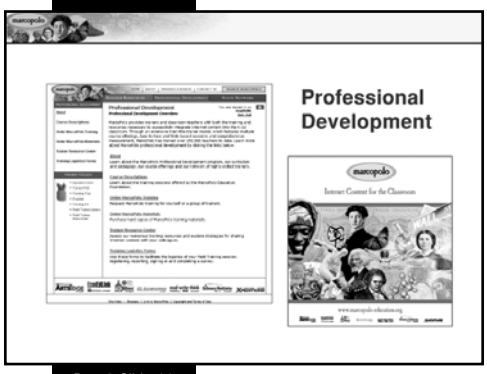


Part 2 Slide 10

Teacher Resources

10. Next, have participants select the "Teacher Resources" section of the MarcoPolo Web site and highlight the four components of this section. Point out that this is the area of the Web site for teachers to visit to learn about new and featured content, as well as tips for integrating MarcoPolo content into the classroom.

- **About**—overviews, interactive site maps, and national standards for each Content Partner site.
- **MarcoPolo Content**—the most up-to-date teacher resources currently found on the Content Partner sites, including new lessons, Content Partner–recommended resources, a calendar that lists date-specific events with related Content Partner lessons and resources and information regarding alignment of MarcoPolo content to the national standards.
- **How to Use MarcoPolo**—a discussion of various types of Internet content, strategies for integrating this content into the classroom, technology tips and Content Partner Site overviews.
- **MarcoPolo Resources**—additional items to help teachers use MarcoPolo. Included here are the MarcoGram monthly thematic educator newsletters, Elementary and Secondary Teacher's Guides and the LISTSERV® e-mail forum MarcoPolo offers, in which educators may exchange ideas.



Part 2 Slide 11

Professional Development

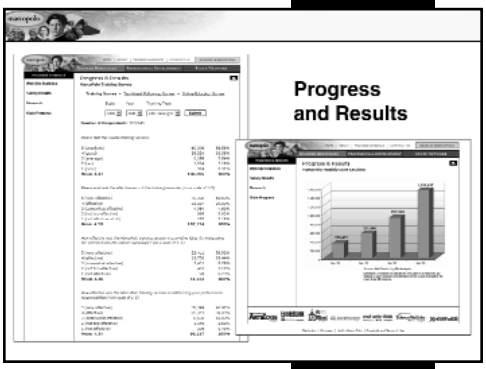
11. To show attendees what MarcoPolo offers by way of teacher and trainer training, next visit the "Professional Development" section of the Web site. Educators can visit this section either to obtain training or to obtain resources to help them train others. As you describe this section, highlight each of the following areas, spending the most time on the Trainer Resource Center.

- **About**—a general overview of the MarcoPolo professional development program.
- **Course Descriptions**—full descriptions of all training—both on-site and distance learning—that MarcoPolo offers.

- **Order MarcoPolo Training**—online ordering form that allows individuals or groups of educators to purchase MarcoPolo training. Individuals may also sign up for a free one-hour awareness session conducted via Web conferencing.
- **Order MarcoPolo Materials**—online mechanism for purchasing hard copies of MarcoPolo Professional Development materials, including the Teacher Training Kit and Teacher's Guides. PDF copies of many of these materials can still be downloaded free of charge.
- **Trainer Resource Center**—an extensive online library of free resources and strategies to facilitate your MarcoPolo training session, including electronic copies of all print materials, ready-made training presentations, activity development templates, an interactive Agenda Creator and tips for using these resources in training sessions. Make sure to point out the Before, During and After navigation structure of the Trainer Resource Center, explaining that this navigation, along with the resources and strategies within each section, takes a trainer through a training instructional cycle.
- **Trainer Toolbox**—a toolbox of additional training resources, including an Agenda Creator, a downloadable version of the Teacher Training Kit, training tips, the Field Trainer MarcoGram newsletter and more.

Progress and Results

12. Visit the "Progress and Results" section of the site to show how MarcoPolo tracks the effectiveness of the program.



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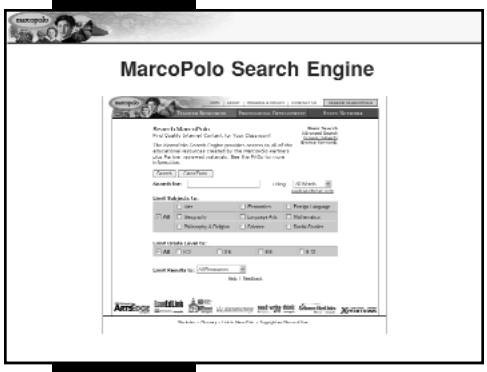
- **Web Site Statistics**—monthly statistics tracking total visitors to the MarcoPolo Web sites.
- **Survey Results**—the results of three separate MarcoPolo surveys showing how teachers feel about MarcoPolo content and professional development as well as how they are using MarcoPolo in their schools.
- **Research**—studies that demonstrate how MarcoPolo is affecting teaching practices and student achievement.
- **State Progress**—statistics illustrating the impact of professional development, by state.



Part 2 Slide 13

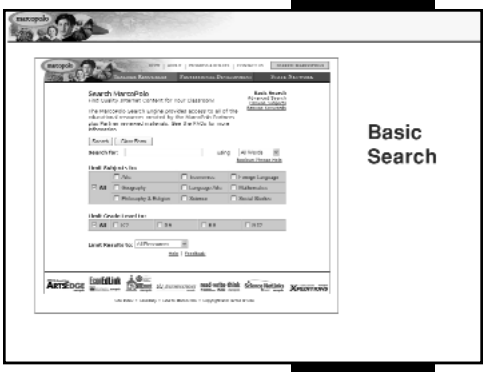
MarcoPolo Search Engine

13. Next, invite participants to test the MarcoPolo Search Engine. This is a good segue to move from a discussion of the MarcoPolo site to the Content Partner sites.

- Explain that this Search Engine is a collaborative project of the MarcoPolo Content Partners. As such, the MarcoPolo Search Engine, which is available at the MarcoPolo gateway site and on the Content Partner sites, serves both as a broad-scale search tool for locating information across all MarcoPolo sites and as a targeted, Advanced Search tool for finding resources on a single Content Partner Web site.
- Discuss how a teacher might use this comprehensive search engine in planning multidisciplinary study units or to gather resources on topics that range across several disciplines (such as pollution, a topic for economists, scientists, geographers and legislators).
- Next, point out some of the key advantages of the MarcoPolo Search Engine. Point out, for instance, that the MarcoPolo Search Engine searches only the "MarcoPolo Universe," thereby shrinking the total number of Internet resources so that searching for relevant educational content is manageable for teachers. This selectivity is particularly important for teachers who indicate that they don't have enough time to find good content or that they are concerned about the quality of content they do find online.
- Note also that the MarcoPolo Search Engine is catalogue-based, meaning that each resource has been examined by an educator and/or librarian, who has expressly selected relevant keywords to associate with the resource. As a result, the MarcoPolo Search Engine returns fewer results than many other search engines but significantly more relevant matches. Again, this selectivity is very helpful for individuals who have concerns about time and quality.

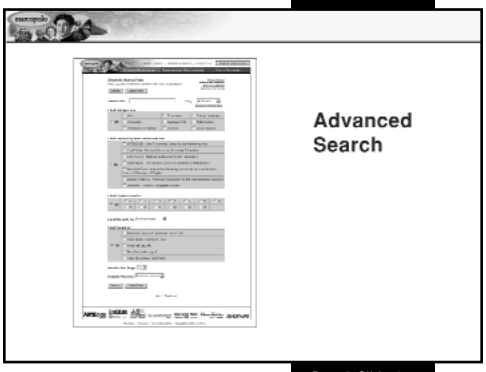
Search Options

14. Explain that the MarcoPolo Search Engine defaults to the **Basic Search.** The Basic Search enables teachers to locate resources within specific subject areas and appropriate for specific grade levels. You will want to point out that there are four other types of searches educators may also use to further focus their efforts: Advanced Search, Browse Subjects, Browse Keywords and Boolean Search.



Part 2 Slide 14

15. Advanced Search—enables users to narrow their search by grade level, Content Partner site, subject, type of content and format of content. You might point out that focusing on format (such as audio resources and images) can be very helpful for some teachers. For example, many elementary teachers may be interested in searching for nontextual resources.



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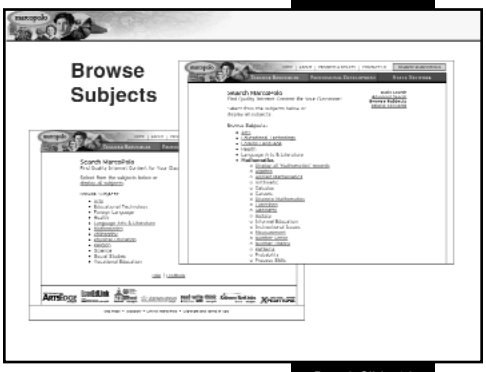
16. Browse Subjects—provides a subject-based, top-down way to review the content catalogued in the MarcoPolo Search Engine. This feature is useful for teachers who would like to teach a broad subject but haven't determined yet how to narrow their focus.



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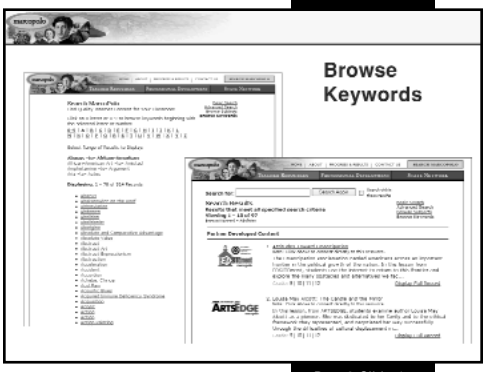
17. Browse Keywords—allows users to view the complete list of keywords that are used to catalogue resources within the MarcoPolo Search Engine. This feature is useful for those who become frustrated should none of their initial search terms yield results. If a user finds a good resource, on the other hand, he or she can look at the keywords used to catalogue that resource under Display Full Record and, in turn, browse the same keywords to locate related resources.



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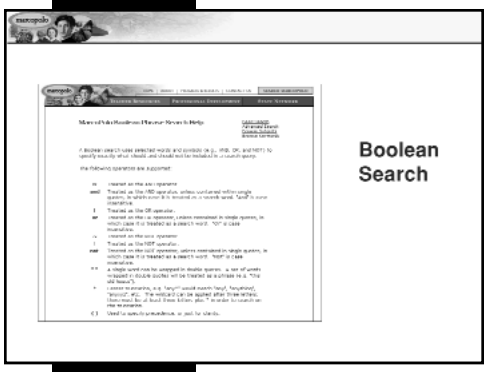

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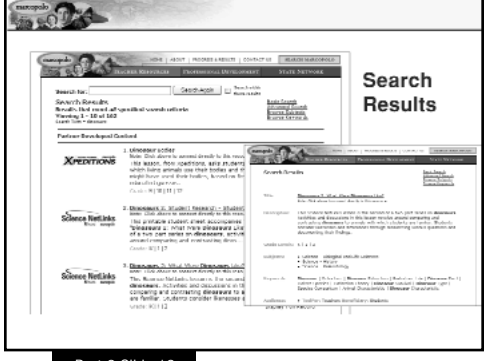
18. Boolean Search—provides another means by which to narrow searches using selected words and symbols (e.g., *and, or* and *not)* to specify exactly what should and should not be included in a search query. This method is useful for conducting very precise searches.

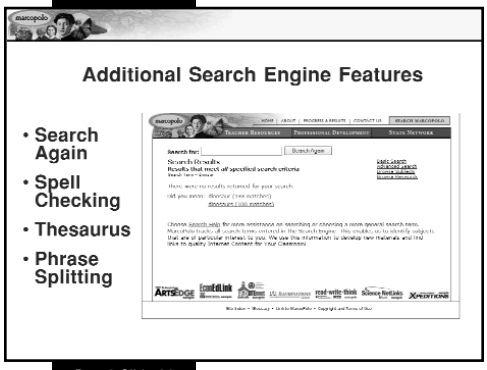
Search Results

19. To show participants the various search options referenced above, conduct a sample search and view the results. As you view the results, point out the following key features of the search results.

- Point out that a single search term yields results from multiple sites, demonstrating effectively the cross-curricular nature of the MarcoPolo Search Engine.
- Note also that a single word will yield both Content Partner–developed and Content Partner–reviewed resources. Content Partner–developed tags (i.e., the Content Partner logo alone) indicate that the content is original to the respective Content Partner site. Meanwhile, Content Partner–reviewed tags (i.e., the Content Partner logo with a red check mark) indicate resources that have been reviewed by a panel of experts from the respective Content Partner site.
- Finally, show that when one conducts a search, the display page shows the resource title, grade level and a description. And clicking on the Display Full Record button yields more comprehensive information, such as instructional strategy, standards and keywords. This simultaneously indicates the "catalogue nature" of the Search Engine and provides a means for educators to learn more about a resource before exploring it further.



Part 2 Slide 19



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Additional Search Engine Features

20. Point out to participants that there are also several additional Search Engine features designed to help users further refine their searches and find precisely what they are looking for.

- **Search Again:** After an initial search, a user can perform additional searches directly from the top of the results page and can also refine searches within a specific results set.
- **Spell Checking:** If no results are found for a search, a spell checker will appear to show a user other similarly spelled words that may produce positive results.

- **Thesaurus:** If results still are not found, a thesaurus will appear to show a user other related words that may produce positive results.
- **Phrase Splitting:** If a user enters a series of words that produce no results, those words will be searched individually.

Start Your Engines

21. Have participants experiment with the MarcoPolo Search Engine by testing it against a typical commercial search engine.

- Divide the group into teams and distribute copies of the Start Your Engines handout **(Handout 2-2)**.
- When participants have completed their "road tests," discuss the kinds of situations in which a teacher would turn to the MarcoPolo Search Engine for help in finding *Internet Content for the Classroom* and situations in which a typical search engine would be more useful.

◀ **Handout 2-2**

Teacher as Final Arbiter

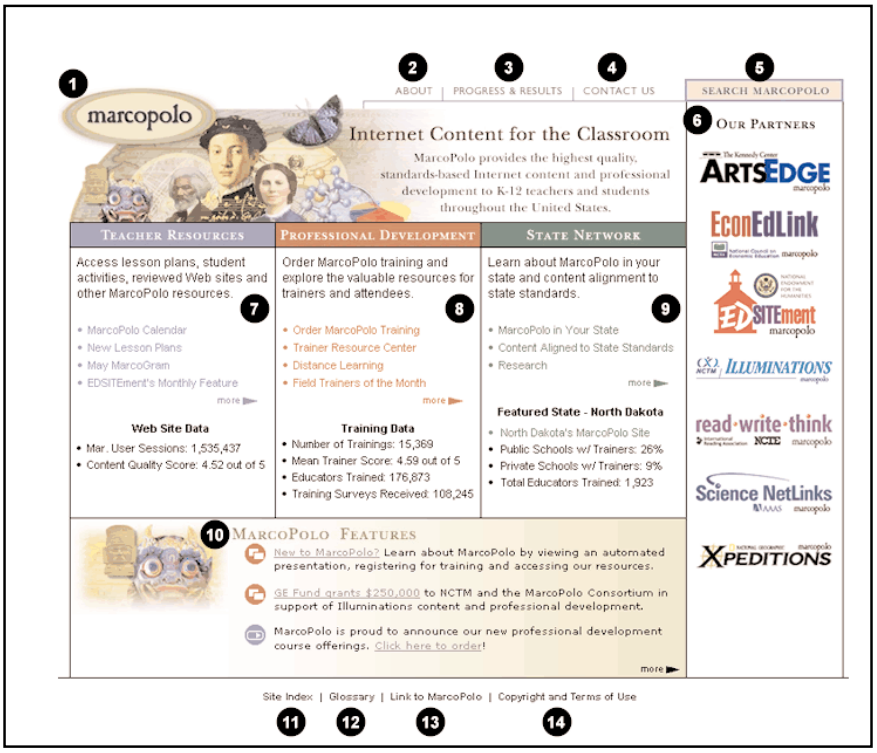
22. Conclude this part of the training program by emphasizing that MarcoPolo has grown and continues to grow on the strength of a single idea: that teachers are the final arbiters in the world of education.

- A program like MarcoPolo succeeds when teachers use it and fails when they find that it does not meet their needs. That's why the MarcoPolo Content Partners have sought teachers' advice at every stage of their project, why they continually evaluate their Web sites in light of teacher survey results and why they regard professional development support as an integral part of *Internet Content for the Classroom.*
- Teachers, not technology, will shape the future of education, and MarcoPolo aims to provide teachers with the educational tools they will need.

Part 2 Slide 21

marcopolo

http://www.marcopolo-education.org



1. **MarcoPolo**
   MarcoPolo is a consortium of premier national education organizations, state education agencies and the MarcoPolo Education Foundation
   MarcoPolo provides the highest quality Internet content and professional development to teachers and students throughout the United States
   Located at http://www.marcopolo-education.org
2. **About**
   Background on MarcoPolo, including a New to MarcoPolo orientation page and a press room
3. **Progress & Results**
   Web site statistics on the MarcoPolo site
   Data from three MarcoPolo surveys providing educator feedback on MarcoPolo content and professional development
   Research illustrating how MarcoPolo content affects teacher practice and student achievement
4. **Contact Us**
   Receive technical support and information about our content and professional development program
5. **Search MarcoPolo**
   Searches all MarcoPolo Content Partner Sites in a single search
   Produces only educational results hand-catalogued by educators and media specialists/librarians
6. **Our Partners**
   Allows users to access our Content Partner Web sites to find lesson plans, reviewed Web links, student materials and more
7. **Teacher Resources**
   Information on the Content Partners and the criteria used in developing and reviewing educational content
   Access new lessons, the MarcoPolo calendar, featured resources and standards alignment information
   Resources on how to use MarcoPolo and integrate technology into the classroom
8. **Professional Development**
   Information about the MarcoPolo Professional Development program
   The Trainer Resource Center provides MarcoPolo Field Trainers and MarcoPolo Certified Trainers with a range of resources to facilitate MarcoPolo training sessions
   MarcoPolo offers a variety of training sessions for individuals and groups that can be ordered online
9. **State Network**
   MarcoPolo has established partnerships with all 50 states and the District of Columbia
   Access information on MarcoPolo within their states, and when available, find content aligned to state standards
10. **MarcoPolo Features**
    View news about and access highlighted resources from MarcoPolo and its Content Partners
11. **Site Index**
    Navigation help
12. **Glossary**
    Definitions of MarcoPolo terminology
13. **Link to MarcoPolo**
    Add a link to MarcoPolo from your own Web site
14. **Copyright and Terms of Use**
    MarcoPolo Web site user agreement

Start Your Engines

Use this worksheet to compare the MarcoPolo Content Partner Search Engine to a typical Internet search engine such as Yahoo! (www.yahoo.com), Excite (www.excite.com) or AltaVista (www.altavista.com). Test each search engine's ability to find content that fits your curriculum and content that reflects the world outside the classroom. Compare results with others in your group and discuss how you would use both search engines to find content you can use in class.

Road Test No. 1: Search for Resources on a Curricular Topic		
(Example: Shakespeare, Lincoln)	**MarcoPolo Search Engine**	**Typical Search Engine:** _____
1. Your Keyword		
Number of hits		
2. Your Keyword		
Number of hits		
3. Your Keyword		
Number of hits		
How relevant are these resources to teaching and learning?		
How useful is the hit list in helping you decide which resources to explore?		

Road Test No. 2: Search for Resources on a Current Events Topic		
(Example: space mission)	**MarcoPolo Search Engine**	**Typical Search Engine:** _____
1. Your Keyword		
Number of hits		
2. Your Keyword		
Number of hits		
3. Your Keyword		
Number of hits		
How relevant are these resources to teaching and learning?		
How useful is the hit list in helping you decide which resources to explore?		

Part 3: The MarcoPolo Content Partner Web Sites

Time Required: 2.5–3.5 hours

Objectives:
- To explain how each MarcoPolo Content Partner Web site is organized.
- To highlight key features of each Content Partner Web site.
- To explore *Internet Content for the Classroom* available at each Web site.

Handouts:

Summary

This part of the training program provides a guided tour of the MarcoPolo Content Partner Web sites. Participants learn about the content standards adopted at each site, see how each site is organized and how its interactive features work and explore its contents. Finally, participants work in teams to review one Content Partner site, sharing their evaluations with the group. (This part can also be presented through group exploration of each Content Partner Web site, or by having groups of participants present in-depth reports on each site.)

Presentation Options

Part 3 of the training program can be effectively presented in several ways, as summarized in the table below. Choose the option best suited to the learning style and experience level of your group.

Presentation Options		
Guided Tours (2.5 hr.)	Site Explorations (3 hr.)	Web Site Reports (3.5 hr.)
Trainer presents each site as participants follow along. Pace and sequence can be adjusted to suit group interests.	Trainer introduces each site, and then participants briefly explore it on their own and follow up with a group discussion.	Trainer assigns separate teams to investigate each site and prepare a report on its organization and contents.
Participants work in teams to prepare a Web Site Review **(Handout 3-13)** of one site, reporting their impressions, opinions and evaluations to the group.		Participant teams present Web Site Reports **(Handout 3-14)** to the group.

Presentation Options (continued)

- **Guided Tours:** The presentation notes for this section are designed to help you lead your group on a guided tour of each MarcoPolo Content Partner Web site. Key features of each site are explained in the notes and illustrated in the slide presentation located at http://www.marcopolo-education.org/pd/training-kit.aspx or on the Training CD-ROM. In addition, the notes suggest content items to examine in detail at each Web site. Because these guided tours are self-contained, you can easily change the sequence to suit the interests of your group, beginning, for example, with the Content Partner site they are likely to find most appealing. Likewise, although the tours are nearly equal in length, you may find it useful to vary the pace, giving more time to sites and features your group will find most useful. Conclude a Guided Tours presentation by having participants work in teams to prepare a Web Site Review **(Handout 3-13)**, reporting to the group on their personal impressions and opinions of one site.

- **Site Explorations:** Instead of talking your group through each site in a guided tour, consider giving them 10 minutes to explore each site on their own, using the Content Partner Site Overviews **(Handouts 3-1, 3-2, 3-4, 3-5, 3-7, 3-9** and **3-11)** as their guide. Then take 10 minutes for a group discussion of the site, followed by a five-minute wrap-up in which you can call attention to any features of the site they might have overlooked. When all the Content Partner sites have been discussed, conclude by having participants work in teams to prepare a Web Site Review **(Handout 3-13)**, reporting to the group on their personal impressions and opinions of one site.

- **Web Site Reports:** For another alternative to a trainer-led series of tours, you might turn this part of the program into a group-led series of Web site investigations. First, introduce the MarcoPolo Content Partner Web sites, explaining the subject areas they cover and their common characteristics (points 1–3 in the presentation notes). Then divide your group into six teams and have each prepare a Web Site Report **(Handout 3-14)** outlining the organization and contents of one site for group presentation. Allow approximately 30 minutes for teams to prepare their reports and 30 minutes apiece for their presentations. As each team gives its report, distribute copies of the Content Partner Site Overview handouts and use the slide presentation to fill in any important details they might leave out.

Training Tips

- **Read this guide to yourself, not to your group.**
  This training manual provides detailed directions for navigating through the MarcoPolo Content Partner sites and in-depth commentary on the features of each site. In this respect, it can serve as a self-tutorial for teachers who do not have the benefit of a training session. Unfortunately, it can also serve trainers as a script. Your presentation will be far more effective, however, if you read the guide beforehand, mark and modify it to match your style, and then explain the ins and outs of the MarcoPolo Content Partner sites in your own way and in your own words.

- **Tour the sites on your own.**
  It might be possible to lead a tour of the MarcoPolo Content Partner sites with no more preparation than a glance ahead to the next page of this guide. But please don't try it. Tour the sites ahead of time so that you know where you are going and what you will find as you present each site to your group. You may well find that some features of a site can be explained in much simpler terms than those offered here, while others deserve more attention than this guide affords them. Follow your instincts in such cases, not this set of instructions.

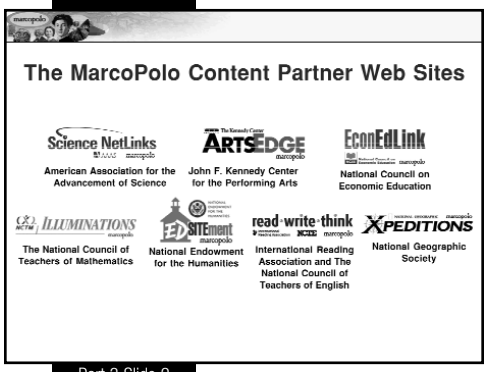
- **Adapt to the training situation.**
  This Teacher Training Kit assumes that all members of your group will have Internet-equipped computers with which they can follow you on each tour. In situations where there is only one Internet-equipped computer, plan to tour the Content Partner sites using a projector. In situations where there is no Internet-equipped computer, plan to rely on the Training CD-ROM for sample resources from each Content Partner Web site. You also may use the presentation slides (located at http://www.marcopolo-education.org/pd/training-kit.aspx and also on the Training CD-ROM).

- **Model classroom management techniques.**
  This part of the program can give participants a firsthand look at some of the classroom management issues they will examine later in Part 5 of the training session. For example, if you present each Content Partner site in a trainer-led tour while the group follows on their own computers, you can be sure that some participants will feel the temptation to surf away while others will fall behind due to operational mishaps of one kind or another. Match those who have trouble keeping up with more skilled partners, explaining how this serves to limit interruptions and creates an ad hoc one-on-one tutorial for the person who needs assistance. Address the temptation to wander by having each member of the group put his or her mouse on top of the monitor for part of the presentation, explaining that this trick is a good way to keep students from straying and, with a walk around the room, a good way to catch those who have already left the fold. Continue this modeling when participants present their Web Site Reviews or Web Site Reports by having each team work with different classroom resources: a computer projector, a computer monitor, multiple computers and no computer.

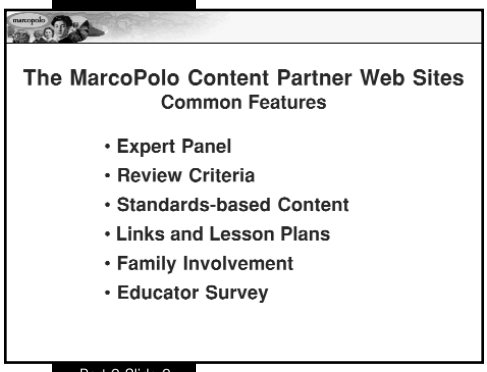
- **Keep it personal.**
  Encourage your group to ask questions throughout this part of the training program, but keep in mind that their most basic questions might go unasked: How is it organized? How does it work? What can it do for me? Structure your presentation to provide answers to these basic questions as you move through each Content Partner site. Try to paint a picture of how each site is laid out and demonstrate features that make it easy to get around. No one likes to feel they must find their way through a site by trial and error. Show participants clearly where to click and where to scroll, how the pop-up menus work and what happens when a QuickTime file loads. What seems obvious to one person can be a total mystery to someone else. Most important, emphasize at every step how these Web sites help teachers—by supporting the curriculum standards that guide their work, by providing them with lesson plans they can really use and above all by steering them to top-quality Web sites that are content-rich, reviewed and selected by experts and safe.

- **Point out the Teacher's Guides.**
  The Elementary and Secondary Teacher's Guides are useful supplements to navigating the MarcoPolo Content Partner sites, which are outlined on pages 8–35 of the Guides.

Part 3 Slide 1



Part 3 Slide 2



Part 3 Slide 3

The MarcoPolo Content Partner Web Sites

1. Explain that in this part of the training program participants will tour each of the MarcoPolo Content Partner Web sites to see how they are organized and sample some of the *Internet Content for the Classroom* they provide. After these tours, participants will work in groups to evaluate one site on their own, using a Web Site Review Worksheet.

2. Remind the group that each MarcoPolo Content Partner site is discipline specific, providing resources within its field of expertise:

   - ARTSEDGE—arts integration (music, visual arts, theater and dance)
   - EconEdLink—economics
   - EDSITEment—humanities (literature and language arts, foreign language, art and culture, history and social studies)
   - Illuminations—mathematics
   - ReadWriteThink—reading and language arts
   - Science NetLinks—science and technology
   - Xpeditions—geography

Common Features

3. Provide a framework for your tour by explaining that all MarcoPolo Content Partner Web sites have several important features in common:

   - All have content reviewed by an **expert panel** of scholars and teachers.
   - All have strict **review criteria** to ensure that sites they recommend are accurate, unbiased, up to date, well organized and appropriate for students.
   - All provide **standards-based content** that supports the K–12 curriculum.
   - All include the kinds of Internet content teachers want most—**student materials, lesson plans and links.** All their links come with a unique "seal of approval," and their lesson plans typically tie in with content on the sites they recommend. Student materials are also often integrated within specific lessons.
   - Finally, all include a link to the **MarcoPolo Online Educator Survey.** Encourage participants to complete this survey when they have become familiar with each Content Partner Web site.

Tour ArtsEdge

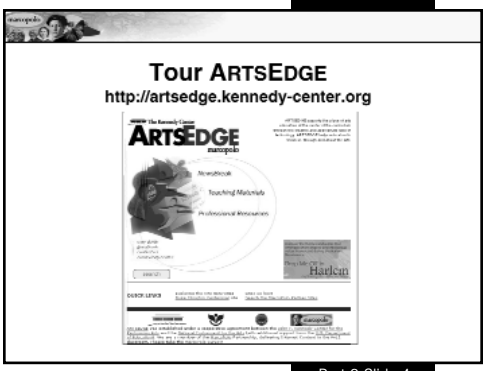
1. Introduce ArtsEdge, the MarcoPolo Content Partner Web site created by the John F. Kennedy Center for the Performing Arts as a result of a cooperative agreement with the National Endowment for the Arts, with additional support from the U.S. Department of Education.

   - Have participants click the ArtsEdge logo on the MarcoPolo homepage to tour this Web site. Distribute copies of the ArtsEdge Content Partner Site Overview **(Handout 3-1)** to help guide participants through their tour.

   - Note that ArtsEdge supports the place of arts education at the center of the curriculum through the creative and appropriate uses of technology. ArtsEdge helps educators teach in, through and about the arts. As such, ArtsEdge is not simply an "arts" site but an "arts integration" site.

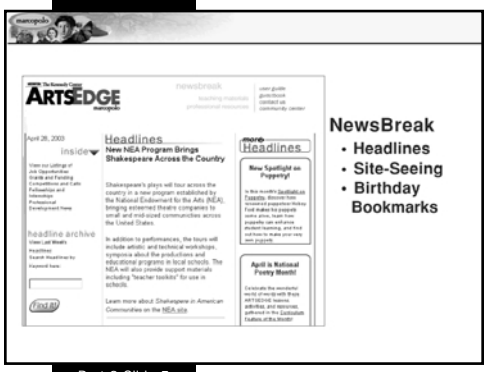
2. Provide some background on the Kennedy Center for the Performing Arts.

   - Since opening in 1971, the Kennedy Center has become America's showplace for the performing arts, providing a national stage for drama, opera, concert music, musical theater, dance and folk arts.
   - In all its programs, the Kennedy Center is guided by a commitment to increasing opportunities for all people to participate in, enjoy and understand the arts.
   - The Kennedy Center's Education Department helps fulfill this commitment through both local and national programming, including performances for schools, professional development opportunities for teachers, lifelong learning classes for adults, school and community outreach programs and ArtsEdge: The National Arts and Education Information Network.



Part 3 Slide 4

◀ **Handout 3-1**

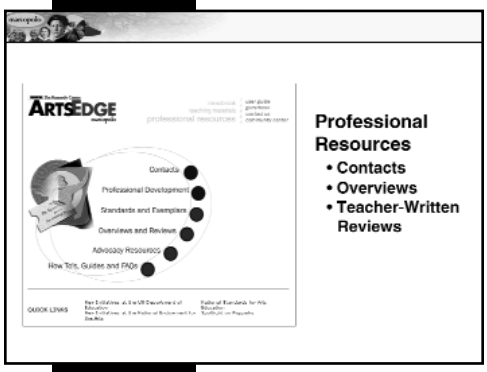


Part 3 Slide 5

NewsBreak

3. Begin your tour at NewsBreak, the online arts and education newsletter for K–12 educators.

- Explain that NewsBreak puts you in touch with the arts and education communities.
- Have participants scroll through **Headlines** or click on **More Headlines** to see weekly updates on arts programs, arts research, educational outreach, funding initiatives, legislation and more—all summarized with links to the full story.
- Point out that educators can also turn to NewsBreak for information about professional development opportunities: online courses, conferences, exhibitions, competitions, grant programs and jobs.
- Have participants scroll down to **Site-Seeing** for a weekly round-up of arts-related resources new to the Internet, including new online exhibitions at major art institution Web sites.
- Have participants scroll down to **Birthday Bookmarks,** a feature designed to help teachers keep their cultural calendars up to date and plan for the coming week. Birthday Bookmarks spotlights important artists and cultural figures who were born each week, providing a capsule biography and links to additional online resources. These are updated almost daily.
- Have participants talk briefly about how a teacher might use the Internet content available at NewsBreak—for example: current event reports on cultural developments, virtual field trips to exhibitions that are in the news or artist-of-the-week activities.



Part 3 Slide 6

Professional Resources

4. Turn next to the Professional Resources section of ARTSEDGE, which offers teachers a library of planning and research information, model programs and curricula, and a host of professional development opportunities.

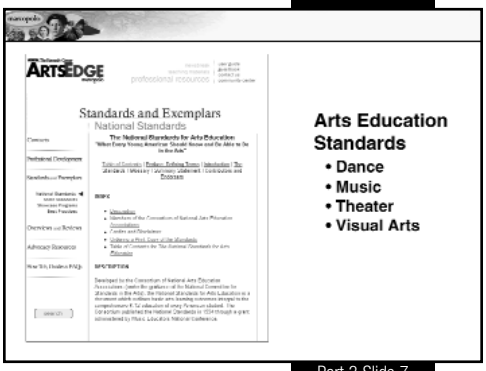
- Point out that educators can turn here for arts and education community **Contacts,** professional development assistance and arts advocacy support.

- This section of ArtsEdge also provides **Overviews** of current arts education research and **Teacher-Written Reviews** of classroom technology, software, curriculum materials and books.

Arts Education Standards

5. Have participants click Standards and Exemplars on the Professional Resources page to access the National Standards for Arts Education, which serve as the foundation for ArtsEdge lesson plans and learning resources.

- Point out that ArtsEdge provides links not only to the National Standards for Arts Education but also to national standards in all subject areas and to arts standards in specific states as well.
- Explain that the National Standards for Arts Education outline what students should know and be able to do in the arts by setting specific content and achievement standards for grades K–4, 5–8 and 9–12 in dance, music, theater and the visual arts.
- Inform participants that the National Standards for Arts Education were developed by a consortium of arts education organizations made up of the American Alliance for Theatre and Education, MENC: The National Association for Music Education, the National Arts Education Association and the National Dance Association.
- If time permits, have participants briefly explore the National Standards for Arts Education to see how they are organized and how they support arts curriculum development with concrete teaching ideas and examples.

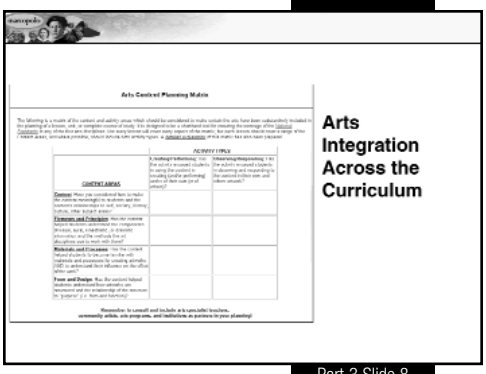


Part 3 Slide 7

Arts Integration Across the Curriculum

6. Click How-To's, Guides and FAQs on the Professional Resources page to sample the curriculum development resources ArtsEdge provides.

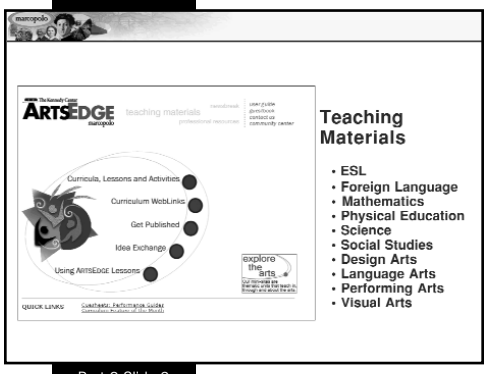
- Have participants click Arts Content Planning Matrix, a tool developed at the Kennedy Center Education Department to help teachers integrate standards-based arts education across the curriculum.



Part 3 Slide 8

- Explain that this matrix provides a framework for developing lesson plans in all subject areas that guide students toward a substantive engagement with the arts, rather than lessons that use the arts to "spice up" a subject by having students draw book report covers or perform in historical pageants.
- Ask participants to consider how tools like this enhance *Internet Content for the Classroom,* providing teachers with something more than "links and lesson plans"—providing them instead with a strategy for reshaping those resources into learning activities that build on educational standards and broaden their students' horizons.

Lesson Plans Across the Curriculum



Part 3 Slide 9

7. To see how this principle of arts integration works in practice, turn next to the "Teaching Materials" section of the site.

- Have participants click Curricula, Lessons and Activities for an index to standards-based lesson plans and study units that integrate all branches of the arts across the curriculum.
- **Note that ArtsEdge provides Internet content for all disciplines, not only for the arts.**
- Point out that there are arts integration lesson plans for ESL, foreign language, mathematics, physical education, science and social studies classes as well as lesson plans in the design arts, language arts, performing arts and visual arts.

8. Have participants click Mathematics to see the range of lessons plans that integrate arts education with math and related subjects.

- Point out the different colored "starbursts" that identify the grade level of each lesson plan, and the bold-type keywords outlining the concepts, skills and topics that each lesson covers.
- Ask participants to imagine a teacher trying to assemble a collection of resources like this one. Emphasize the time saved by comparing these lesson plan links with links that lead only to a Web site's homepage and leave it up to you to find what's inside.

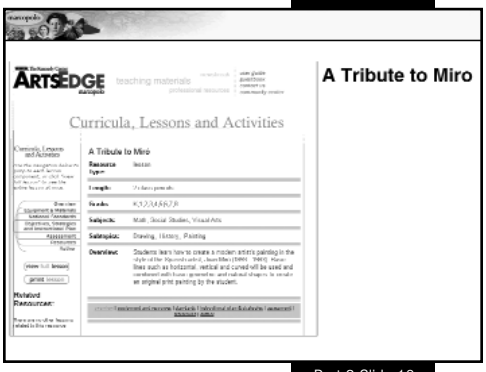
A Tribute to Miro

9. Have participants click A Tribute to Miro in this mathematics list to sample an ArtsEdge lesson plan that integrates arts with basic geometry.

- Scroll down to show participants how the lesson plan is organized for easy implementation. Note that elements of each plan may be found either on the left-hand side of the page or at the bottom of the lesson. (Note: If participants prefer to view the entire lesson at one time, they can use Print This Lesson in the left-hand column to access the full text.)
- Have participants click Equipment & Materials for a listing of materials as well as lesson-specific and general Internet resources that support the lesson.
- Point out the "Standards" section, which lists relevant content standards in all subject areas addressed by the lesson.
- Call attention to the "Objectives, Strategies and Instructional Plan" section, which offers suggestions for contextualizing the students' learning experience and tips for conducting the lesson in class.
- Point out that in the "Objectives, Strategies and Instructional Plan" section some lessons include links to definitions and discussion question answers—which helps teachers adapt the lessons as online student activities.
- Click Assessment to find information about how students will be assessed and to access the "Extensions" section, which offers ways to enhance the lesson and/or ideas for integrating the lesson into additional subject areas.

10. If time permits, have participants examine curriculum resources in other disciplines, including lessons in the arts, noting the range of content they offer.

- Some include classroom-ready activities for students; others provide links to background information at other Web sites; still others offer detailed performance exercises and project ideas.
- In all cases, however, standards are fundamental to ArtsEdge teaching materials, enabling teachers to integrate the arts across the curriculum.



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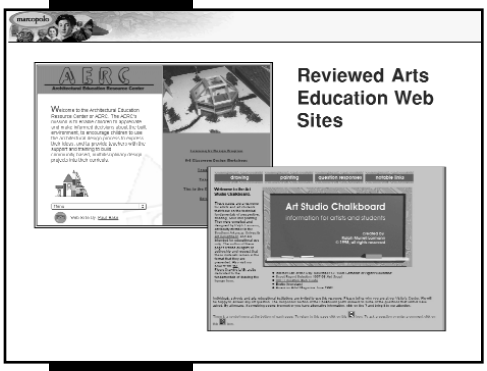


Part 3 Slide 11

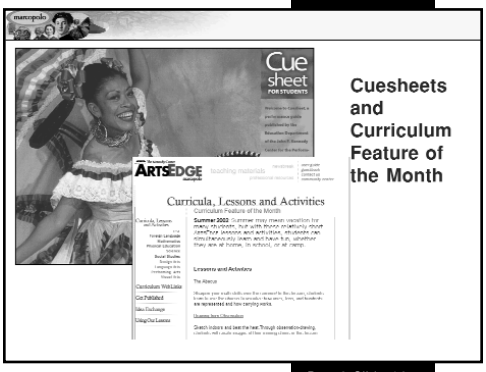
Reviewed Arts Education Web Sites

11. Next, introduce participants to the "Curriculum WebLinks" area of ARTSEDGE, where teachers can find reviewed Web sites for all branches of arts education.

- Have participants click Curriculum WebLinks on the Teaching Materials page to browse a directory that organizes online resources according to the different arts disciplines and areas. Note that links are organized by those that offer lessons and those that serve as primary sources.
- Click Design Arts for recommended Web sites in the field of architecture and design. Have participants visit the Architectural Education Resource Center to see ideas for design projects that can give students new tools for self-expression and strengthen their connections to the community.
- Click Performing Arts for recommended Web sites on music, dance and theater. Have participants visit the *Take Note!* Web site and explore the many resources for teaching about the orchestra through learning about the New York Philharmonic.
- Click Visual Arts for recommended Web sites on the history and techniques of painting and photography. Have participants scroll down to the Primary Source links to find the *Art Studio Chalkboard,* a site that guides students through the fundamentals of perspective, shading and coloring.
- Point out that in most arts disciplines, ARTSEDGE also provides links to the best Internet resource indexes and to organizations that specialize in that field.
- If time permits, have participants explore other disciplines in the "Curriculum WebLinks" area (Science, for example) to see the diversity of resources ARTSEDGE provides.
- Point out that throughout the "Curriculum WebLinks" area, ARTSEDGE includes a "Student Friendly" notice for Web sites that are especially suitable for students to visit on their own—easy to navigate, interesting to explore and designed to help young learners advance at their own pace.

12. Bring participants back to Teaching Materials to point out the ArtsEdge collection of Cuesheets as well as the Curriculum Feature of the Month.

- **Cuesheets** are performing arts study guides published by the Education Department of the John F. Kennedy Center for the Performing Arts and the National Symphony Orchestra (NSO). While they are designed to accompany performances at the Kennedy Center and across the country, they are useful resources containing introductory information and activities appropriate for all children, even without having experienced the performance.
- The **Curriculum Feature of the Month** highlights various topics ranging from Hispanic Heritage Month to Universal Human Rights Month to National Poetry Month. This section also includes a range of online resources and related materials.

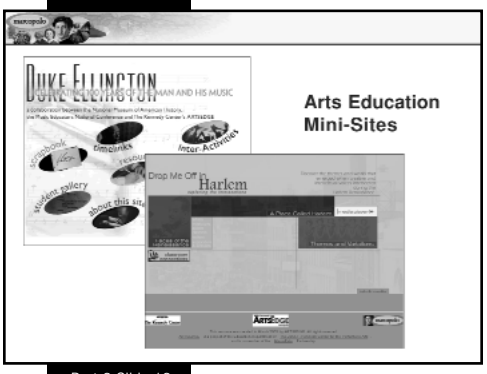


Part 3 Slide 12

Mini-Sites

13. Continue your tour of ArtsEdge with a visit to "Exploring the Arts Mini-Sites," a content area that features mini-sites designed to engage students in online learning. The link is available in the "Quick Links" section at the bottom of the page.

- Explain that this section of the site will grow to include mini-sites devoted to each of the arts—theater, music, dance, the visual arts, design—in all their variety.
- Point out that several of the mini-sites gathered here have been developed in conjunction with special events at the Kennedy Center and offer students a behind-the-scenes look at some of the world's greatest performing artists.



Part 3 Slide 13

14. Click *Duke Ellington Centennial Celebration* to sample an ArtsEdge mini-site.

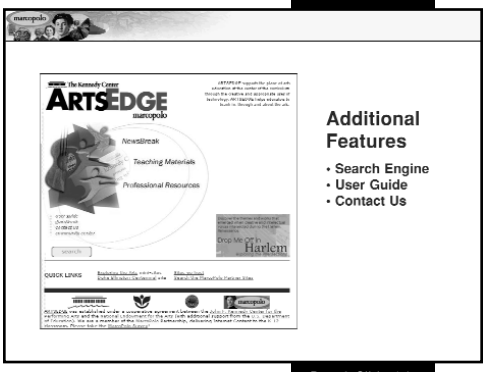
- Explain that the Ellington mini-site was created in collaboration with the Music Educator's National Conference (MENC) and the National Museum of American History as part of the Kennedy Center's year-long celebration of the Ellington centennial in 1999. Have participants briefly explore the site, calling attention to some of its main features.
- Click Inter-Activities to see a complete set of standards-based lesson plans on Ellington's music, produced by ArtsEdge in cooperation with MENC. Click Lesson 1 in this section to see how these lessons incorporate never before digitized archival images of Ellington's scores with audioclips of his performances.
- Click Scrapbook to view a virtual photo album documenting Ellington's life and career, produced by ArtsEdge in cooperation with the Smithsonian Institution's National Museum of American History.
- Click Timelinks to see an interactive timeline designed to give visitors an informed perspective on Ellington's place in history, with links to Web sites that provide background on some of his contemporaries, such as the Wright Brothers, Franklin Roosevelt and Jackie Robinson.
- Point out that this mini-site also includes its own "Resources" section, which lists books and recordings in addition to online resources.
- If time permits, have participants explore the *Drop Me Off in Harlem* mini-site, which is an online exploration of the Harlem Renaissance.
- Talk about how a teacher might use the student-oriented mini-sites for research projects, online activities and collaborative learning.

Additional Features

15. Conclude your tour of ARTSEDGE with a brief description of some additional features of the site.

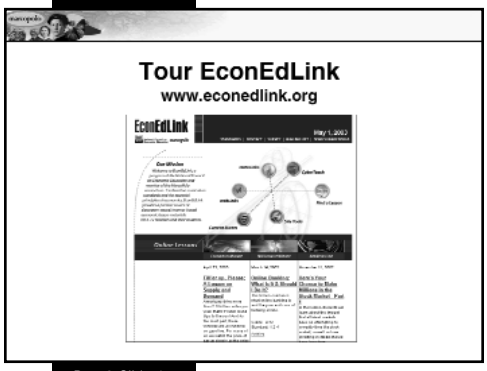
- **MarcoPolo Search Engine:** accessible from the ARTSEDGE homepage. The MarcoPolo Search Engine searches keyword and subject-catalogued records on ARTSEDGE and across all MarcoPolo Content Partner sites.
- **User Guide:** a comprehensive guide to help visitors use ARTSEDGE effectively. Included is information on best use of the site; information on selection, review and submission of resources; and copyright and privacy statements.
- **Contact Us:** pose questions, offer suggestions, or just share your opinion about the site. ARTSEDGE exists for the benefit of teachers, works closely with its Teacher Advisory Council and always responds directly to teachers who contact the site.

16. Provide participants with time to comment on ARTSEDGE before moving on to the next MarcoPolo Content Partner Web site.



Part 3 Slide 14

The MarcoPolo Search Engine is presented in Part 2, page II.9.



Part 3 Slide 15

Handout 3-2 ▶

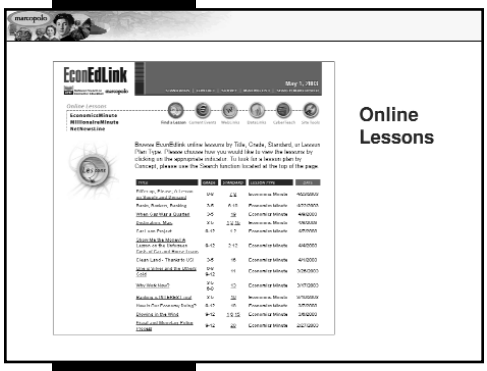
Tour EconEdLink

1. Introduce EconEdLink, the MarcoPolo Content Partner Web site created by the National Council on Economic Education.

- Have participants click the EconEdLink logo on the MarcoPolo homepage to tour the site. Distribute copies of the EconEdLink Content Partner Site Overview **(Handout 3-2)** to help guide participants through their tour.
- Note that EconEdLink features ICFC that keeps pace with real-world economic developments and is organized pragmatically, offering learning resources that help teachers respond to issues as they arise, rather than a topical or standards-based survey of economic theory.

2. Provide some background on the National Council on Economic Education (NCEE).

- NCEE is dedicated to helping students develop economic ways of thinking and problem solving that they can use to become more effective and responsible citizens in a changing global economy.
- Founded in 1949, NCEE coordinates a network of affiliated state councils and over 200 university-based centers that work together to promote, develop and deliver economics education.
- NCEE has become the nation's leading source of K–12 teacher training in economics through its professional development programs and training materials.



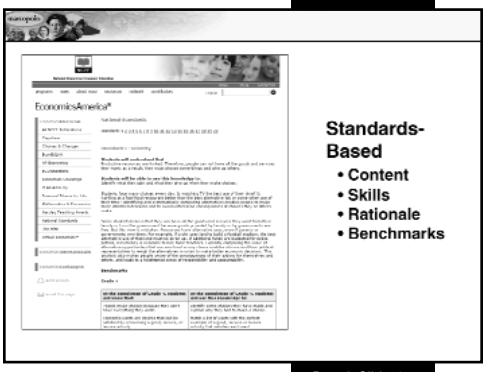
Part 3 Slide 16

Online Lessons

3. For an overview of the Web site's contents, begin your tour by clicking the Find a Lesson button in the middle of the EconEdLink homepage.

- This page provides a complete listing of the economics lessons accessible through EconEdLink and offers a choice of four ways to view the list: organized by standard, organized alphabetically by title, organized by grade level and organized by lesson type.
- EconEdLink provides several types of lessons: EconomicsMinute highlights connections between economics and current events; MillionaireMinute focuses on personal finance; and NetNewsLine

explores the economics behind current trends or areas of topical interest.

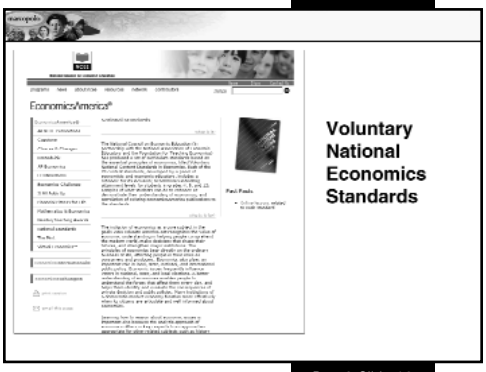


Part 3 Slide 17

Standards-Based

4. Click one of the numbers to see a full description of that standard. Scroll down the page to review the standard's key elements.

   - **"Students will understand that":** A description of what a student should be able to do with knowledge of the standard upon leaving high school.
   - **"Students will be able to use this knowledge to":** Several paragraphs that explain why knowledge of the standard is essential and how it can improve students' lives.
   - **Benchmarks:** Specific achievement goals for grades 4, 8 and 12 that build toward knowledge of the standard through intermediate stages of understanding. Each benchmark consists of a content goal and a corresponding skills goal.



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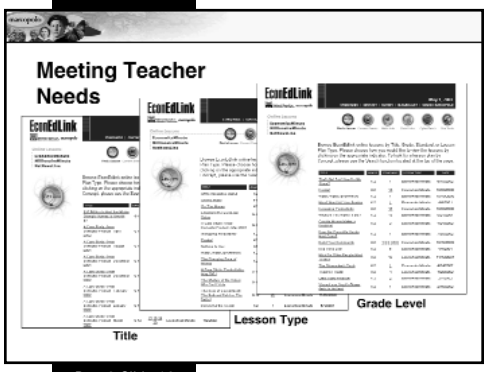
Voluntary National Economics Standards

5. To see a complete listing of the Voluntary National Economics Standards, click National Standards in the left-hand navigation. Scroll to the bottom and click View the Standards.

   - Scroll down the list to view the standards and become familiar with these essential principles upon which the lesson plans available at EconEdLink are based. Distribute copies of the Voluntary National Economics Standards Outline **(Handout 3-3)** included in this manual.
   - Note that these standards are for the most part principles of human behavior, describing economics in terms of individual choice and the actions of groups, institutions and social forces. Framed in these terms, it is easier to see how economics lessons can be integrated not only into social studies but also into the language arts, science, mathematics and arts curricula.

◀ **Handout 3-3**



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Meeting Teacher Needs

6. Return to the Find a Lesson page for another look at the different ways this listing of EconEdLink lesson plans can be viewed.

- **Standard:** Note that lessons that address several standards are listed under each relevant standard in the table. Consider how this view of the Web site's curriculum resources could help a teacher find new ways to address state or local economics standards that are based on the national framework.
- **Lesson Type:** Click Lesson Type to see the lesson plans indexed according to the type of lesson each one is: EconomicsMinute, MillionaireMinute or NetNewsLine.
- **Grade Level:** Click Grade to see the lessons arranged by grade level, providing an easy way for teachers to find content appropriate for their students.
- **Title:** Click Title to see the lessons listed alphabetically.
- **Date:** Click Date to see the lessons listed by date published.

7. Focus for a moment on the Title view, pointing out that it combines several types of very practical information:

- **Grade Level:** Lessons are listed alphabetically within grade level, providing another way for teachers to zero in on those most appropriate for their students.
- **Date:** This view also shows when each lesson was posted on EconEdLink, helping teachers choose those dealing with current issues and alerting them to lessons that might be economically out of date.
- **Lesson Type:** This view identifies where each lesson is located on the Web site, giving teachers an indication of how the lesson is designed and how much class time it will require. EconomicsMinute and MillionaireMinute lessons generally require only one class period, while NetNewsLine lessons can require one or more weeks.
- Teachers can access every EconEdLink lesson plan immediately by clicking its title.

EconomicsMinute

8. To access EconomicsMinute lessons, click the graphic in the middle of the homepage just above the EconomicsMinute text. On subsequent pages, click on EconomicsMinute in the left-hand menu.

- New lessons are posted every week, exploring the economics behind what's happening in the world.
- Their timeliness makes these lessons especially useful in current events discussions.
- Unlike yesterday's news, however, Economics-Minute lessons can always help students understand the economic principles that shape events. Therefore, encourage teachers to explore lessons posted both recently and previously.

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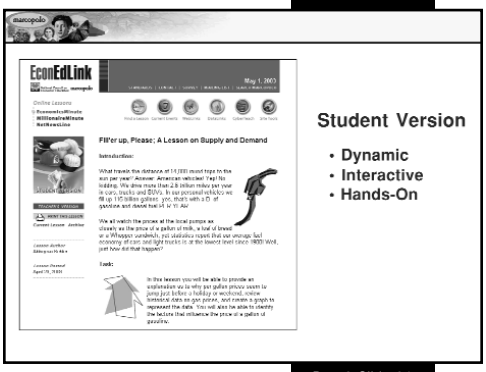
Student Version

9. Click on any EconomicsMinute lesson title to access the lesson.

- Note that the lesson comes in two parts: a series of questions and activities addressed to students and a teacher's version accessible through a link to the left of the lesson introduction.
- Scroll down the student version of the lesson to see how it is presented. The lessons differ depending on topic and grade level, but all share these key characteristics:
  - ➤ **Dynamic:** Each lesson guides students step by step through a process of information gathering and decision making, posing questions that help translate economic principles into critical thinking skills.
  - ➤ **Interactive:** Each lesson integrates links to online resources, taking students to reviewed Web sites that set the economic issue in context and to online sources of up-to-date information, such as newspapers, news channels and government agencies.
  - ➤ **Hands-On:** Each lesson includes projects or activities designed to reinforce the economic concepts students have learned and help them build on these concepts to create new knowledge.



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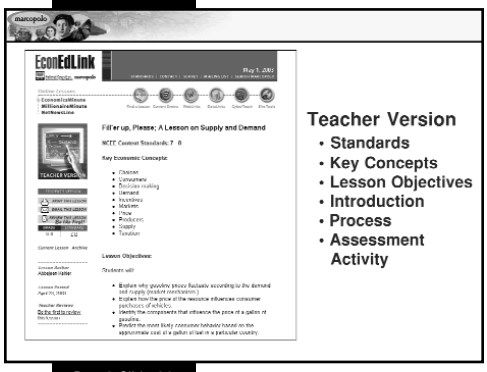
- Note that the lesson is written in a conversational style appropriate to students and could be used as an online student activity in Internet-equipped classrooms or assigned as a family activity for students with Internet access at home.



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Teacher Version

10. Now, click the link in the left navigation bar to see the Teacher's Version of this EconomicsMinute lesson plan. Note these important features found in most EconomicsMinute lessons:

- **Standards:** Links the teacher to full descriptions of the standards upon which the lesson is based.
- **Key Concepts:** Helps the teacher align this lesson with local standards and curriculum objectives in other subjects.
- **Lesson Objectives:** Maps out what students will learn upon completion of the lesson.
- **Introduction:** Many EconomicsMinute lessons provide teachers with a short refresher on relevant economic issues or concepts, making it easier for teachers across the curriculum to integrate economics into their class plans. Guiding questions are also frequently provided in this section, as well as in the Process section described below. These guiding questions may be used by teachers to prepare for and teach the lesson.
- **Process:** Guides the teacher step by step through the lesson, with suggestions for enhancing classroom presentation and ideas for expanding the lesson's scope.
- **Assessment Activity:** Provides suggestions and resources to assess student learning.
- Consider how a teacher might implement an EconomicsMinute lesson in a classroom where both the teacher and students have access to the Internet. Discuss how a separate teacher's version of the lesson can help a teacher coordinate and direct the students' learning experience.
- Consider a teacher whose classroom has no Internet access. Discuss how a teacher could implement the lesson by providing students with its built-in online resources in printed form.

- Note that this kind of adaptability to different classroom situations and teaching needs is a hallmark of *Internet Content for the Classroom.*

MillionaireMinute

11. MillionaireMinute is a collection of economics lessons on finance and financial planning. Each lesson can typically be completed in a single class period.

- To access MillionaireMinute lessons, click the graphic in the middle of the homepage just above the MillionaireMinute text. On subsequent pages, click on Millionaire in the left-hand menu.
- Once on the MillionaireMinute page, click Buying v. Renting to see how this lesson appeals directly to students' experiences and goals to address and teach financial planning.
- Point out that, like EconomicsMinute lessons, these lessons are aligned to NCEE content standards.

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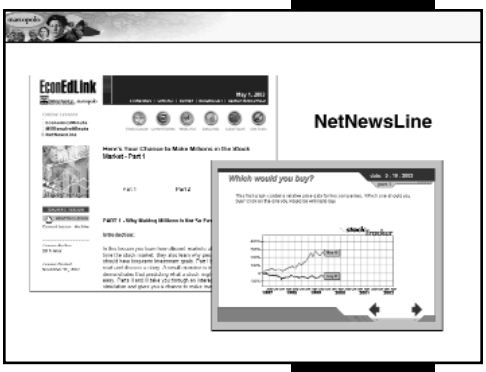
NetNewsLine

12. In addition to EconomicsMinute and MillionaireMinute lessons, EconEdLink also provides NetNewsLine lesson plans, which offer a more in-depth look at recent economic issues and trends and which are designed to be used over several class periods.

- To access NetNewsLine lessons, click the graphic in the middle of the homepage just above the NetNewsLine text. On subsequent pages, click on NetNewsLine in the left-hand menu.
- Note the variety of lesson plans available, ranging from financial issues (interest rates, income) to topics that have sparked widespread debate (sports salaries, home prices).
- Each NetNewsLine lesson is designed as a multi-part online learning experience for students. The lesson guides students step by step through a process of exploration, invention and application that might lead to dozens of Web sites. Along the way students read background articles on economic concepts, analyze data collected by government agencies, weigh the opinions of economics commentators and face decisions like those arising from the lesson's underlying issue in real life.



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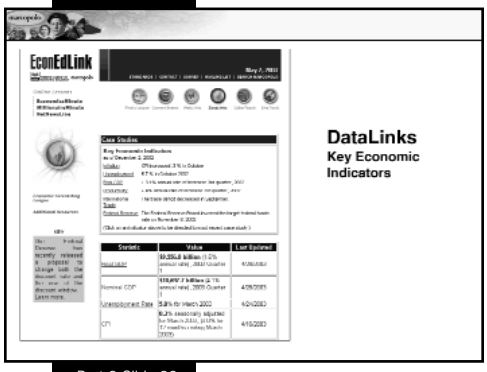
- Click on Here's Your Chance to Make Millions to see how a NetNewsLine lesson plan is organized. Take participants through Part 1, Part 2 and Part 3. In this lesson, students learn how efficient markets affect investors' efforts to time the stock market; they also learn why people who invest in stocks should have long-term investment plans. Part 1 uses an exercise that illustrates how hard it is to predict a stock's performance. Meanwhile, Parts 2 and 3 take students through an interactive historical simulation and give them a chance to make investment decisions.

Part 3 Slide 25

WebLinks

13. In addition to timely, standards-based lesson plans, EconEdLink also provides teachers with a list of the best economics education Web sites.

- Click the WebLinks button in the navigation menu in the middle of the homepage or in the button menu at the top of every subsequent page.
- Note that each site has been reviewed and selected by the EconEdLink editorial board.
- Scroll down the list of sites to note how these resources meet the needs of economics teachers rather than economists, business people or financial specialists. Many offer curricular materials, activities for students at all grade levels and economic data in easy-to-use formats.



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DataLinks

14. Finally, click the DataLinks button to access the latest information on key economic indicators.

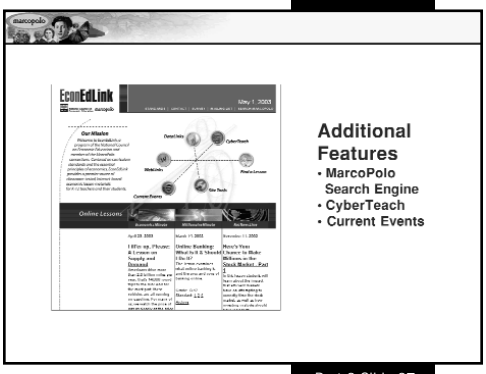
- Click the DataLinks button in the navigation menu in the middle of the homepage or in the button menu at the top of every subsequent page.
- Each indicator is linked to a background section that provides links to further information: the data behind the indicator, charts that place the indicator in context and an explanation of how the indicator is calculated.

Additional Features

15. Conclude your tour of EconEdLink with a brief description of some additional features of the site.

- **MarcoPolo Search Engine:** accessible from the top navigation bar of EconEdLink. The MarcoPolo Search Engine allows users to search EconEdLink and across all MarcoPolo Content Partner sites in a single search.
- **CyberTeach:** a comprehensive guide to teaching economics with the Internet. The guide includes a template for designing effective lesson plans, sample lesson plans and links to other Web sites with helpful advice.
- **Current Events:** provides access to the latest economics news and information.

16. Provide participants time to comment on EconEdLink before moving on to the next MarcoPolo Content Partner Web site.



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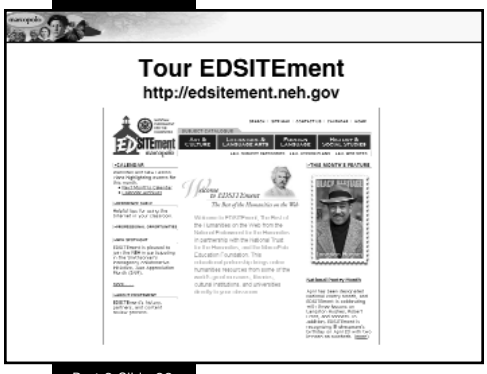
The MarcoPolo Search Engine is presented in Part 2, page II.9.



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Handout 3-4 ▶

Tour EDSITEment

1. Introduce EDSITEment, the MarcoPolo Content Partner Web site created by the National Endowment for the Humanities.
   - Have participants click the EDSITEment logo on the MarcoPolo homepage to tour the site. Distribute copies of the EDSITEment Content Partner Site Overview **(Handout 3-4)** to help guide participants through their tour.
   - Note that because EDSITEment provides content across many disciplines, it is organized by subject area rather than standards.

2. Provide some background on the National Endowment for the Humanities (NEH).
   - The NEH is an independent federal agency established in 1965 to promote knowledge of human history, thought and culture.
   - Through grants and other programs, the NEH supports scholarship in all areas of the humanities and promotes innovation in making our cultural heritage a vital part of intellectual life today.
   - Through its Division of Education Programs, NEH provides opportunities for classroom teachers to enrich their knowledge of humanities topics through summer seminars and institutes, and through other group-supported initiatives for educators.

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Subject Catalogue

3. EDSITEment offers teachers a rigorously reviewed catalogue of top humanities Web sites from around the world and a constantly growing library of classroom-ready lesson plans. (Note: The Subject Catalogue houses all EDSITEment lesson plans and reviewed Web sites. Lesson plans also are accessible via the All Lesson Plans link, and Web sites are accessible via the All Websites link as well.)
   - Explain that EDSITEment's resources are organized in a Subject Catalogue that appears on all pages. Users may click the Subject Catalogue tab for a quick, browsable view of all subcategories covered on the site, or they may go directly to one of the four main categories by clicking a color-coded square.

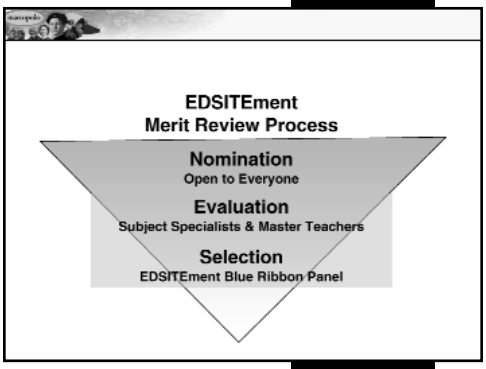
- Have participants click the History and Social Studies tab of the Subject Catalogue to see lesson plans and Web sites on general history.
- Users may select either the Lesson Plans or Web Sites tab at the top of the Category page to access resources.
- Educators may use the Subject Navigator and Grade Level drop-down menus to access lesson plans within subcategories easily. Some subcategories, for example, are World History—Latin America and U.S. History—the Great Depression.
- Explain that Web sites and lesson plans with content relevant to several subjects are listed in all applicable subject areas.

NEH Review Process

4. Emphasize that EDSITEment helps teachers screen the myriad of humanities Web sites by selecting only those sites that meet rigorous evaluation criteria.

EDSITEment Web sites are selected through the NEH panel review process, as recognized by the federal government:

- **Nomination:** Web sites are nominated for listing on EDSITEment by a broad cross-section of the educational community that includes everyone from classroom teachers to the directors of international institutions. Anyone can recommend a site at anytime through this open nomination process via the Contact Us link on the EDSITEment homepage.
- **Evaluation:** All nominations are then evaluated not only by scholars in humanities specialities, who can determine whether the content is accurate, unbiased and up to date, but also by master teachers, who ensure that the content is relevant to the K–12 curriculum and appropriate for use in class.
- **Selection:** Finally, the recommended Web sites that meet EDSITEment standards are submitted to a Blue Ribbon Panel of national educational leaders who typically winnow the field again, giving their "seal of approval" only to the best of the best.



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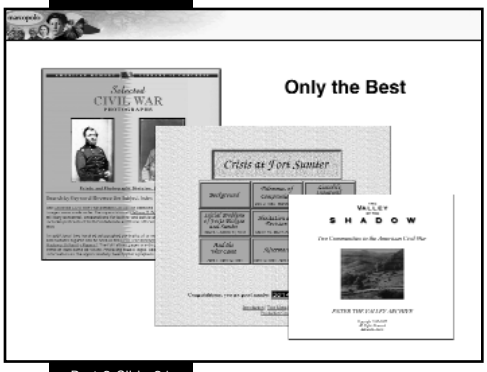

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Only the Best

5. Demonstrate the benefits of this rigorous review process by having participants imagine themselves as high school history teachers looking for resources on the Civil War.

- Remind participants that, ordinarily, this could mean wading through sites created to sell Civil War memorabilia or to recruit Civil War re-enactors, not to mention the hundreds of hobbyist sites devoted exclusively to a particular battle, regiment or commander.
- At EDSITEment, a teacher can be sure to find only the best sites on the Civil War—those with *Internet Content for the Classroom*.

Take participants through the following navigation process.

- First, click the History and Social Studies tab on the Subject Catalogue. Next, select the Web Sites tab in the Subject Navigator and use the drop-down menu to locate U.S. History—Civil War and Reconstruction. Finally, click Display to view relevant Web sites.
- Have participants scroll down the U.S. History—Civil War list and click *American Memory Project.* Guide them through this site to the Civil War Photographs collection. Click Collection Finds at the *American Memory* homepage, then click History in the "Broad Topics" section, and finally select Civil War~Brady Studio and Others ~Photographs~1861-1865. Here a teacher can find hundreds of the most famous images of the war, all available for printing out. Here is content to bring students face to face with the war and its emotional impact on our national heritage.
- Return to the list of Web sites on the EDSITEment site, and scroll down to Crisis at Fort Sumter. Explain that here students can match their decision-making skills with those of Abraham Lincoln as they move interactively through the events that led to the Civil War.
- Finally, have participants scroll further down the list of Civil War Web sites and click Valley of the Shadow.

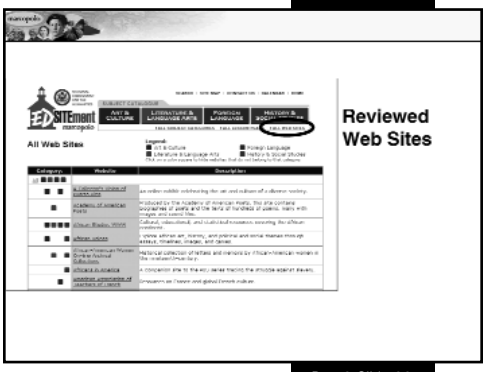
Explain that this Web site encapsulates the Civil War era by documenting life in two small towns that stood on opposite sides during the conflict. Here teachers and students can find maps, census records, newspaper reports and thousands of other primary historical documents that re-create the past.

- If time permits, have participants briefly explore these three Web sites and discuss some ways a high school history teacher might use this rich content in class.

Reviewed Web Sites

6. Return to the homepage to illustrate that EDSITEment provides similar in-depth content for all parts of the humanities curriculum.

- Have participants use the **All Web Sites** link to access the reviewed and selected Web sites listed below, pointing to this section as another entry point to EDSITEment's Web sites.
- Point out that many of these sites are like foundation stones, providing broad, solid support for teaching core areas of the humanities curriculum.
- **African Voices:** Click the blue Art & Culture square in the "Legend" section, and scroll down to *African Voices.* This site from the Smithsonian Museum of Natural History helps students explore African art, history and political and social themes through essays, timelines, images and games.
- **Mr. William Shakespeare and the Internet:** Select the green Literature & Language Arts square, and scroll down to *Mr. William Shakespeare and the Internet.* This site serves as a guide to the bewildering number of sites devoted to Shakespeare, providing literature teachers with an easy way to find almost anything they can imagine, whether it's an Elizabethan-era picture of the Globe theater or a clip of Leonardo DiCaprio playing Romeo as a modern-day gang member.
- **French Ministry of Culture:** Select the red Foreign Language square, and scroll down to French Ministry of Culture, which offers French teachers unparalleled resources in the French language and gives European history teachers access to the same resources in English.



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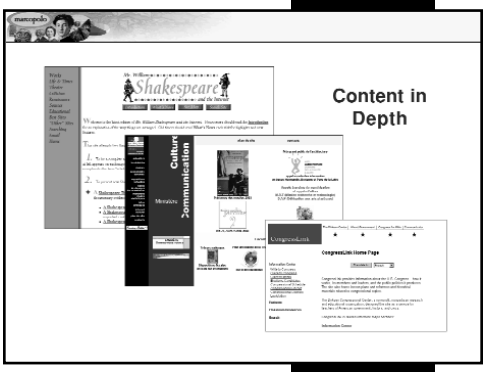

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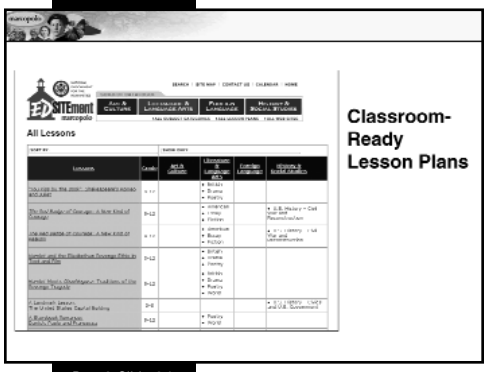
- **CongressLink:** Click the brown History & Social Studies square to find *CongressLink.* This site offers civics teachers a wide array of resources on the Constitution, the structure of the American government, the legislative process and even issues currently under debate in Congress.
- Invite participants to scan the EDSITEment Web Sites section and point out sites that seem to promise a similarly comprehensive set of resources for teaching core subject areas.

Classroom-Ready Lesson Plans



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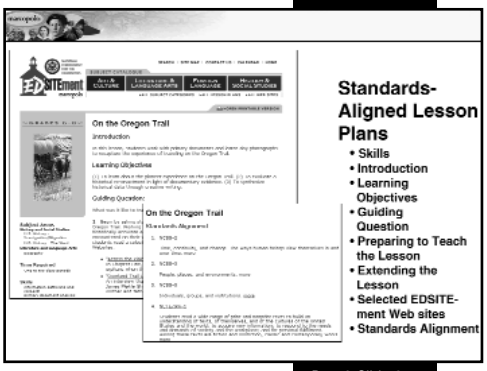
7. Turn next to the lesson plans provided on EDSITEment by clicking All Lesson Plans from the homepage. Point out that this is another way to access lesson plans on EDSITEment.

- On the Lesson Index page, under Show Only, have participants click History & Social Studies to show only this category, and scroll down to find the lesson plan titled On This Day with Lewis and Clark. Note the subcategories covered by this lesson.
- Scroll through this lesson plan to show participants how it is organized for easy implementation, pointing out the **Learning Objectives** and **Guiding Question.**
- Point out the Subject Areas and the **Skills** section at the left. The "Skills" section is designed to help teachers align the lesson with state and local standards that set out performance goals.
- Point out the Selected EDSITEment Web Sites and other resources listed at the bottom of the lesson. The list includes different Web sites that have provided content for the lesson plan and that can be found throughout the lesson. Explain that EDSITEment strives to produce lesson plans that draw on resources from several sites, giving teachers and students the benefit of multiple perspectives and offering a model for reshaping Internet content to meet a teacher's own classroom needs.
- Review the step-by-step directions for presenting the lesson, noting that links to primary documents, images and background information are all built into the plan, giving teachers and students easy access to the resources they need.

- Point to the **Extending the Lesson** section, which suggests opportunities for further exploration using EDSITEment resources, giving teachers a starting point for creating Internet-based lessons on their own. Mention that additional resources are used in the lesson plans.
- Scroll down the lesson and click the *Standards Alignment* link. Here you will find a list of relevant content standards in a variety of disciplines. Also included are links to the full text of each standards document, making it easier for teachers to correlate state and local standards to these national frameworks.
- Show participants that the lesson includes an Open Printable Version tab, enabling teachers to print a hard copy of each classroom-ready lesson plan, and a Send Us Feedback About This Lesson link in the left sidebar of each lesson.



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Calendar

8. The monthly EDSITEment Calendar showcases timely lesson plans and reviewed sites.

- Click the current Calendar, and point out several of the featured resources on any given day.
- Mention that Next Month's Calendar is available for planning purposes.
- Point out the Calendar Archives.
- Finally, mention that there is a Printer Friendly Version of the EDSITEment Calendar.

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This Month's Feature

9. This Month's Feature calls attention to lesson plans and Web sites of topical interest.

- Be sure to click This Month's Feature to access all featured resources.
- Point out the Featured Lessons and Featured Web Sites in the left-hand column of the full feature page.
- Show participants where teachers may access the Monthly Feature Archives at the left. All featured resources are catalogued in the MarcoPolo Search Engine and housed at EDSITEment.

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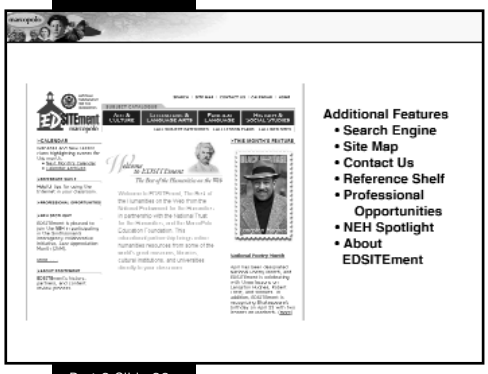

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The MarcoPolo Search Engine is presented in Part 2, page II.9.

- Past monthly topics include Asian Pacific Heritage Month, Women's History Month, African-American History Month and National Poetry Month.

Additional Features

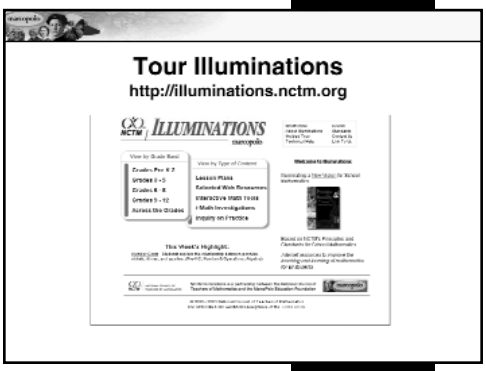
10. Conclude your tour with a brief description of some additional features of the site.

- **MarcoPolo Search Engine:** accessible from all EDSITEment pages. The MarcoPolo Search Engine searches EDSITEment and all MarcoPolo Content Partner sites in a single search.
- **Site Map:** gives a quick view of the site's resources.
- **Contact Us:** enables users to provide feedback.
- **Reference Shelf:** links to EDSITEment's guide to using the Internet effectively in the humanities curriculum, with tips for productive browsing, a Web site evaluation checklist, citation standards and links to humanities standards Web sites.
- **Professional Opportunities:** information on grants, stipends and professional development opportunities for teachers and schools.
- **NEH Spotlight:** showcases relevant NEH projects.
- **About EDSITEment:** provides background on the Web site and its partners, a description of EDSITEment's review process and Web site selection criteria.

11. Provide participants with time to comment on EDSITEment before moving on to the next MarcoPolo Content Partner Web site.

Tour Illuminations

1. Introduce Illuminations, the MarcoPolo Content Partner Web site created by The National Council of Teachers of Mathematics.
   - Click the Illuminations logo on the MarcoPolo homepage to tour the site. Distribute copies of the Illuminations Content Partner Site Overview **(Handout 3-5)** to help guide participants through their tour.
   - Explain that the site is called "Illuminations" because it is designed to illuminate mathematics standards with examples that show how they can be applied in the classroom.



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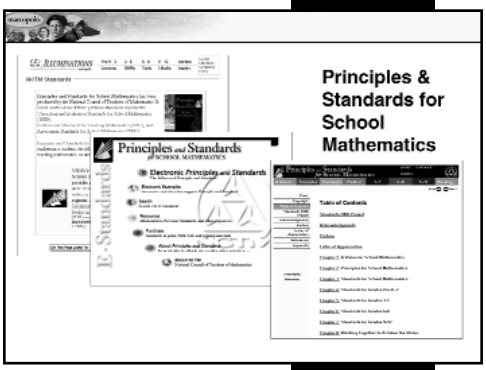
◀ **Handout 3-5**

2. Provide some background on The National Council of Teachers of Mathematics (NCTM).
   - Founded in 1920, NCTM is the world's largest mathematics association and the primary professional organization for K–12 mathematics teachers in the United States.
   - NCTM works to ensure that all students receive a mathematics education of the highest quality and that all mathematics teachers have opportunities for professional growth.
   - NCTM is sometimes credited with launching the educational standards movement with *Curriculum and Evaluation Standards for School Mathematics.* This 1989 publication emphasized the goal of "mathematical power" for all students and recommended appropriate use of calculators and computers throughout the curriculum.
   - Today NCTM remains at the vanguard of the standards movement with *Principles and Standards for School Mathematics,* an updated curriculum guideline that incorporates new research into how students learn mathematics and new ideas about teaching mathematics with computers.

Principles and Standards for School Mathematics

3. Explain that Illuminations is based on the updated NCTM standards and is linked to a partner NCTM Web site that contains the complete text of *Principles and Standards for School Mathematics.*



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Handout 3-6 ▶

- Show participants how to access this electronic document by clicking the Standards button on the Illuminations homepage and then clicking Principles and Standards for School Mathematics.
- Provide an overview of the document by referring to the Principles and Standards for School Mathematics Outline **(Handout 3-6)**.
- Point out that in its new curriculum guidelines NCTM identifies six principles that are fundamental to improving mathematics education and 10 standards that provide a common framework for mathematics instruction from preschool through grade 12.
- Note that the first five standards in this framework describe the mathematical content that all students should learn, while the second five describe the mathematical processes through which they should acquire and use this mathematical knowledge.

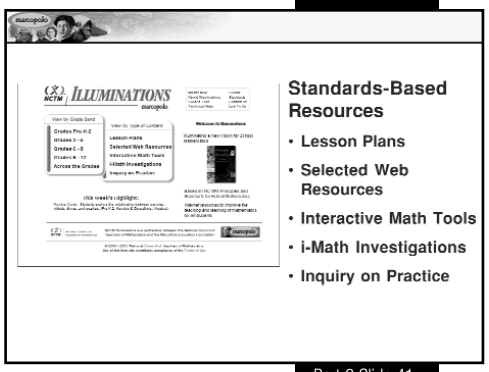
4. If time permits, guide participants through the electronic version of *Principles and Standards for School Mathematics.*

- Show them how each standard is broken down into specific expectations for each grade level, with teacher-tested strategies for helping students achieve these expectations provided in a discussion section.
- Point out that the electronic version of the document also includes "electronic examples" unavailable in the printed edition. These are videos, animations and other online resources designed to illuminate the new standards, much like the resources developed for the Illuminations Web site itself.
- Note that teachers can search this electronic version of the new NCTM standards using keywords, a feature that makes it possible to seek new ideas for teaching almost any mathematics topic.

Standards-Based Resources

5. Return to the Illuminations homepage to see how these updated standards combine with *Internet Content for the Classroom* to add a new dimension to teaching and learning mathematics.

- Point out that Illuminations offers five different types of Internet content:
  - ➤ **Lesson Plans:** A growing library of standards-based lessons that integrate Internet resources into the classroom learning experience.
  - ➤ **Selected Web Resources:** A listing of the Internet's best mathematics Web sites and specific lesson plans, activities and other targeted resources, reviewed and selected by the Illuminations panel of expert mathematics educators.
  - ➤ **Interactive Math Tools:** Java applets that can be used to explore math and to create interactive lessons.
  - ➤ **i-Math Investigations:** Here the "i" stands for "interactive Internet investigations that illuminate the NCTM Standards." These are standards-based multimedia tools and activities designed to light up a topic by engaging students in hands-on discovery. The i-Math Investigations section also includes e-examples from NCTM Principles and Standards.
  - ➤ **Inquiry on Practice:** Video vignettes, interactive math reference material, research reports and articles designed to help teachers develop more effective classroom strategies. Using video vignettes, these activities explore what happens when students learn a new mathematical concept.
- Note that within each content section, resources are organized according to grade level, making it easy for teachers to find precisely what they need. In addition, Illuminations provides a grade band index that pulls together all the resources available for each grade level.
- Explain that Illuminations is constantly expanding the resources available in each content area, adding new activities and even new sections or extensions to activities already online.



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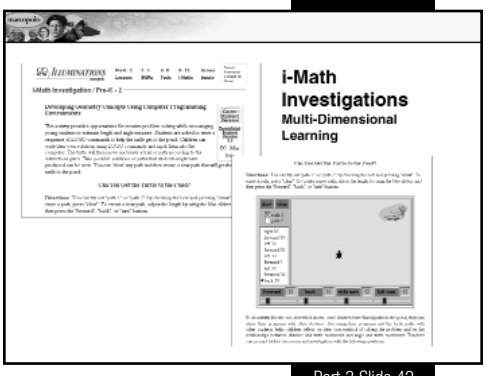
i-Math Investigations

6. Have participants click i-Math Investigations to begin exploring the resources teachers can find at Illuminations.



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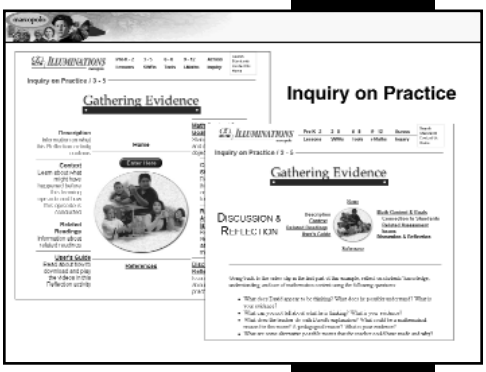
For more information on bookmarking, see the Glossary of Internet Terms, page VII.9.

- Call attention to the Student i-Maths link near the top of this page. Have participants click the link to see a color-coded index to student versions of the site's growing collection of i-Math Investigations.
- Note that teachers can bookmark this index to give their students quick access to these online learning activities.
- Note, too, that this section includes e-Math Investigations, which are selected interactive e-examples from the electronic version of the Principles and Standards document.
- Return to the main i-Math Investigations page and have participants click the icon for the investigation called Developing Geometry Concepts Using Computer Programming Environments, which is designed for students in preschool through grade 2.
- Have participants experiment with this online activity, which challenges students to program a turtle's movements to a pond by setting the direction and distance for each stage of its journey as well as the angle at which it turns.
- Discuss briefly how this activity, though focused on the geometry standard in the NCTM framework (Standard 3), also supports learning in several other standards areas: Number and Operation (Standard 1), Measurement (Standard 4), Problem Solving (Standard 6) and Communication (Standard 8).
- Point out that the investigation has been framed in an open way that promotes multidimensional learning—students use critical thinking and decision-making skills to figure out the activity, and they are encouraged to try different ideas for taking the turtle to the pond rather than asked to find "the answer."
- Note how the Questions for Students that follow the activity complement its open design by drawing students toward conclusions requiring computation and mathematical reasoning.
- Note also the Reflection Questions for Teachers included as part of the activity. Ask participants how these prompts work to further illuminate the standards underlying this learning experience.

Inquiry on Practice

7. Follow up on this discussion by clicking Inquiry on Practice in the Illuminations navigation bar to look at the Inquiry on Practice area of the site.

   - Click the icon for Gathering Evidence About Students' Understanding of Volume, a reflection activity for grades 3–5 that examines how students learn the concept of volume, in order to help teachers develop more effective strategies for teaching this concept and for assessing how well their students understand it.
   - Have participants play the two video vignettes that make up this activity (or read the transcripts, if that is more practical) and review the questions that follow.
   - Point out that content like this is rare, and it provides a powerful professional development tool. Ask participants how often they have seen students caught in the act of learning like this. Note that it is often not possible to observe students in this way even while you are teaching them. Discuss what one can learn about teaching mathematics from such a close-up view.
   - Note the structure of the activity. The Reflection Questions are designed to prompt a range of very pragmatic responses to the situation portrayed in the video, and similar questions are raised in the Related Assessment Issues and Discussion & Reflection sections of the activity. Other sections, however, balance this concentration on classroom practice by calling attention to the underlying curricular framework. Discuss how this combination of practice with theory serves to broaden the scope of the activity.
   - Conclude by talking briefly about the assessment model offered by the activity. Compare it with an assessment model based only on correct facts and procedures, and have participants consider the relationship between this assessment model and the open-ended design of the i-Math Investigation you examined.



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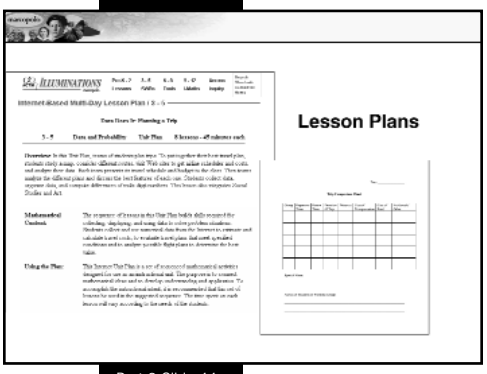

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Lesson Plans

8. Click Data Does It: Planning a Trip, a unit plan for grades 3–5 in which students put together their best travel plan by studying maps, considering different routes, visiting Web sites to get airline schedules and costs and analyzing data. In this unit plan, each team presents its travel schedule and budget to the class. Then teams analyze the different plans and discuss the best features of each one. Throughout the process, students collect data, organize data and compute differences of multi-digit numbers.

- Scroll down the page and show participants the type of information that is provided in the overview section. Here they can get a quick overview as to what mathematical concepts and standards are addressed by the plan, what Web sites are referenced and what materials are required for conducting the lessons in this unit.
- Below this unit plan introduction is a list of the eight lesson plans included in the unit. Click on the first of these lesson plans, Planning a Class Field Trip, to see how each lesson plan is structured.
- Note that the Lesson Objectives are clearly stated at the top of the lesson plan.
- Lesson Description includes a step-by-step approach for teaching the lesson, including specific questions to ask students and links to Internet-based resources to visit. Note also that more specific Guiding Questions appear below the Lesson Description. These guiding questions help students focus on the mathematics and help the teacher understand the students' level of knowledge and skill with the mathematical concepts of this lesson.
- An Assessment section is also provided to help teachers monitor student learning, to adjust instruction and to plan future lessons for the class. Note that specific Teacher Reflection Questions are provided to aid the teacher in this regard, and to prompt deeper and more focused thinking about how to improve teaching and learning.

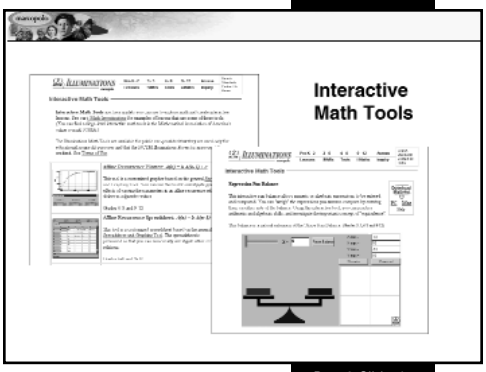
- Now scroll to the bottom of the page and show participants the Student Recording Sheets that can be downloaded as Microsoft® Word® documents or PDFs, thus enabling them to be filled out electronically or printed out and distributed as handouts. It should also be noted that this series of recording sheets includes not only student handouts but also teacher assessment resources that help the teacher gauge student progress.

9. If time permits, have participants quickly examine several other Internet-based Lesson Plans at Illuminations to note the many different kinds of Internet content they use—picture galleries, videoclips, online spreadsheets, interactive graphs, etc.

Interactive Math Tools

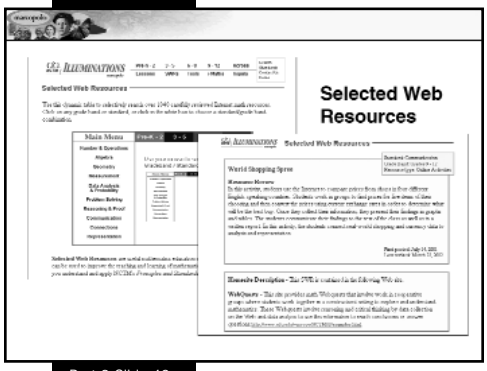
10. Next go to the top of the page and click on Tools from the navigation menu; this will take you to the Interactive Math Tools page. These are Java applets you can use to explore math and create interactive lessons.

- Scroll down and click on the Shape Pan Balance. Point out that this double pan balance provides an interesting environment in which to consider the concept of "equivalence." The weight of the objects can be specified and fixed, or one has the option to change the weights.
- Point out that the Shape Pan Balance can be used on its own or as part of a larger i-Math Investigation created by NCTM, located at http://illuminations.nctm.org/imath/across/balance/index.html. This is true of many of the tools found in this section.
- If time permits, have participants explore some of the other Interactive Math Tools available on Illuminations. For example, they might explore one of the Interactive Geometry Dictionary tools (Lines or Areas) or one of the arithmetic games (Factor, Product or Fraction); or learn about proportions while playing an electronic pool game.



Part 3 Slide 45

The MarcoPolo Search Engine is presented in Part 2, page II.9.



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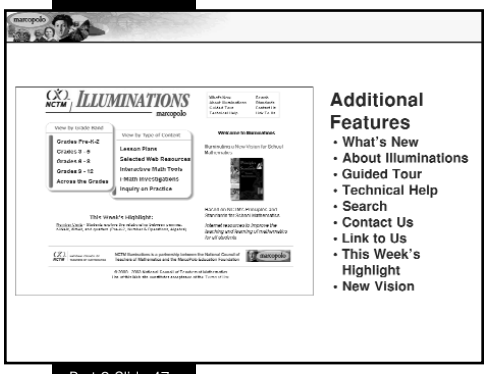
Selected Web Resources

11. Complete this tour of the Illuminations content areas by clicking Selected Web Resources in the navigation bar to see the range of recommended mathematics Web sites.

- Explain to participants that they can search for Web sites in a variety of ways using the Selected Web Resources matrix. They can click directly on a grade or standard area to browse all Web sites in that grade or standard area. Or they can click within the matrix itself to choose a grade and standard simultaneously; for instance, one can browse just geometry sites for grades 3–5. Ask participants to choose this option now.
- On the page following, show participants that they can go to an Illuminations review of the Selected Web Resource or directly to the resource itself.
- Point out that these links bring educators to specific lesson plans, activities and other targeted resources found on the reviewed Web sites.
- If time permits, have participants explore some of these selected sites and resources.



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Additional Features

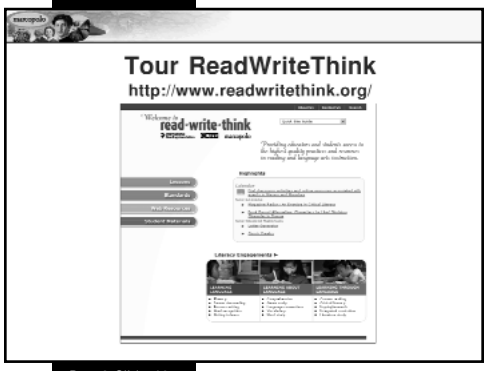
12. Close your tour of Illuminations with a brief description of some additional features of the site.

- **What's New:** updates on recent developments at Illuminations.
- **About Illuminations:** a statement of goals for the Illuminations project and background on the Illuminations team.
- **Guided Tour:** an eight-minute, interactive, multimedia tour that introduces users to all the main features of the site.
- **Technical Help:** includes help on topics such as Internet browsers and plug-ins so that educators can use the site most effectively.

- **Search:** accessible from the Illuminations homepage, Search allows educators to conduct a search on Illuminations and NCTM or a search across all MarcoPolo Content Partner sites, including Illuminations, using the MarcoPolo Search Engine link.
- **Contact Us/Contribute to This Site:** ask a question, send a message or suggest a new activity idea.
- **Link to Us:** link to Illuminations from your Web site.
- **This Week's Highlight:** features an exciting mathematics resource on Illuminations.
- **New Vision:** read a brief overview of NCTM's Principles and Standards or watch an online video overview.

13. Provide participants with time to comment on Illuminations before moving on to the next MarcoPolo Content Partner site.

Tour ReadWriteThink



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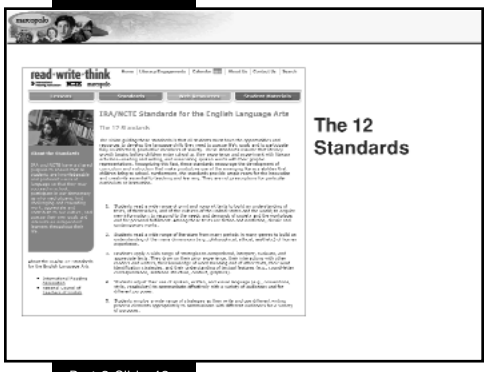
Handout 3-7 ▶

1. Introduce ReadWriteThink (RWT), the MarcoPolo Content Partner Web site created by the International Reading Association and The National Council of Teachers of English.

Have participants click the RWT logo on the MarcoPolo homepage to tour the site. Distribute copies of the ReadWriteThink Content Partner Site Overview **(Handout 3-7)** to help guide participants through their tour.

2. Provide some background content on the International Reading Association (IRA) and The National Council of Teachers of English (NCTE).

- The **International Reading Association** was founded in 1956 when the International Council for the Improvement of Reading Instruction (ICIRI) and the National Association for Remedial Teaching (NART) merged to form one organization. Since its formation in 1956, IRA has grown to include a network of 300,000 educators in 99 countries who support a thriving professional program of publications, meetings and advocacy and outreach efforts locally, nationally and internationally.
- **The National Council of Teachers of English** is devoted to improving the teaching and learning of English and the language arts at all levels of education. Since 1911, NCTE has provided a forum for the profession, an array of opportunities for teachers to continue their professional growth throughout their careers and a framework for cooperation to deal with issues that affect the teaching of English.



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Handout 3-8 ▶

The 12 Standards

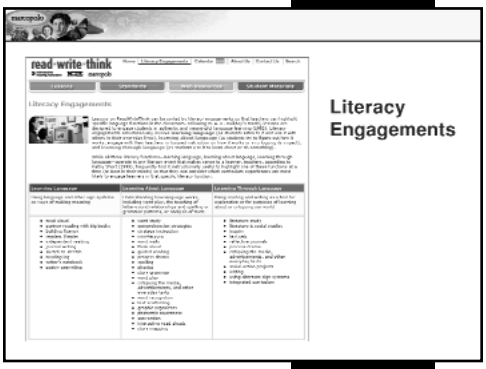
3. Point out that IRA and NCTE have a shared purpose to ensure that all students are knowledgeable and proficient users of language so that they may succeed in school, participate in our democracy as informed citizens, find challenging and rewarding work, appreciate and contribute to our culture and pursue their own goals and interests as independent learners throughout their life. Pass out a copy of **Handout 3-8** to provide attendees with an overview of these standards.

Literacy Engagements

4. Explain that lessons on RWT can be sorted by literacy engagements so that teachers can highlight specific language functions in the classroom.

- Learning Language
- Learning About Language
- Learning Through Language

5. Click Literacy Engagements at the top of the homepage to show all three literacy functions.



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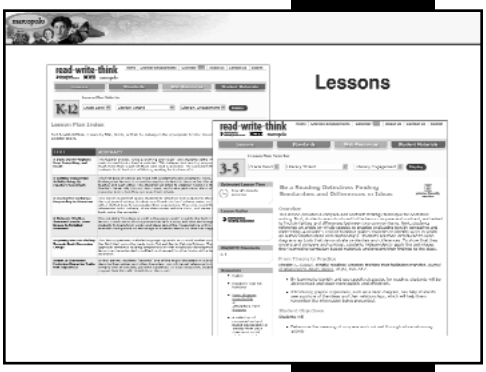
Lessons

6. Explain that the Lessons link is where educators can find reading and language arts lessons.

- RWT offers a wide array of standards-based lesson plans that meaningfully integrate Internet content into teaching. Lessons can be selected according to grade and area of literary practice. Each lesson is tied to a research-based publication, and each includes a detailed instructional plan.
- Have participants click Lessons on the RWT homepage and use the Lesson Plan Selector to quickly access a lesson.

7. Scroll down the lesson plan to explain how it is organized. Call particular attention to these sections:

- Overview
- From Theory to Practice
- Student Objectives
- Instructional Plan
- Student Assessment/Reflections
- IRA/NCTE Standards



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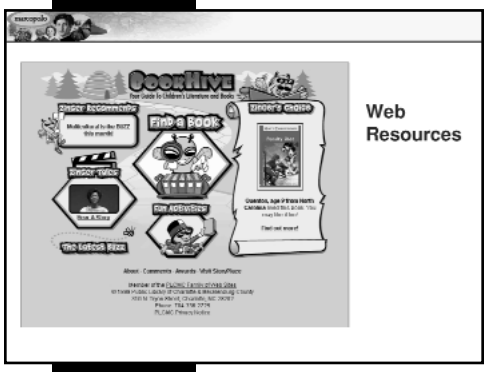

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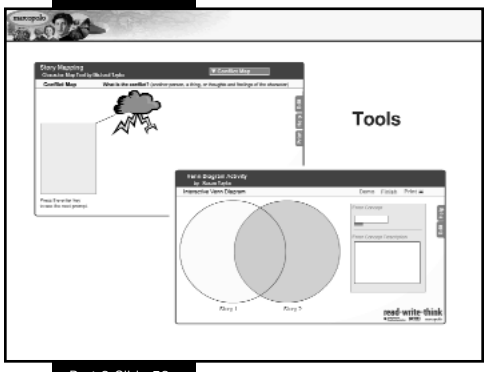
Web Resources

8. Turn next to the Web Resources on the RWT homepage. Explain that in addition to lesson plans, RWT offers teachers links to reviewed English language arts resources on the Internet that are thoroughly reviewed by the RWT Review Panel and adhere to a rigorous set of criteria.

- Have participants click Web Resources, and then select a resource by grade and resource type.
- If time permits, have participants use the Web Resource Gallery Navigator to briefly visit some of the Reviewed Sites by clicking the link to see for themselves.



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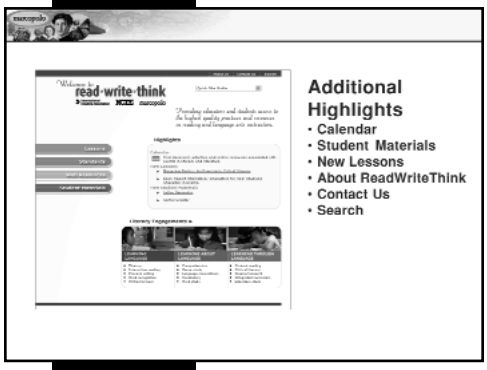
Tools

9. Point out that to enhance interactive learning, RWT has produced a selection of lessons that incorporates interactive student materials. These interactives are intended primarily to assist students with a reading or writing activity.



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Additional Highlights

10. Conclude your tour of RWT with a brief description of some additional features of the site.

- **Calendar:** entries provide a brief description of the events, along with related Web resources, lesson plans and activities for students.
- **Student Materials:** lessons that incorporate interactive, online activities for your students.
- **New Lessons:** look for new lessons posted to RWT regularly.
- **About RWT:** provides background on its Web site and partners.
- **Contact Us:** offer feedback to help improve the site.
- **Search:** accessible from the RWT homepage. The MarcoPolo Search Engine searches RWT and across all MarcoPolo Content Partner sites in a single search.

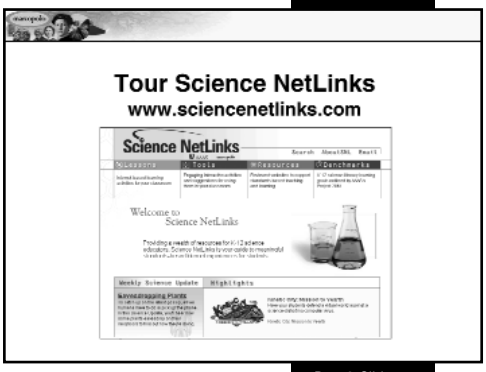
Tour Science NetLinks

1. Introduce Science NetLinks, the Web site created by the American Association for the Advancement of Science.

   Have participants click the Science NetLinks logo on the MarcoPolo homepage to tour the site. Distribute copies of the Science NetLinks Content Partner Site Overview **(Handout 3-9)** to help guide participants through their tour.

2. Provide some background on the American Association for the Advancement of Science (AAAS, pronounced triple-A-S):

   - AAAS was founded in 1848 and is now the largest general science organization in the world.
   - AAAS is the publisher of the weekly journal, *Science,* one of the leading forums for the exchange of scientific research in all fields.
   - The Association helped launch the PBS series "NOVA," now the longest-running science program on television.
   - The Association's mission is to promote the advancement of science for the benefit of all people.



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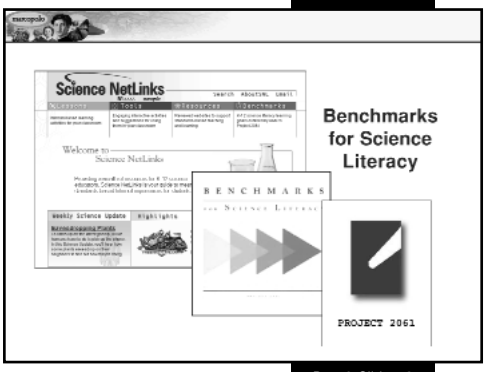
◀ **Handout 3-9**

Benchmarks for Science Literacy

3. Point out that Science NetLinks content is aligned to the *Benchmarks for Science Literacy* developed by AAAS's Project 2061 (pronounced 20-61).

   - Explain that Project 2061 is a long-term science education reform initiative launched in 1985, the last time Halley's Comet visited Earth, for the purpose of ensuring that all Americans will be literate in science by the time Halley's Comet returns in 2061.
   - Project 2061 began by outlining what students should know and be able to do in science, mathematics and technology by the time they graduate from high school. These science literacy standards, called *Science for All Americans,* were published in 1989.
   - As a follow-up, Project 2061 went on to translate these standards into *Benchmarks for Science Literacy,* a comprehensive set of learning objectives that students should accomplish by the end of grades 2, 5, 8 and 12 in order to attain adult science literacy.



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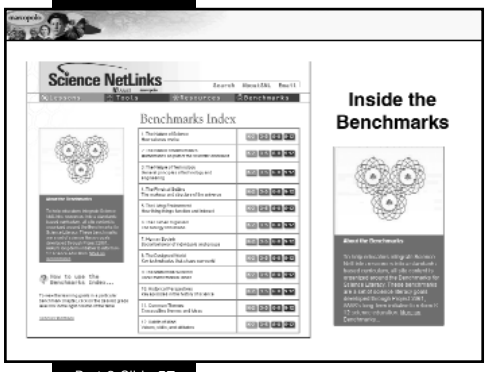
- The Benchmarks provide a framework for K–12 science education that is based on the experience of teachers and administrators as well as extensive research into students' intellectual development and individual learning styles.
- Comparative studies have shown that the Benchmarks share about 90 percent of the content recommendations made in the National Science Education Standards. In addition, a survey of 43 state curriculum documents found that many have adopted the Benchmarks as a guiding principle in setting their own standards.



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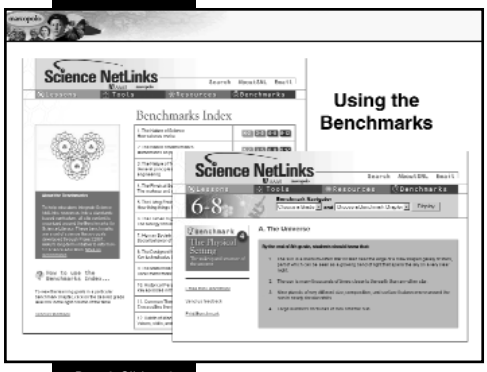
Handout 3-10 ▶

Inside the Benchmarks

4. Distribute the Benchmarks for Science Literacy (Outline) **(Handout 3-10)**.

- Note that each of the 12 Benchmarks is a broad topic. Together these topics reflect the "common core" of science learning, providing a more integrated view than the traditional division of science into separate disciplines.
- Each topic is divided into a number of subtopics, which define specific areas of learning.
- For each subtopic, the Benchmarks describe in detail what a student should know by the end of grades 2, 5, 8 and 12.
- Emphasize that all this information is available through Science NetLinks.



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Using the Benchmarks

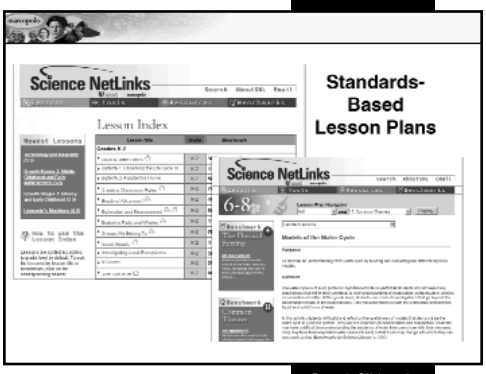
5. Have participants click Benchmarks on the Science NetLinks homepage.

- Point out that each Benchmark is subdivided into subtopics, with related learning goals listed for grades K–2, 3–5, 6–8 and 9–12.
- Have participants click the 6–8 button under Benchmark 4: The Physical Setting.
- Point out that here they can read the specific learning goals for grades 6–8 within each subtopic.
- Have participants use the Benchmark Navigator at the top of the page to demonstrate how they can quickly access both the learning goals for different grade levels and the other Benchmarks.

- Invite a discussion on how teachers can use this feature to align the Science NetLinks Benchmarks with the science education standards in their school.

Standards-Based Lesson Plans

6. Explain that Science NetLinks lesson plans are tailored to specific learning goals and specific grade levels.



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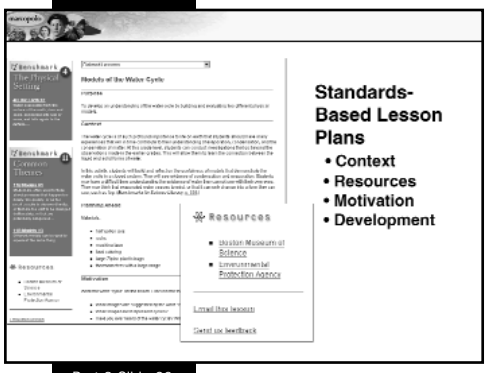
- Have participants click Lessons on the Science NetLinks homepage. Point out the Newest Lessons box, which gives regular users quick access to Science NetLinks' ongoing lesson additions.
- Explain that the Science NetLinks lesson database enables users to sort lessons by title, grade and Benchmark. This Lesson Index is accessible from any page in Science Netlinks by clicking the Lesson tab at the top of the page.
- Highlight the Icon Key to the left of the Lesson Index. These icons give users a quick indication of the types of resources they will find in the lesson.
- Next open up a lesson plan by clicking on a title. Point out the Benchmark information in the left-hand box of the lesson; this Benchmark box outlines the grade-specific learning goals the lesson is designed to support.
- Point out that the drop-down menu above the lesson title gives users quick access to Related Lessons.
- Have participants use the Lesson Plan Navigator to quickly access lesson plans for different grade levels and Benchmarks.
- Explain that Science NetLinks, with its broad base of lessons, is a comprehensive resource for standards-based science education.

7. Scroll down a lesson to explain how it is organized. Call particular attention to these sections:

- **Context:** This section suggests how the lesson might fit into a teacher's science curriculum and how it relates to the *Benchmarks for Science Literacy.*
- **Resources:** This section, located in the left-hand column under the Benchmark box, lists the online resources used in the lesson, providing a link to the Science NetLinks review of each site. Relevant components of these resources are embedded throughout the lesson itself.



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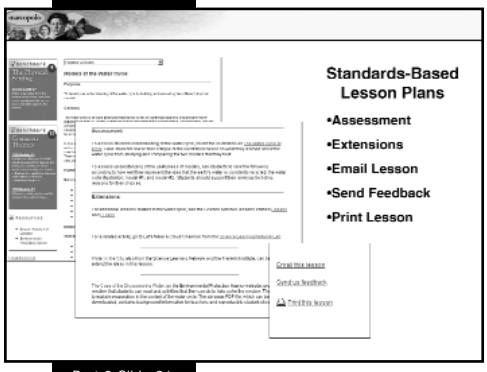
- **Motivation and Development:** These sections offer strategies for introducing the lesson and guidelines for classroom implementation. Point out that online resources are integrated into these key parts of the lesson, with links to the specific Web site content teachers and students need.
- As you review the lesson, point out that it is designed to promote hands-on, inquiry-based learning, with directions for in-class experiments and demonstrations. This is not "virtual" science education. It is real-world science, combining online resources with hands-on learning.



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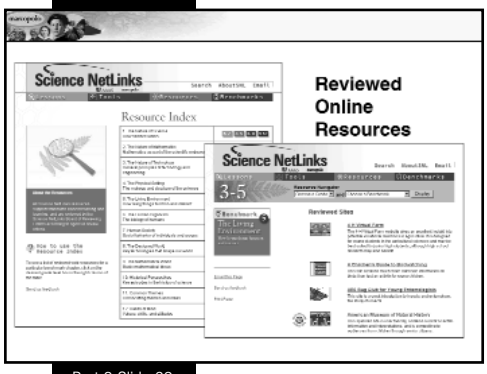
8. Scroll down to the end of the lesson plan to highlight three especially teacher-friendly features:

- **Assessment:** This section offers practical advice for evaluating student performance, with a focus on genuine understanding of concepts, not on the completion of a simple quiz.
- **Extensions:** This section highlights online resources that can serve to expand the scope of the lesson. Teachers can use these suggestions as the basis for their own lesson plans or as independent study projects.
- **Additional Features:** Point out the **E-mail Lesson, Send Feedback** and **Print Lesson** options included in the lesson.

Reviewed Online Resources

9. Turn next to Resources on the Science NetLinks homepage. Explain that in addition to lesson plans, Science NetLinks offers teachers links to hundreds of reviewed science Web sites, all categorized by Benchmark and grade level.



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- Have participants click Resources, and then select a resource section by Benchmark and grade.
- Point out the advantage of having these Web sites categorized by Benchmark topic and grade level: no need to scroll through a long list looking for the one Web site relevant to your curriculum.
- Have participants click any of the Reviewed Sites on the list to see a Science NetLinks Web site review.

- Point out that the review gives teachers everything they need to evaluate a Web site: type of content, target audience and a detailed description that comments on how the site's content can be used by teachers.
- If time permits, have participants use the Resource Navigator to locate other Reviewed Sites. This allows them to see the diversity of the online resources Science NetLinks provides.

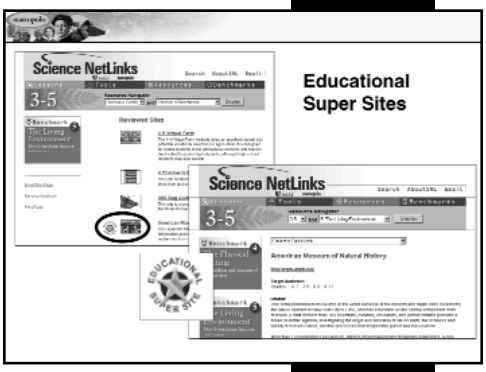
Educational Super Sites

10. Some benchmark topics and grade levels (e.g., The Physical Setting, grades 6–8) also include links to Educational Super Sites. Scroll down the alphabetical resource list to show participants the Educational Super Sites. These sites are designated by the Educational Super Site icon to the left.

- Explain that these are Web sites of exceptional educational merit that have been reviewed and selected by Science NetLinks' Board of Reviewing Editors, which includes educators and scientists.
- Point out that they can learn about the special selection criteria for Educational Super Sites and find out who is on the Board of Reviewing Editors by clicking the About SNL link at the top of any Science NetLinks homepage.

11. Showcase this feature of Science NetLinks by visiting several of the Educational Super Sites.

- For example, visit the *Energy Quest* site under Physical Setting (6–8), and look into "Poor Richard's Energy Almanac" at http://www.energyquest.gov/library/ben/index.html, where students can compare the energy needs of a colonial-era home and a home of today.
- Point out that many Educational Super Sites provide teachers with an additional source of high-quality science lesson plans within their specific subject areas.



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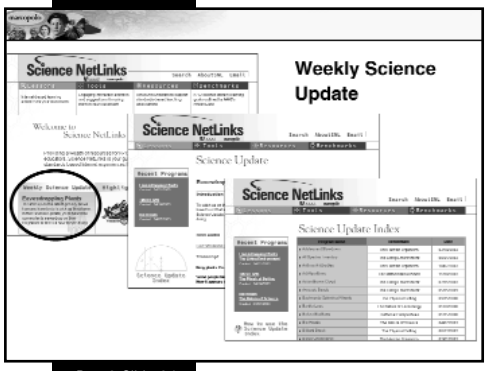
For a guide to evaluating Web sites, based on MarcoPolo standards, see page VII.7.



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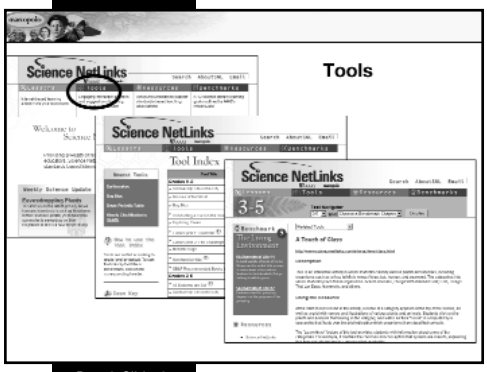

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The MarcoPolo Search Engine is presented in Part 2, page II.9.

Weekly Science Update

12. Return to the Science NetLinks homepage to introduce several additional resources available at the site:

- Have participants click under Weekly Science Update on the homepage to access an audio file and transcript of the latest AAAS radio report(s) on current scientific research. Point out that these reports come with lesson suggestions and links to online resources to help teachers use the weekly update in class.

- The Science Update Index is accessible upon clicking a currently featured update and from the homepage.

13. Next return to the Lesson Index section and scroll down until you see the Tools icon in the left-hand toolbar. Explain that in this section, teachers will find a listing of student interactives that can be used either in standalone fashion or as part of a Science NetLinks Lesson Plan.

- Click on the Tool icon to see the list of Science NetLinks tools. Point out that the Tool Index works just like the Lesson Plan Index, in the sense that one can sort the tools by title, grade, or benchmark.
- Ask participants to find and select the Touch of Class link in the grades 3–5 tools section. On the subsequent page, they will see a link to the tool, a brief description, directions for using the tool and links to related Science NetLinks resources. If time allows, give participants time to "play" the Touch of Class game, which helps students learn how to classify various organisms. Organisms in the game include a frog, jellyfish, venus flytrap, bat, human and seaweed. The categories into which students may place these organisms include Animals, Things With Webbed Feet, Fish, Things That Lay Eggs, Mammals and more.

MarcoPolo Search Engine

14. Point out to participants that wherever they go on Science NetLinks they have instant access to the MarcoPolo Search Engine at the top of the frame.

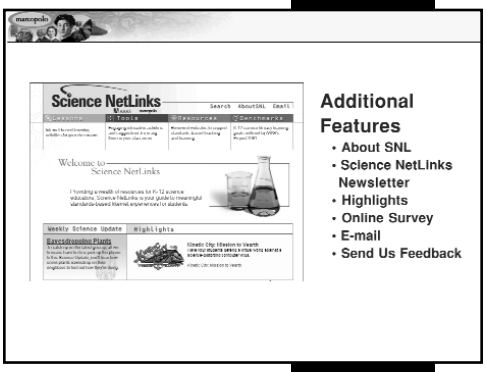
- Explain that entering a search term upon clicking Search from Science NetLinks launches a Basic Search across Science NetLinks and all MarcoPolo

Content Partner sites for Catalogued Resources on the specified topic across all grade levels.

- Explain that teachers can limit the search results to just Science NetLinks resources by using the Advanced Search option. This link also allows teachers to limit results by grade level and/or discipline.

Additional Features

15. Conclude your tour of Science NetLinks with a brief description of some additional features of the site.



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- **About SNL:** provides background on the site, including the criteria used to evaluate Web sites and a list of the Board of Reviewing Editors. Additional site features are housed here.
- **Science NetLinks Newsletter:** accessible from About SNL and written for teachers who are interested in regular updates on the latest Science NetLinks developments.
- Point out the **Highlights** section on the Science NetLinks homepage. This feature identifies timely and relevant Science NetLinks activities and lessons.
- **Online Survey:** a link to the MarcoPolo Online Educator Survey.
- **E-mail:** gives users a quick means by which to submit general comments and inquiries directly to the Science NetLinks site developers.
- **Send Us Feedback:** accessible from any lesson plan or resource page. Feedback sent using this method is aligned to the specific page from which the message is sent, giving teachers a more focused means of delivering feedback to site developers. This feedback method is a good way to communicate broken link notes and specific comments about a particular lesson or resource.

16. Provide participants with time to comment on Science NetLinks before continuing with your tour of the MarcoPolo Content Partner Web sites.

Part 3 Slide 67

Handout 3-11 ▶

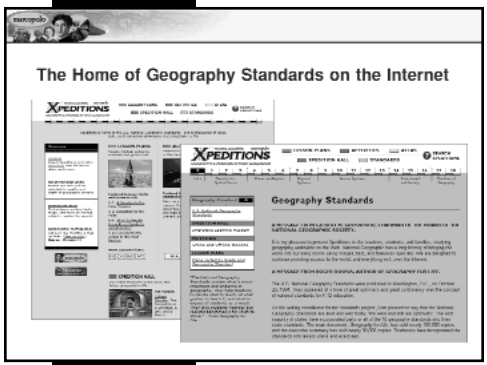
Tour Xpeditions

1. Introduce Xpeditions, the MarcoPolo Content Partner Web site created by the National Geographic Society.
   - Have participants click the Xpeditions logo on the MarcoPolo homepage to tour the site. Distribute copies of the Xpeditions Content Partner Site Overview **(Handout 3-11)** to help guide participants through their tour.
   - Anticipate that some members of your group will point out the apparent misspelling in the name of this Web site. Let it pass.

2. Most participants probably will be familiar with the National Geographic Society (NGS), but you might still provide some background:
   - NGS was founded in 1888 and is now the largest nonprofit scientific and educational organization in the world.
   - NGS publishes *National Geographic* magazine and produces many National Geographic television programs.
   - The Society established the Geography Alliances, a grassroots network of geography teachers with chapters in every state.
   - NGS spearheaded development of the U.S. National Geography Standards, which helped restore this once-neglected subject to an important place in the K–12 curriculum.

The Home of Geography Standards on the Internet

3. Point out that Xpeditions calls itself "the home of geography standards on the Internet." To find out why, have participants click Standards on the Xpeditions homepage, at either the top menu or the Standards box in the middle of the homepage.
   - Explain that here teachers can review each of the 18 U.S. National Geography Standards by clicking one of the numbers in the menu bar at the top of the Standards page.
   - Pass out the National Geography Standards (Outline) **(Handout 3-12)** to provide participants with an overview of this organizing principle of the Xpeditions site.



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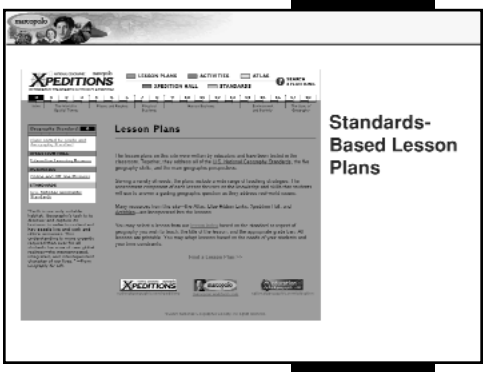
Handout 3-12 ▶

- Briefly review the standards, which are organized under six headings called the "elements" of the standards. Remind participants that these standards are intended to outline in broad terms what a geographically informed person should know about "the web of relationships between people, places, and environments."
- Have participants click one of the numbers on the Standards bar to see how each standard is explained in depth, with examples to help teachers implement the standard in class.

Standards-Based Lesson Plans

4. Explain that the Lesson Plans section of Xpeditions is where teachers can go to find standards-based geography lesson plans categorized by standard and grade level.



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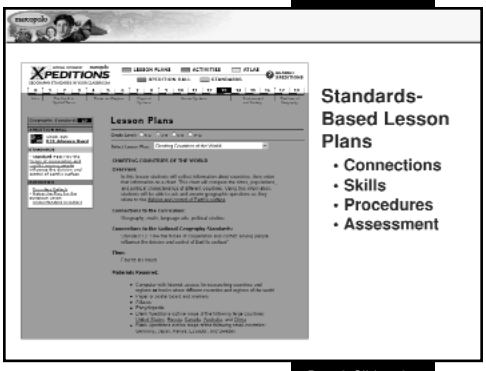
- Select Lesson Plans from either the top navigation menu or the Lesson Plans box in the middle of the homepage. An index of all lessons is available at Find a Lesson Plan.
- One way to access a lesson plan is to click a standard number at the top of the page. Then demonstrate how lessons can be arranged by grade level using the radio buttons. Point out the drop-down menu of available lesson plans under the chosen standard and grade.
- Select a lesson, and then scroll down the lesson plan to show participants how it is organized for easy implementation.
- Point out the **Connections to the Curriculum** section, which is designed to help teachers integrate geography into all parts of the K–12 curriculum.
- Call attention to the **Geographic Skills** section, which details how the lesson can improve students' geographic literacy.
- Review the **Suggested Procedures** section, which provides step-by-step directions for presenting the lesson, and the **Suggested Student Assessment** section, which provides a strategy for evaluating how well students have met the lesson plan's objectives.



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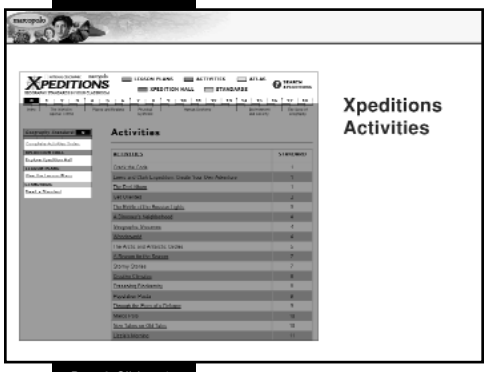
- Explain that some Xpeditions lesson plans include links to online resources, while others are designed for a more traditional classroom setting.
- Point out the E-mail This Page to a Friend option.



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Standards-Based Activities

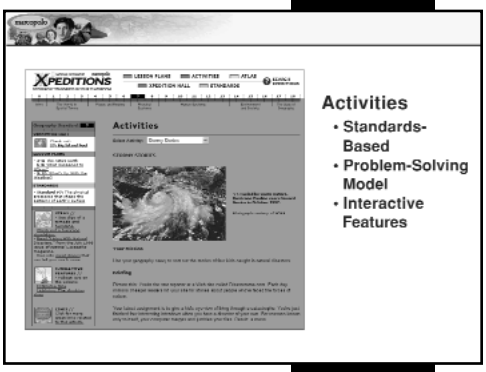
5. Explain that Xpeditions features activities that give Xpeditioners the opportunity to use geography to complete a variety of missions. These standards-based, interactive activities can be used at home or in the classroom.

- Have participants click Activities in the navigation menu at the top of the homepage to see this section of the site, or click the Activities box in the middle of the homepage. An index of activities is available at Find an Activity.
- Access an activity by clicking a standard number in the top navigation menu, and then demonstrate how activities can be arranged by grade level using the radio buttons. Point out the drop-down menu of available activities under the chosen standard and grade.
- Explain that Activities draws on many parts of the larger nationalgeographic.com Web site and includes online content from many National Geographic publications.
- Point out that each Activity is standards-based, presenting a geography adventure that is related to one of the six elements of the U.S. National Geography Standards.
- Remind participants that this means teachers can easily align Activities with their own curriculum standards.

6. Click Standard 7 at the top of the Activities page to show participants the activity “Stormy Stories.”

- Point out how each adventure uses a problem-solving model to engage children in a mystery, mission or challenge.
- Each adventure includes links to online resources that lead step by step to a solution of the problem.

- Each activity also includes a Family-X Files section, which provides age-appropriate suggestions for further learning, as well as background information and activity ideas for parents.
- Point out that each adventure comes with an array of resources listed to the left of the page with which children and parents can extend and enrich their learning experience. These include Xtras, Interactive Features from the online editions of National Geographic publications, and puzzles, games and other content created specifically to enhance the latest Activity. Additional Links also are available.
- Point out that teachers may click on the lesson plan titles to the left of the Activity for classroom lesson plans related to the featured Activity.



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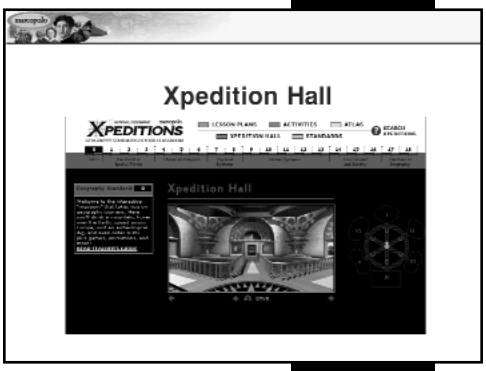
Xpedition Hall

7. Explain that Xpeditions offers students and teachers even more opportunities for online learning in the "Xpedition Hall" section of the Web site.

- Have participants click Xpedition Hall in the navigation menu at the top of the homepage or on the Xpedition Hall box in the middle of the homepage.
- Point out that a PDF version of a Teacher's Guide to Xpedition Hall is available. The Teacher's Guide provides detailed navigation instructions as well as ideas and lesson plans for using "Xpedition Hall" activities in the classroom.
- Explain that "Xpedition Hall" is divided into six galleries that correspond to the six elements of the National Geography Standards.
- Point out that visitors can explore "Xpedition Hall" using the picture in the middle of the page, the compass-shaped map at the right or the standards navigation bar at the top of the "Xpedition Hall" main page.



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8. Show participants how they can use the interactive picture to move through this virtual museum.

- Have them click the right or left arrow below the picture to see how the scene changes to reveal the different galleries in the hall. Then have them click a few times within the picture to move down a gallery toward the exhibits it contains.

(Note: The forward arrow also moves the user down the exhibit corridor.)

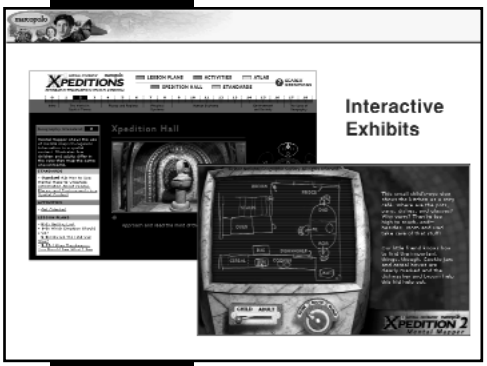
- Next, have participants click an exhibit to bring it into full view. Explain that clicking on this close-up view will launch the exhibit in a separate window.
- Point out that visitors can also load a QTVR (Quick Time Virtual Reality) version of the picture, which creates a seamless illusion of moving through virtual space.

9. Show participants how they can use the round floor plan to the right of the page to navigate through "Xpedition Hall."

- Point out that the floor plan tracks a visitor's virtual movements through the Hall, showing one's position and identifying the different galleries and exhibits along the way.
- Have participants move their cursors over the Roman numeral wings that ring the floor plan to see the name of each gallery and an outline of its virtual exhibit space.
- Have them put their cursors on the wings' outer circles, which represent the individual exhibits to see the exhibits' names as well.
- Explain that the map provides a shortcut to any exhibit in "Xpedition Hall"—just click its position on the map to bring it into full view, then click the picture to launch the exhibit in a separate window. Remind participants that the standards bar at the top of the page also serves as a shortcut to "Xpedition Hall" exhibits.

10. Launch one of the "Xpedition Hall" exhibits to show participants how they can engage students in a standards-based interactive learning experience.

- Point out how the exhibits use virtual buttons, levers and viewers to get visitors involved.
- Point out also that each exhibit is designed to illustrate basic concepts outlined in the National Geography Standards.
- Discuss briefly how a teacher might incorporate a visit to "Xpedition Hall" into his or her curriculum.



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Atlas

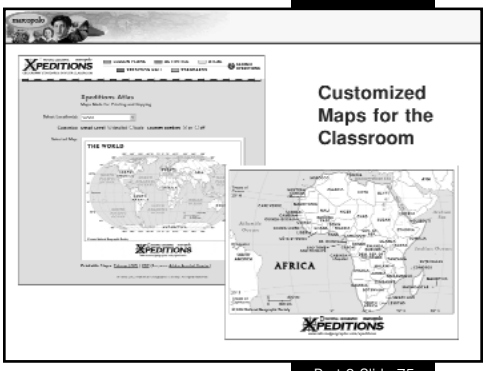
11. Continue your tour of Xpeditions by introducing participants to the "Atlas" area of the site, which offers Internet content tailored to more traditional ways of teaching geography.

- Have participants click Atlas in the navigation menu at the top of the homepage to see this library of nearly 400 up-to-date outline maps (viewable four ways) prepared by National Geographic's renowned cartographers.
- To access a map, have participants first select one of the continents from the drop-down menu near the top of the page, or have them click directly on a continent in the display to bring a continent into full view.
- Point out that the "Atlas" also contains detailed maps of the United States, Canada and Mexico.

Customized Maps for the Classroom

12. Show participants how teachers can customize and print out a map using the options available with the Xpeditions "Atlas."

- **Details:** Clicking the Detailed radio button under Customize presents a map with places and geographic features labeled. Click Basic to produce a map without such labels—the perfect thing for testing students' geographic knowledge.
- **Borders:** Click borders Off to produce a nearly blank map—the kind one needs to highlight geologic features in an Earth science class or to trace the borders of a vanished nation in history.
- **Countries/States:** Click the name of a country or state in the drop-down menu(s) to see the selection in a close-up map that includes surrounding territories.



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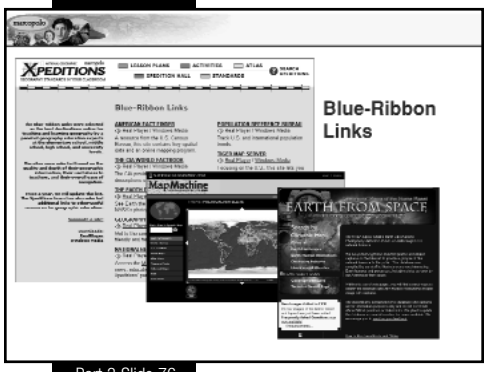
See the Glossary of Internet Terms, page VII.9, for more information on GIFs and PDFs.

- **Print Out:** Explain that every map in the Xpeditions Atlas has been specially formatted for print so that teachers can use them easily in the classroom. Scroll to the bottom of the map to show participants the print options available: GIF, which opens the map in a separate window as a large graphic that can be printed with the browser's print command or saved to the hard disk; and PDF, which opens the map in Acrobat Reader where it can be printed or saved.
- If possible, print out a map to show participants how these options work and the high quality of the maps Xpeditions provides.



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Blue-Ribbon Links

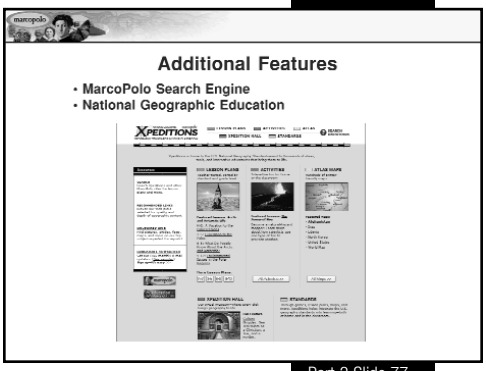
13. Complete your tour by showing participants the online resources accessible through Xpeditions.

- Return to the Xpeditions homepage by clicking the Xpeditions logo at the top of the screen. From the homepage, click Recommended Links to review a comprehensive list of Xpedition's Blue-Ribbon Links. Point out the selection criteria to the left.
- Scroll down the list to see the quality of resources gathered here and, if time permits, sample one or two Web sites, such as *The Earth from Space,* a library of satellite images, or the *Map Machine* on www.nationalgeographic.com, a compendium of cartography.

Additional Features

14. Close your tour of Xpeditions with a brief description of some additional features of the site.

- **MarcoPolo Search Engine:** accessible from the top of all Xpeditions pages. The MarcoPolo Search Engine allows educators to search Xpeditions and all MarcoPolo Content Partner sites in a single search. Teachers may limit searches by discipline, grade and/or Content Partner site using the Advanced Search option.
- **National Geographic Education:** a link to other education resources from the National Geographic Society.



Part 3 Slide 77

The MarcoPolo Search Engine is presented in Part 2, page II.9.

Web Site Review

1. Conclude this part of the training program by having participants work in teams to produce their own reviews of the MarcoPolo Content Partner Web sites.

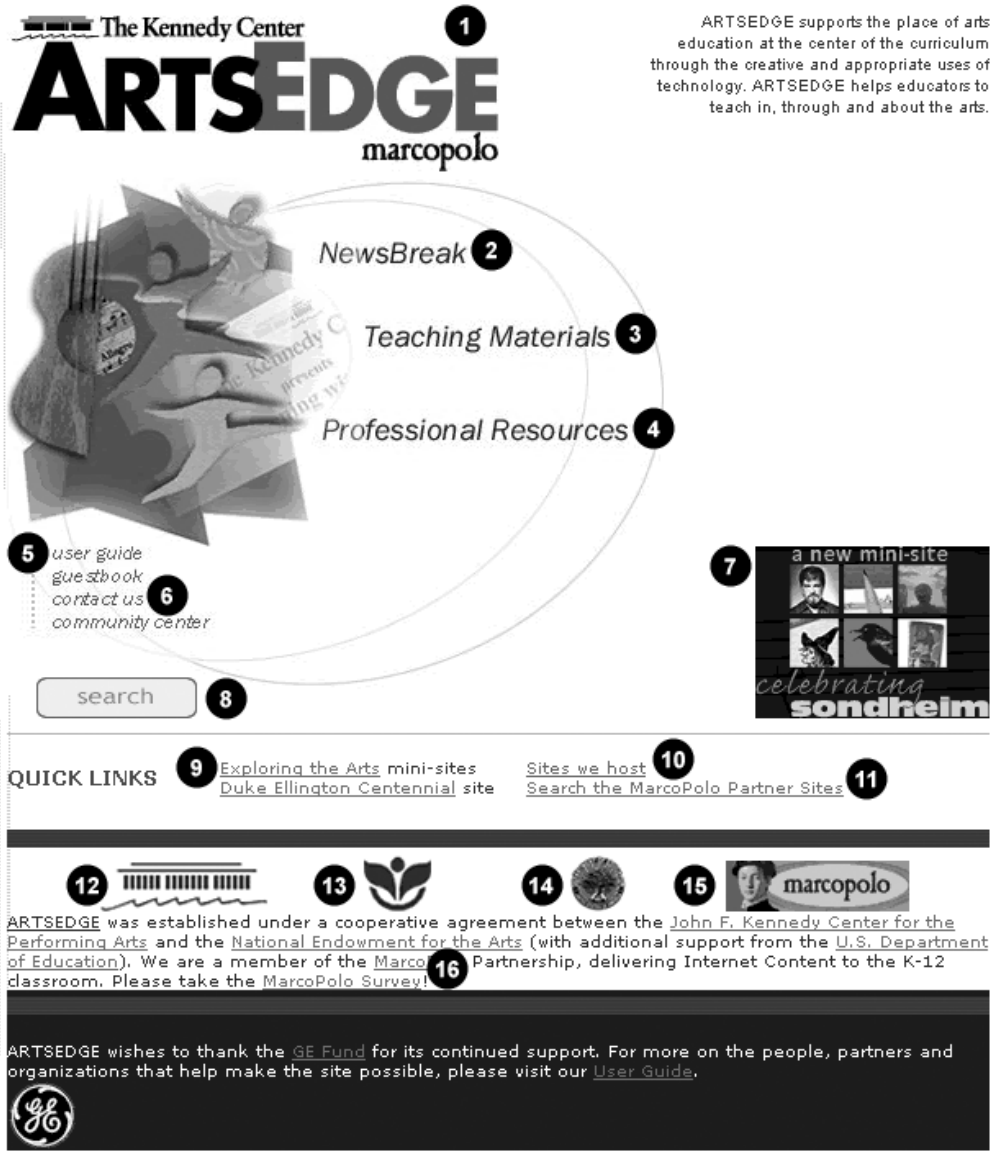
- Divide the group into six study teams and distribute copies of the Web Site Review Worksheet **(Handout 3-13)**.
- Explain that each team will use the worksheet to evaluate one of the Content Partner sites and offer a personal perspective on its resources.

2. When participants have completed their worksheets, have each team present its review to the group.

◀ **Handout 3-13**

The Kennedy Center ARTSEDGE marcopolo

http://artsedge.kennedy-center.org
John F. Kennedy Center for the Performing Arts



1. **ARTSEDGE Logo**
   Created by the John F. Kennedy Center for the Performing Arts

   Supports arts integration within all subject and grade areas

   Located at http://artsedge.kennedy-center.org

2. **NewsBreak**
   News and events relevant to arts, education and technology

   Information on grants, funding, competitions and job opportunities

   Birthday Bookmark highlights a different cultural figure every day and links to a related resource on ARTSEDGE

3. **Teaching Materials**
   Content that integrates the arts across the curriculum (ESL, foreign language, mathematics, physical education, science, social studies, design arts, language arts, performing arts and visual arts)

   Curriculum units, individual lesson plans and other activities based on National Standards for Arts Education and other national standards

   Model lessons such as "Integrated Dance Curriculum: Jazz Dance Music" and "Torres-Garcia Symbolism: Art Appreciation, Technology and Production"

   Curriculum WebLinks (external Web sites, not maintained by ARTSEDGE, but reviewed for teacher and student use)

   Exploring the Arts mini-sites on specific themes and subjects

   Cuesheets (performance guide handouts for students)

   Curriculum Feature of the Month

   Guides on how to use ARTSEDGE lessons in the classroom

   Instructions on how to submit lesson plans, including an online submission form

4. **Professional Resources**
   Professional development opportunities and contacts

   Arts education advocacy resources

   Articles on the latest research in arts education

   Educational tools such as "Arts Content Planning Matrix" and "Guide to Curriculum Mapping"

   National Standards for Arts Education and other national standards

5. **User Guide**
   Background information on the ARTSEDGE program in About ARTSEDGE

   User's manual on best use and selection criteria

6. **Contact Us**
   Frequently Asked Questions

   Site map for navigation assistance

   Editor link to submit feedback or ask questions

7. **New Resources**
   Featured new resources, such as this mini-site on the musical theater work of Stephen Sondheim

8. **Search**
   ARTSEDGE and MarcoPolo Search Engines (including "power searches" that allow users to search only within ARTSEDGE curricula, WebLinks, or contacts)

   Quick Links/Top Searches

   Top Destinations

   FAQs

   Search Tips

9. **Exploring the Arts**
   Self-contained explorations ("mini-sites") on topics such as Duke Ellington and Latin American arts

   Activities and resources for classroom, at-home and student use

10. **Sites We Host**
    ARTSEDGE-hosted sites such as African Odyssey Interactive and the DC Arts and Humanities Education Collaborative

11. **Search the MarcoPolo Partner Sites**
    Searches across ARTSEDGE and all MarcoPolo Partner Sites in a single search

    Produces educational results hand-catalogued by educators and librarians

12. **Kennedy Center Logo and Link**
    Allows users to access the Kennedy Center site

13. **NEA Logo and Link**
    Allows users to access the National Endowment for the Arts site

14. **U.S. Department of Education Logo and Link**
    Allows users to access the U.S. Department of Education site

15. **MarcoPolo Button**
    Allows users to return to the MarcoPolo site at any time

    Accessible at the bottom of every page

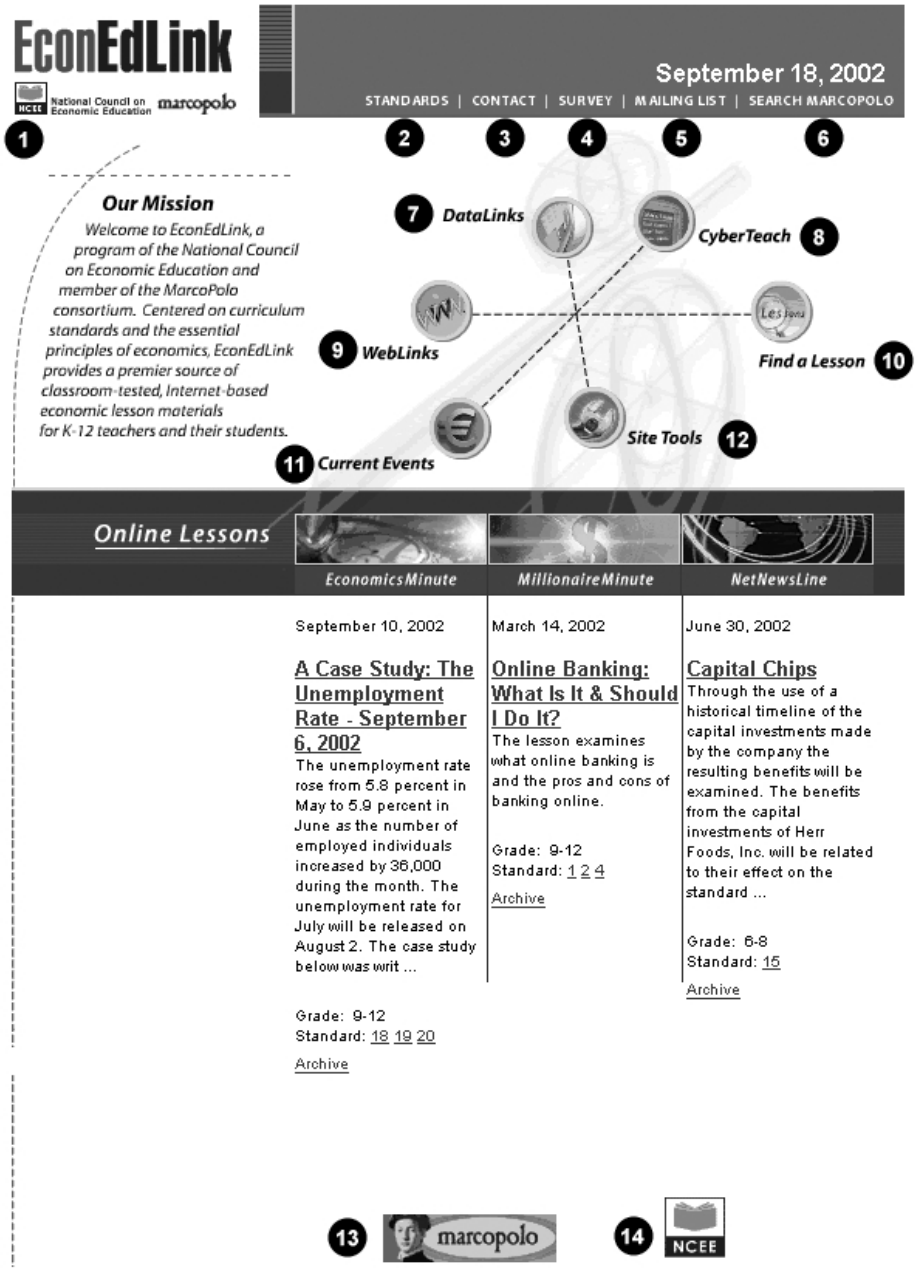
16. **MarcoPolo Survey**
    Web Site Survey helps to shape the site

    Teachers are the final arbiters of MarcoPolo

EconEdLink

National Council on Economic Education marcopolo

www.econedlink.org
National Council on Economic Education



1. **EconEdLink Logo**
   Created by the National Council on Economic Education (NCEE)

   Serves as a premier source of classroom-tested, Internet-based economics lesson materials

   Located at http://www.econedlink.org

2. **Standards**
   Content aligned to the Voluntary National Content Standards in Economics

   Standards based on the essential principles of economics which indicate attainment levels for students in grades 4, 8 and 12

3. **Contact**
   Comments/feedback form

   E-mail link for questions

4. **Survey**
   Web site survey helps to shape the site

   Teachers are the final arbiters

5. **Mailing List**
   Online subscription form to receive NCEE updates and publications lists

6. **Search MarcoPolo**
   Searches EconEdLink and all MarcoPolo Content Partner Sites in a single search

   Produces only educational results hand-catalogued by educators and librarians

7. **DataLinks**
   Key up-to-date macroeconomics data

   Primary source materials, charts and simulations

8. **CyberTeach**
   "How-to" on using Internet-based content in the economics curriculum

   General integration tips for using technology

9. **WebLinks**
   Web sites selected by NCEE experts

   K–12 curricular materials, activities and economics data in easy-to-use formats

10. **Find a Lesson**
    Lessons include EconomicsMinute, MillionaireMinute and NetNewsLine lessons

    Economics Minute

    - Single class period lessons focused on current issues

    - Student and teacher versions

    Millionaire Minute

    - Single class period lessons

    - Emphasis on finance and financial planning

    NetNewsLine

    - Comprehensive, multi-class period lesson sets

    - Emphasis on in-depth issues behind real-world economics such as the economics of professional sports

    Lessons can be sorted by

    - Title

    - Grade

    - Standard

    - Lesson Type

    - Date

    Lessons feature student, teacher and printable versions

    Lessons include teacher comment form and responses

    Model lessons include "Dog Gone Job"

11. **Current Events**
    Up-to-date news articles on current economic issues

    Links to lesson plans on current economic issues

12. **Site Tools**
    Links to the Internet tools you will need to use all of EconEdLink's resources

    Site Map

13. **MarcoPolo Button**
    Link to the MarcoPolo site

14. **NCEE Logo**
    Allows users to access the NCEE site

    Accessible at the bottom of every page

VOLUNTARY NATIONAL ECONOMICS STANDARDS

Standard 1: Scarcity

Productive resources are limited. Therefore, people can not have all the goods and services they want; as a result, they must choose some things and give up others.

Related concepts: Capital resources, Choice, Consumer economics, Consumers, Goods, Human resources, Natural resources, Opportunity cost, Producers, Production, Productive resources, Scarcity, Entrepreneurs, Services, Wants, Entrepreneurship, Inventors, Factors of production

Standard 2: Marginal Cost/Benefit

Effective decision making requires comparing the additional costs of alternatives with the additional benefits. Most choices involve doing a little more or a little less of something: few choices are "all or nothing" decisions.

Related concepts: Cost/benefit analysis, Decision making, Profit motives, Benefit, Costs, Marginal analysis, Profit, Profit maximation

Standard 3: Allocation of Goods and Services

Different methods can be used to allocate goods and services. People acting individually or collectively through government, must choose which methods to use to allocate different kinds of goods and services.

Related concepts: Economic systems, Market structures, Supply, Command economy, Market economy, Traditional economy

Standard 4: Role of Incentives

People respond predictably to positive and negative incentives.

Related concepts: Choice, Incentives

Standard 5: Gain from Trade

Voluntary exchange occurs only when all participating parties expect to gain. This is true for trade among individuals or organizations within a nation, and usually among individuals or organizations in different nations.

Related concepts: Barriers to trade, Barter, Exports, Exchange, Imports, Voluntary exchange, Exchange rates

Standard 6: Specialization and Trade

When individuals, regions, and nations specialize in what they can produce at the lowest cost and then trade with others, both production and consumption increase.

Related concepts: Absolute advantage, Comparative advantage, Division of labor, Production, Productive resources, Specialization, Factor endowments, Gains from trade, Relative prices, Transaction costs, Factors of production, Full employment

Standard 7: Markets — Price and Quantity Determination

Markets exist when buyers and sellers interact. This interaction determines market prices and thereby allocates scarce goods and services.

Related concepts: Market structures, Markets, Price floors, Price stability, Quantity demanded, Quantity supplied, Relative prices, Exchange rates

Standard 8: Role of Price in Market System

Prices send signals and provide incentives to buyers and sellers. When supply or demand changes, market prices adjust, affecting incentives.

Related concepts: Non-price determinants, Price floors, Price stability, Supply, Determinants of demand, Determinants of supply, Law of demand, Law of supply, Price ceilings, Substitute goods, Price

Standard 9 : Role of Competition

Competition among sellers lowers costs and prices, and encourages producers to produce more of what consumers are willing and able to buy. Competition among buyers increases prices and allocates goods and services to those people who are willing and able to pay the most for them.

Related concepts: Market structures, Non-price competition, Levels of competition

Standard 10 : Role of Economic Institutions

Institutions evolve in market economies to help individuals and groups accomplish their goals. Banks, labor unions, corporations, legal systems, and not-for-profit organizations are examples of important institutions. A different kind of institution, clearly defined and enforced property rights, is essential to a market economy.

Related concepts: Legal and social framework, Mortgage, Borrowers, Interest, Labor unions, Legal forms of business, Legal foundations of a market economy, Non-profit organizations, Property rights, Banking, Economic institutions

Standard 11: Role of Money

Money makes it easier to trade, borrow, save, invest, and compare the value of goods and services.

Related concepts: Money management, Money supply, Currency, Definition of money, Money, Characteristics of money, Exchange, Functions of money

Standard 12: Role of Interest Rates

Interest rates, adjusted for inflation, rise and fall to balance the amount saved with the amount borrowed, which affects the allocation of scarce resources between present and future uses.

Related concepts: Interest rate, Monetary policy, Real vs. Nominal, Risk, Investing, Savers, Saving

VOLUNTARY NATIONAL ECONOMICS STANDARDS (CONTINUED)

Standard 13: Role of Resources in Determining Income

Income for most people is determined by the market value of the productive resources they sell. What workers earn depends, primarily, on the market value of what they produce and how productive they are.
Related concepts: Human resources, Derived demand, Functional distribution of income, Labor, Labor market, Marginal resource product, Personal distribution of income, Wage, Aggregate demand, Aggregate supply, Demand, Prices of inputs, Functional distribution

Standard 14: Profit and the Entrepreneur

Entrepreneurs are people who take the risks of organizing productive resources to make goods and services. Profit is an important incentive that leads entrepreneurs to accept the risks of business failure.
Related concepts: Taxation, Costs, Costs of production, Risk, Taxes, Cost/benefit analysis, Innovation, Entrepreneurs, Entrepreneurship, Inventors

Standard 15: Growth

Investment in factories, machinery, new technology, and in the health, education, and training of people can raise future standards of living.
Related concepts: Incentives, Interest rate, Opportunity cost, Production, Technological changes, Trade-offs, Trade-offs among goals, Human capital, Intensive growth, Investment, Physical capital, Productivity, Risk, Standard of living, Economic efficiency, Economic equity, Economic freedom, Economic growth, Economic security, Business, Businesses and households, Factors of production, Health and nutrition, Investing, Savers, Saving, Stock market

Standard 16: Role of Government

There is an economic role for government in a market economy whenever the benefits of a government policy outweigh its costs. Governments often provide for national defense, address environmental concerns, define and protect property rights, and attempt to make markets more competitive. Most government policies also redistribute income.
Related concepts: Externalities, Income, Natural monopolies, Redistribution of income, Role of government, Taxation, Transfer payments, Bonds, Distribution of income, Income tax, Maintaining competition, Monopolies, Negative externality, Non-clearing markets, Positive externality, Property rights, Public goods, Maintaining regulation, Taxes, Regulation, Government expenditures, Government revenues

Standard 17: Using Cost/Benefit Analysis to Evaluate Government Programs

Costs of government policies sometimes exceed benefits. This may occur because of incentives facing voters, government officials, and government employees, because of actions by special interest groups that can impose costs on the general public, or because social goals other than economic efficiency are being pursued.
Related concepts: Benefit, Costs, Special interest groups, Barriers to trade, Cost/benefit analysis

Standard 18: Macroeconomy-Income/Employment, Prices

A nation's overall levels of income, employment, and prices are determined by the interaction of spending and production decisions made by all households, firms, government agencies, and others in the economy.
Related concepts: Gross domestic product (GDP), Macroeconomic indicators, Nominal gross domestic product (GDP), Per capita gross domestic product (GDP), Potential gross domestic product (GDP), Real gross domestic product (GDP), Circular flow

Standard 19 : Unemployment and Inflation

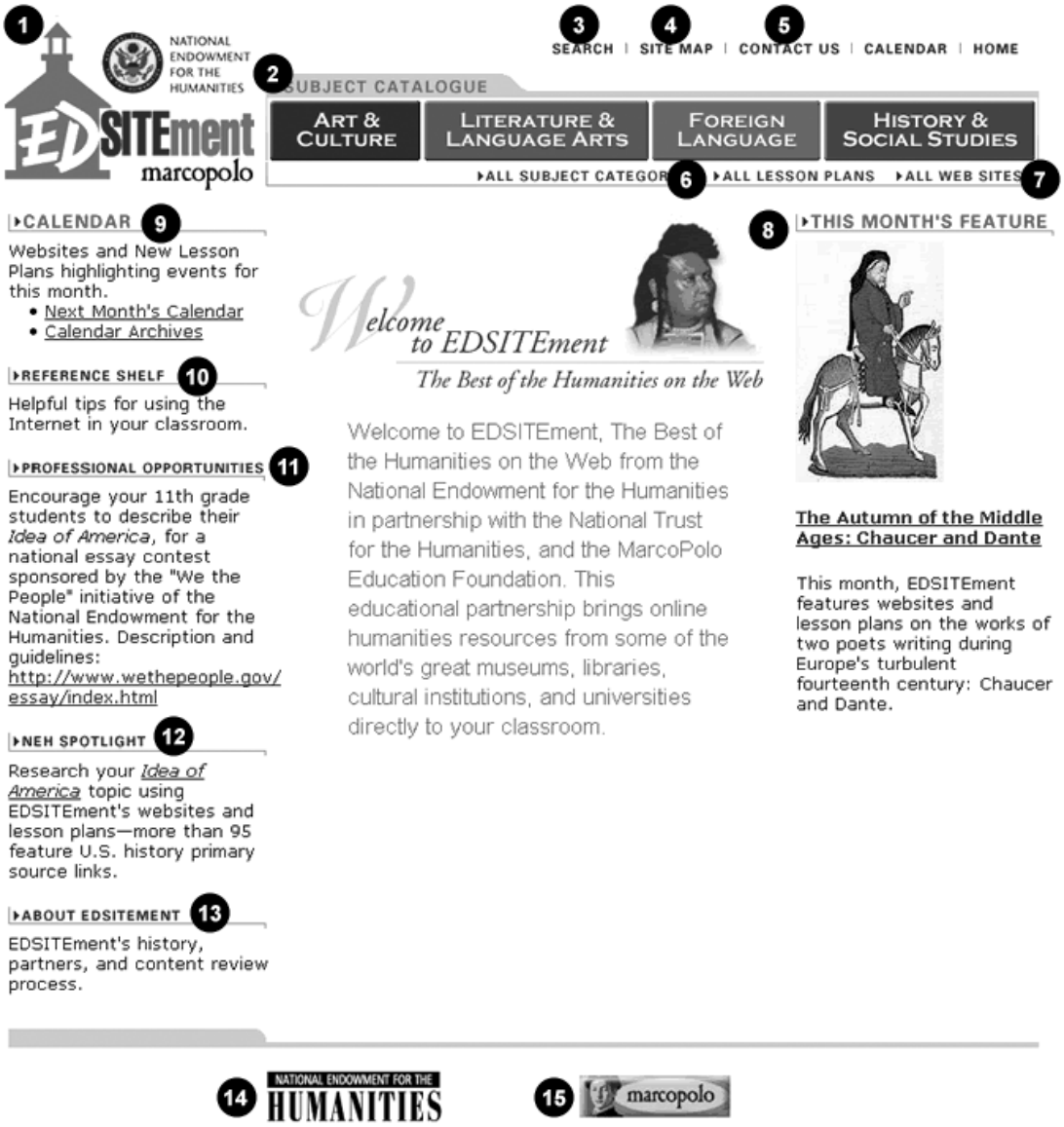
Unemployment imposes costs on individuals and nations. Unexpected inflation imposes costs on many people and benefits some others because it arbitrarily redistributes purchasing power. Inflation can reduce the rate of growth of national living standards because individuals and organizations use resources to protect themselves against the uncertainty of future prices.
Related concepts: Inflation, Types of unemployment, Causes of inflation, Consumer Price Index (CPI), Deflation, Labor force, Unemployment, Unemployment rate

Standard 20 : Monetary and Fiscal Policy

Federal government budgetary policy and the Federal Reserve System's monetary policy influence the overall levels of employment, output, and prices.
Related concepts: National debt, Tools of the Federal Reserve, Discount rate, Federal budget, Fiscal policy, Monetary policy, Open market operations, Reserve requirements, Budget, Budget deficit, Central banking system, Budget surplus, Causes of inflation, Inflation

NATIONAL ENDOWMENT FOR THE HUMANITIES
EDSITEment
marcopolo

http://edsitement.neh.gov
National Endowment for the Humanities



1. **EDSITEment Logo**
   Created by the National Endowment for the Humanities
   Brings the best humanities scholarship available on the Web to classroom teachers
   Located at http://edsitement.neh.gov

2. **Subject Catalogue**
   Categories included:
   - Literature and language arts
   - Foreign languages
   - Art and culture
   - History and social studies

   Sortable by
   - Title
   - Grade level
   - Type of resource (lesson plan, Web link)
   - Subject and subcategory

3. **Search**
   Searches EDSITEment and all MarcoPolo Content Partner Sites in a single search
   Produces only educational results hand-catalogued by educators and librarians

4. **Site Map**
   Navigation assistance
   Quick links

5. **Contact Us**
   Web site survey
   "Talk to Us" contact section

6. **All Lesson Plans**
   Cross-disciplinary teaching units
   Material integrated from EDSITEment-reviewed Web sites for each curriculum topic
   Content that encourages students to research, analyze, discuss, interpret and write about primary source materials, including:
   - Historical documents
   - Literary texts
   - Images
   - Maps
   - Audio files

   Model lessons such as "Evaluating Eyewitness Reports," "Traces: Historic Archaeology" and "Women in Africa: Tradition and Change"

7. **All Web Sites**
   Subject category indicators
   Brief descriptions of sites
   Rigorously reviewed by Peer Review and Blue Ribbon Panels

8. **This Month's Feature**
   Lesson plans and Web sites of topical interest
   Comprehensive overview

9. **Calendar**
   Topical monthly calendar
   Daily featured lesson plans and Web sites

10. **Reference Shelf**
    Tips for better browsing
    Evaluating Online Resources
    Electronic Citations
    Analyzing Primary Resources
    Internet Glossary
    Standards Web Sites

11. **Professional Opportunities**
    Grant and stipend information
    Professional development opportunities

12. **NEH Spotlight**
    NEH-supported special events
    Programs for educators

13. **About EDSITEment**
    Background on EDSITEment
    Web site selection process and review criteria

14. **NEH Button**
    Allows users to access the NEH site
    Accessible at the bottom of every page

15. **MarcoPolo Button**
    Allows users to return to the MarcoPolo site
    Accessible at the bottom of every page

NCTM | ILLUMINATIONS marcopolo

http://illuminations.nctm.org

National Council of Teachers of Mathematics

NCTM | ILLUMINATIONS marcopolo ❶

❷ What's New ❸ Search
❹ About Illuminations ❺ Standards
❻ Guided Tour ❼ Contact Us
❽ Technical Help ❾ Link To Us

View by Grade Band

- Grades Pre-K-2
- Grades 3 - 5
- Grades 6 - 8
- Grades 9 - 12
- Across the Grades

View by Type of Content

- ❿ Lesson Plans
- ⓫ Selected Web Resources
- ⓬ Interactive Math Tools
- ⓭ i-Math Investigations
- ⓮ Inquiry on Practice

Welcome to Illuminations

⓯ Illuminating a New Vision for School Mathematics

⓰ Based on NCTM's Principles and Standards for School Mathematics

Internet resources to improve the teaching and learning of mathematics for all students

⓱ This Week's Highlight:

Cutting Corners Tool - This interactive tool encourages student discussion about the attributes of different geometric figures. It, also, helps students to learn to recognize shapes which have been rotated. (Grades 9-12)

⓲ NCTM NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS

NCTM Illuminations is a partnership between the National Council of Teachers of Mathematics and the MarcoPolo Education Foundation ⓳ marcopolo

1. **Illuminations**
   Created by The National Council of Teachers of Mathematics

   Designed to improve the teaching and learning of mathematics

   Located at http://illuminations.nctm.org

2. **What's New**
   New resources by date added

   New resources archive

3. **Search**
   Searches only Illuminations or Illuminations and all MarcoPolo Content Partner Sites in a single search

   Produces only educational results hand-catalogued by educators and librarians

4. **About Illuminations**
   Background information

   Quick links to Speakers Kit, articles and overview videos

5. **NCTM Standards**
   Summaries of what mathematics students should learn by the end of grades 2, 5, 8 and 12

   Guidelines for teaching mathematics

   Guidelines for assessing student progress

6. **Guided Tour**
   Multimedia overview of the site

7. **Contact Us**
   Online comments/feedback form

   E-mail link for questions

8. **Technical Help**
   Information and links for optimal use of site.

   Topics include: Internet Browsers, Quick Time, Download Help, Acrobat for Printing, and Java

9. **Link to Us**
   Linking guidelines

   Linking instructions

10. **Lesson Plans**
    i-Plan: Internet-based Multi-day Lesson Plan (sequenced learning activities)

    i-ME: Internet Mathematics Excursion (single-day learning activity built around an Internet resource)

    i-Pub: Internet-enhanced lesson from an NCTM publication (sample of classroom-useful materials from NCTM's journals and books)

    Model lessons such as "Shedding Light on the Subject: Function Models of Light Decay"

11. **Selected Web Resources**
    Illuminations-reviewed resources

    Sortable by topic and grade level

    Expert panel ranking guide (promising, recommended or exemplary)

12. **Interactive Math Tools**
    Useful for exploring math and creating interactive lessons

    Downloadable if used by individuals for educational, non-profit purposes and if NCTM Illuminations Project is appropriately credited

13. **i-Math Investigations**
    Online, interactive, multimedia math investigations, including:
    - Interactive math applets such as "Shape Spinner" and "Paper Pool"
    - Student investigations built around the applets
    - Teacher notes and solutions
    - Video clips of selected i-Maths being used in classrooms
    - Sample student work, assessments and teacher reflection activities

14. **Inquiry on Practice**
    Video vignettes to encourage thinking and discussion about teaching and learning mathematics

15. **New Vision**
    Pedagogical philosophy underlying the NCTM standards

16. **Principles and Standards Publications**
    Link to print publication and video on NCTM standards

17. **This Week's Highlight**
    Featured weekly resources

18. **NCTM**
    Link to The National Council of Teachers of Mathematics site

19. **MarcoPolo Button**
    Link to the MarcoPolo site

20. **Terms of Use**
    Policies for using Illuminations Web content

Principles and Standards for School Mathematics

Guiding Principles

1. **Equity.** Excellence in mathematics education requires equity—high expectations and strong support for all students.
2. **Curriculum.** A curriculum is more than a collection of activities: it must be coherent, focused on important mathematics, and well articulated across the grades.
3. **Teaching.** Effective mathematics teaching requires understanding what students know and need to learn and then challenging and supporting them to learn it well.
4. **Learning.** Students must learn mathematics with understanding, actively building new knowledge from experience and prior knowledge.
5. **Assessment.** Assessment should support the learning of important mathematics and furnish useful information to both teachers and students.
6. **Technology.** Technology is essential in teaching and learning mathematics; it influences the mathematics that is taught and enhances students' learning.

Curriculum Standards (pre-K–12)

1. Number and Operations

Instructional programs from prekindergarten through grade 12 should enable all students to—

- Understand numbers, ways of representing numbers, relationships among numbers, and number systems;
- Understand meanings of operations and how they relate to one another;
- Compute fluently and make reasonable estimate

2. Algebra

Instructional programs from prekindergarten through grade 12 should enable all students to—

- Understand patterns, relations, and functions;
- Represent and analyze mathematical situations and structures using algebraic symbols;
- Use mathematical models to represent and understand quantitative relationships;
- Analyze change in various contexts.

3. Geometry

Instructional programs from prekindergarten through grade 12 should enable all students to—

- Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships;
- Specify locations and describe spatial relationships using coordinate geometry and other representational systems;
- Apply transformations and use symmetry to analyze mathematical situations;
- Use visualization, spatial reasoning, and geometric modeling to solve problems.

4. Measurement

Instructional programs from prekindergarten through grade 12 should enable all students to—

- Understand measurable attributes of objects and the units, systems, and processes of measurement;
- Apply appropriate techniques, tools, and formulas to determine measurements.

5. Data Analysis and Probability

Instructional programs from prekindergarten through grade 12 should enable all students to—

- Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them;
- Select and use appropriate statistical methods to analyze data;
- Develop and evaluate inferences and predictions that are based on data;
- Understand and apply basic concepts of probability.

PRINCIPLES AND STANDARDS FOR SCHOOL MATHEMATICS (CONTINUED)

Curriculum Standards (continued)

6. Problem Solving

Instructional programs from prekindergarten through grade 12 should enable all students to—

- Build new mathematical knowledge through problem solving;
- Solve problems that arise in mathematics and in other contexts;
- Apply and adapt a variety of appropriate strategies to solve problems;
- Monitor and reflect on the process of mathematical problem solving.

7. Reasoning and Proof

Instructional programs from prekindergarten through grade 12 should enable all students to—

- Recognize reasoning and proof as fundamental aspects of mathematics;
- Make and investigate mathematical conjectures;
- Develop and evaluate mathematical arguments and proofs;
- Select and use various types of reasoning and methods of proof.

8. Communication

Instructional programs from prekindergarten through grade 12 should enable all students to—

- Organize and consolidate their mathematical thinking through communication;
- Communicate their mathematical thinking coherently and clearly to peers, teachers, and others;
- Analyze and evaluate the mathematical thinking and strategies of others;
- Use the language of mathematics to express mathematical ideas precisely.

9. Connections

Instructional programs from prekindergarten through grade 12 should enable all students to—

- Recognize and use connections among mathematical ideas;
- Understand how mathematical ideas interconnect and build on one another to produce a coherent whole;
- Recognize and apply mathematics in contexts outside of mathematics.

10. Representation

Instructional programs from prekindergarten through grade 12 should enable all students to—

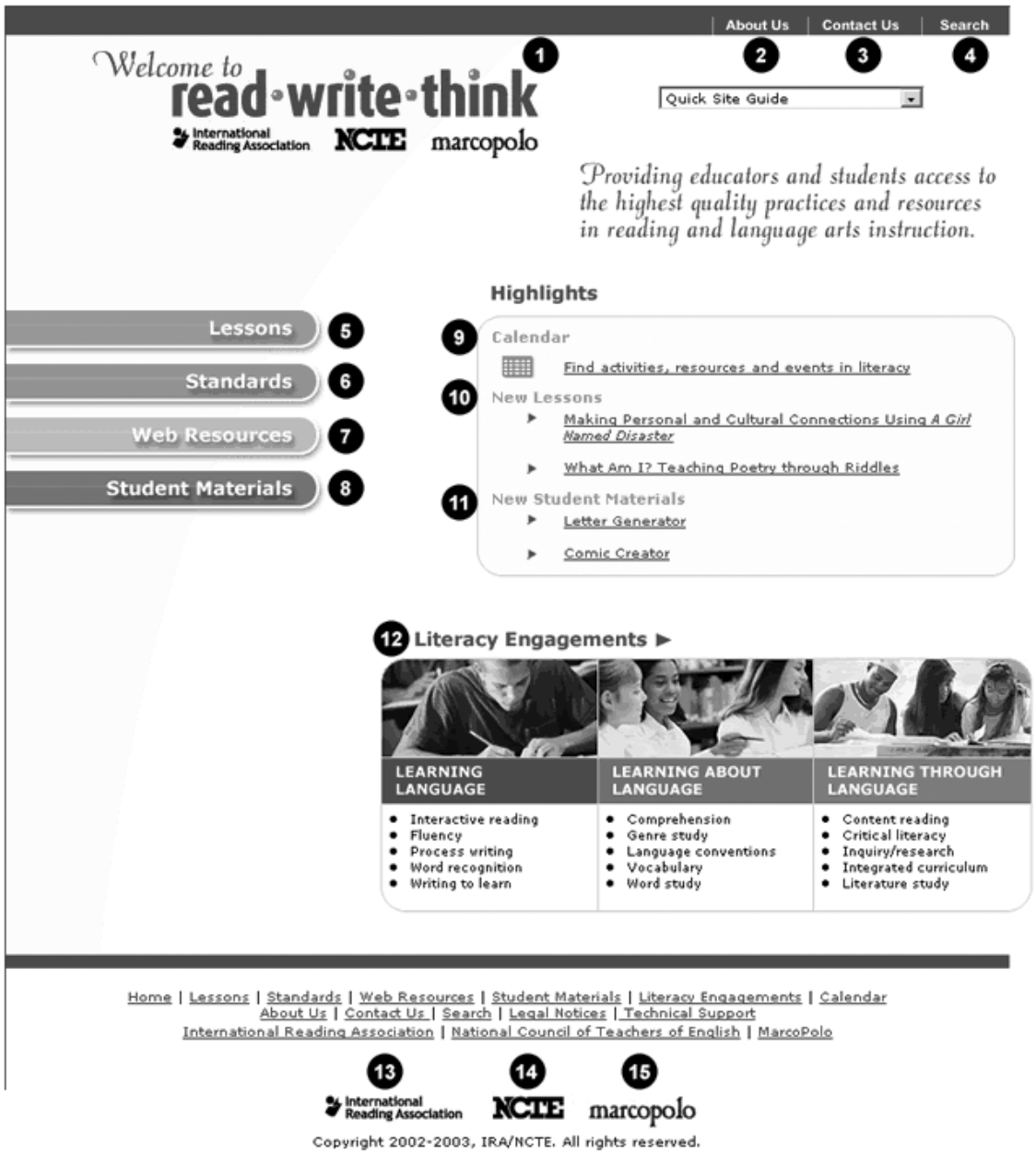
- Create and use representations to organize, record, and communicate mathematical ideas;
- Select, apply, and translate among mathematical representations to solve problems;
- Use representations to model and interpret physical, social, and mathematical phenomena.

read·write·think

International Reading Association NCTE marcopolo

http://www.readwritethink.org/

A partnership between the International Reading Association and The National Council of Teachers of English.



1. **ReadWriteThink Logo**
   Created by the International Reading Association and The National Council of Teachers of English

   Designed to showcase standards-based, online reading and language arts resources for K–12 educators and students

   Located at http://www.readwritethink.org

2. **About ReadWriteThink**
   Detailed information about:
   - ReadWriteThink Partners (IRA and NCTE)
   - Site Features
   - Review Panel
   - Advisory Board

3. **Contact Us**
   Contact Us to offer feedback to help improve the site

   Take the Web site survey

4. **Search**
   Search ReadWriteThink and all MarcoPolo Content Partner Sites in a single search

   Produces only educational results hand-catalogued by educators and librarians

5. **Lessons**
   All ReadWriteThink lessons are written and reviewed by educators

   Each lesson illustrates the connection between theory and classroom practice; provides student objectives, a detailed instructional plan and appropriate student assessments; incorporates student interactives and Web resources; encourages users to provide feedback about the lesson; and allows users to e-mail the lesson to a friend

   The Lesson Index can be sorted by lesson title, grade level, literacy strand and date

6. **Standards**
   Lessons are aligned to the 12 IRA/NCTE Standards for the English Language Arts

   The vision guiding these standards is that all students must have the opportunities and resources to develop the language skills they need to pursue life's goals and to participate fully as informed, productive members of society

7. **Web Resources**
   Links to a myriad of useful English language arts and reading resources reviewed by the ReadWriteThink Web Resources Review Panel

   Resource types include Instructional Resources, Professional Development Resources, Reference Resources and Student Resources

   Each Web Resource includes an annotation and a direct link to the resource

   Resources can be sorted by grade band and resource type

8. **Student Materials**
   Access a collection of online Student Materials to support literacy learning in the K–12 classroom

   These interactive tools can be used to supplement a variety of lessons and provide an opportunity for students to use technology while developing their literacy skills

   Find a detailed description of the tool, a direct link to the tool and a list of ReadWriteThink lessons that use the tool

9. **Calendar**
   The Calendar features lessons, Web resources and classroom activities associated with important events in literacy

10. **New Lessons**
    Access new lessons posted regularly to the site

11. **New Student Materials**
    Access the newest, interactive Student Materials posted to the site

12. **Literacy Engagements**
    Students engaged in authentic and meaningful language learning are simultaneously involved in learning language (as they listen to it and use it with others in their everyday lives), learning about language (as they try to figure out how it works, engage with their teachers in focused instruction on how it works or in critiquing its impact) and learning through language (as they use it to learn about or do something). Halliday, 1982

    Each ReadWriteThink lesson meets at least one Literacy Engagement

13. **IRA Logo**
    Allows users to access the International Reading Association site

14. **NCTE Logo**
    Allows users to access The National Council of Teachers of English site

15. **MarcoPolo Logo**
    Allows users to access the MarcoPolo site

IRA/NCTE Standards for the English Language Arts

The vision guiding these standards is that all students must have the opportunities and resources to develop the language skills they need to pursue life's goals and to participate fully as informed, productive members of society. These standards assume that literacy growth begins before children enter school as they experience and experiment with literacy activities—reading and writing, and associating spoken words with their graphic representations. Recognizing this fact, these standards encourage the development of curriculum and instruction that make productive use of the emerging literacy abilities that children bring to school. Furthermore, the standards provide ample room for the innovation and creativity essential to teaching and learning. They are not prescriptions for particular curriculum or instruction.

1. Students read a wide range of print and nonprint texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works.

2. Students read a wide range of literature from many periods in many genres to build an understanding of the many dimensions (e.g., philosophical, ethical, aesthetic) of human experience.

3. Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies, and their understanding of textual features (e.g., sound-letter correspondence, sentence structure, context, graphics).

4. Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.

5. Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.

6. Students apply knowledge of language structure, language conventions (e.g., spelling and punctuation), media techniques, figurative language, and genre to create, critique, and discuss print and nonprint texts.

7. Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources (e.g., print and nonprint texts, artifacts, people) to communicate their discoveries in ways that suit their purpose and audience.

8. Students use a variety of technological and information resources (e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge.

9. Students develop an understanding of and respect for diversity in language use, patterns, and dialects across cultures, ethnic groups, geographic regions, and social roles.

10. Students whose first language is not English make use of their first language to develop competency in the English language arts and to develop understanding of content across the curriculum.

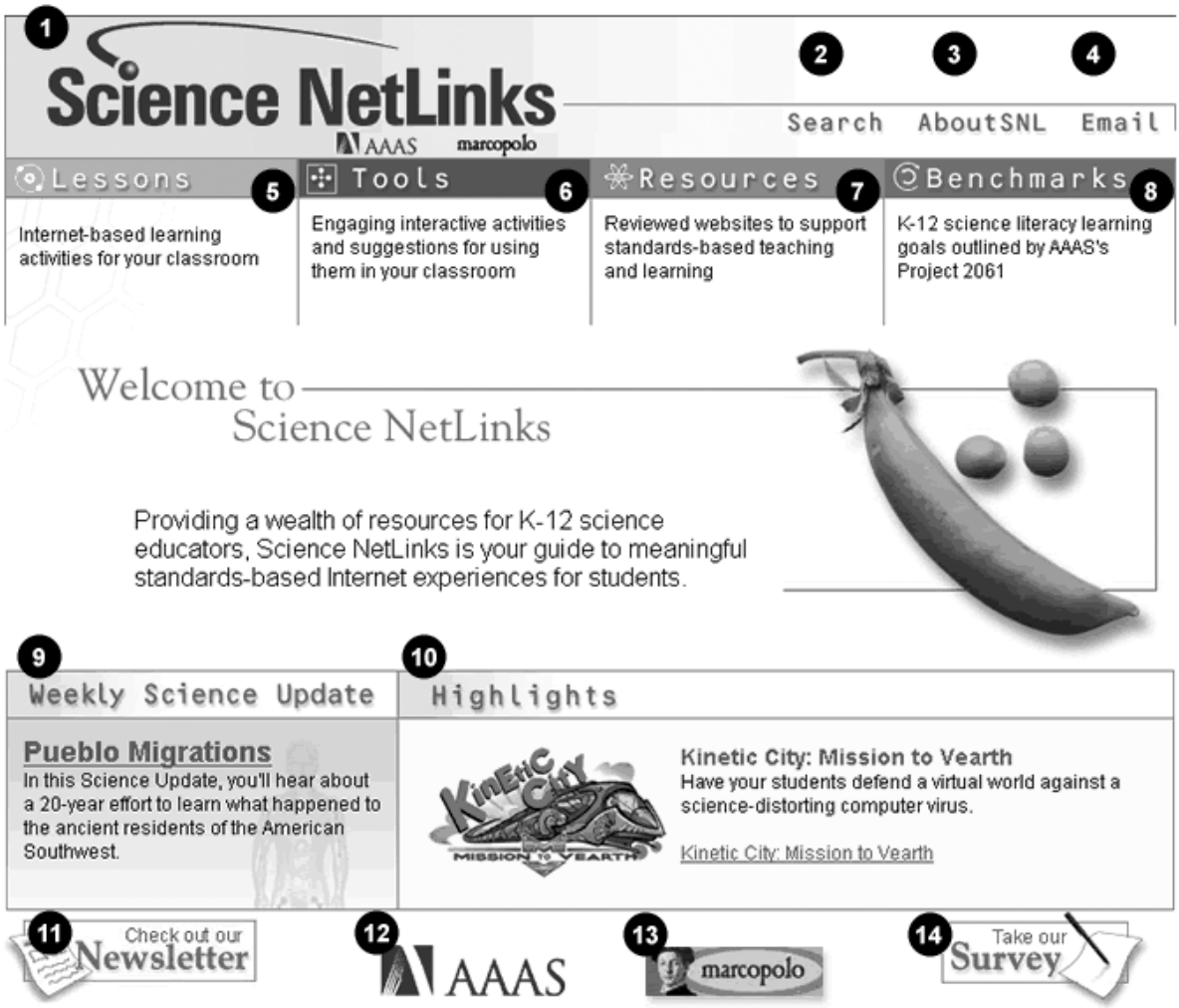
11. Students participate as knowledgeable, reflective, creative, and critical members of a variety of literacy communities.

12. Students use spoken, written, and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion, and the exchange of information).

Science NetLinks
AAAS marcopolo

www.sciencenetlinks.com

American Association for the Advancement of Science (AAAS)



1. **Science NetLinks Logo**
   Created by the American Association for the Advancement of Science

   Designed to showcase standards-based, online resources for K–12 educators and students

   Located at http://www.sciencenetlinks.com

2. **Search**
   Searches across Science NetLinks and all MarcoPolo Content Partner Sites in a single search

   Produces only educational results hand-catalogued by educators and librarians

3. **About ScienceNetLinks**
   Overview of site features

   Information about plug-ins

   Science NetLinks Newsletter subscription link

   List of SNL team members and lesson writers

4. **E-mail**
   Enables comments/feedback

   Allows users to ask a question

5. **Lessons**
   Aligned to at least one specific learning goal

   Incorporate research-based instructional strategies that support student learning

   Sortable by lesson title, grade level and Benchmark

   Feature student-ready materials:

   - Student Sheets (student reproducibles)

   - E-Sheets (online worksheet)

   Include a Send Us Feedback button, as well as an E-mail This Lesson button

6. **Tools**
   Tools

7. **Resources**
   Web sites that are reviewed by scientists and science educators

   Benchmark and grade-level search options

8. **Benchmarks**
   K–12 Benchmarks for Science Literacy developed by AAAS' Project 2061

   Outline of learning goals to be targeted at certain grade levels

   90% of the National Science Education Standards are shared by AAAS Benchmarks

9. **Weekly Science Update**
   Audio features highlighting the latest in science research such as "Barbie Legs" and "Paper Paleontology"

   Suggestions for using each in a K–12 classroom

   Science Update Index

10. **Highlights**
    Showcase of featured content

11. **AAAS Button**
    Allows users to access the American Association for the Advancement of Science site

12. **MarcoPolo Button**
    Allows users to return to the MarcoPolo site at any time

    Accessible at the bottom of every page

13. **Take Our Survey**
    Survey helps to shape the site

    Teachers are the final arbiters

14. **Science NetLinks Newsletter**
    Newsletter features of classroom ideas, lessons, activities and new resources

    Science education news

Benchmarks for Science Literacy

Topics and Subtopics

1. **The Nature of Science**
   - The Scientific World View
   - Scientific Inquiry
   - The Scientific Enterprise

2. **The Nature of Mathematics**
   - Patterns and Relationships
   - Mathematics, Science and Technology
   - Mathematical Inquiry

3. **The Nature of Technology**
   - Technology and Science
   - Design and Systems
   - Issues in Technology

4. **The Physical Setting**
   - The Universe
   - The Earth
   - Processes That Shape the Earth
   - Structure of Matter
   - Energy Transformations
   - Motion
   - Forces of Nature

5. **The Living Environment**
   - Diversity of Life
   - Heredity
   - Cells
   - Interdependence of Life
   - Flow of Matter and Energy
   - Evolution of Life

6. **The Human Organism**
   - Human Identity
   - Human Development
   - Basic Functions
   - Learning
   - Physical Health
   - Mental Health

7. **Human Society**
   - Cultural Effects on Behavior
   - Group Behavior
   - Social Change
   - Social Trade-Offs
   - Political and Economic Systems
   - Social Conflict
   - Global Interdependence

8. **The Designed World**
   - Agriculture
   - Materials and Manufacturing
   - Energy Sources and Use
   - Communication
   - Information Processing
   - Health Technology

9. **The Mathematical World**
   - Numbers
   - Symbolic Relationships
   - Shapes
   - Uncertainty
   - Reasoning

10. **Historical Perspectives**
    - Displacing the Earth from the Center of the Universe
    - Uniting the Heavens and Earth
    - Relating Matter and Energy, and Time and Space
    - Extending Time
    - Moving the Continents
    - Understanding Fire
    - Splitting the Atom
    - Explaining the Diversity of Life
    - Discovering Germs
    - Harnessing Power

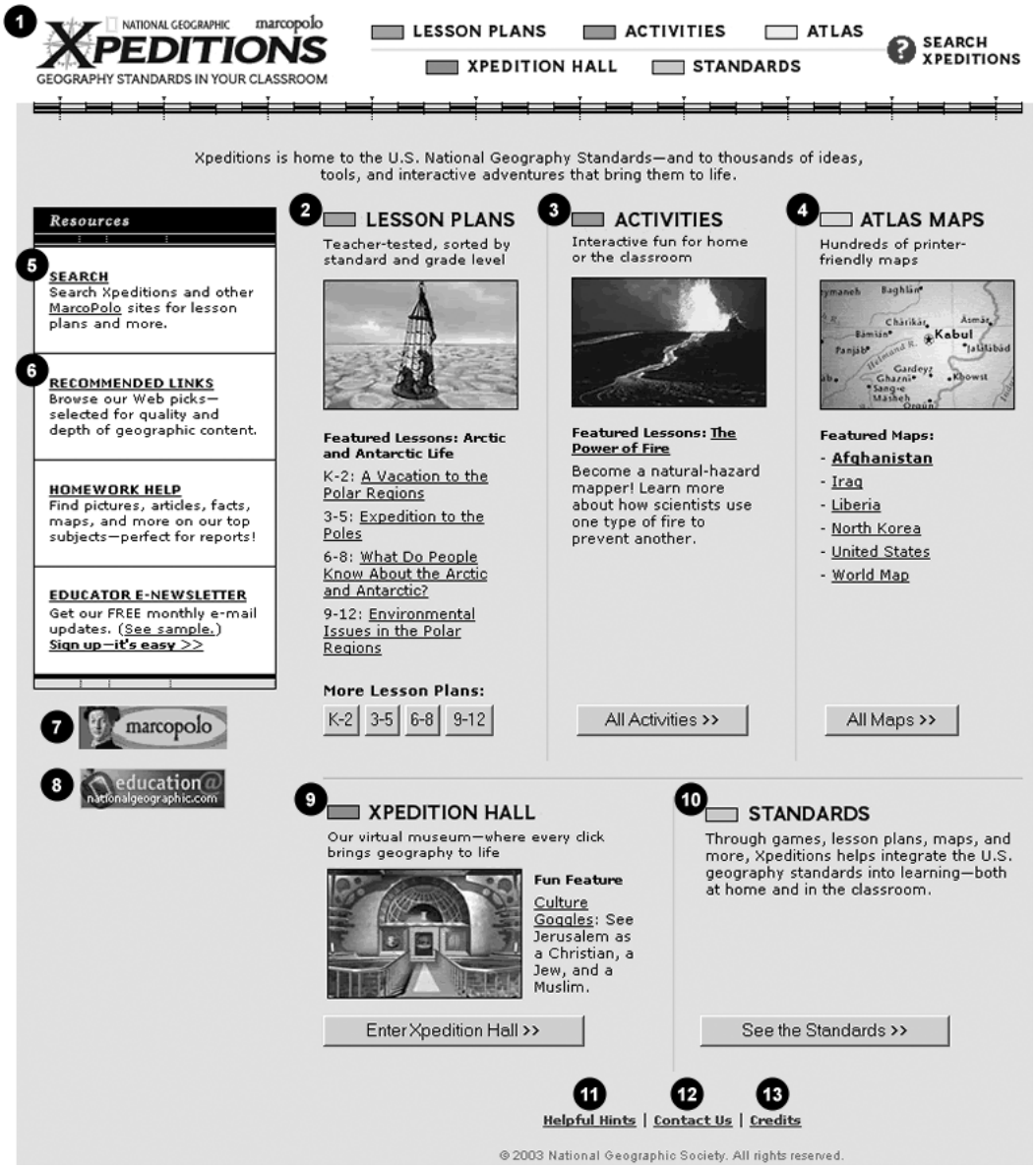
11. **Common Themes**
    - Systems
    - Models
    - Constancy and Change
    - Scale

12. **Habits of Mind**
    - Values and Attitudes
    - Computation and Estimation
    - Manipulation and Observation
    - Communication Skills
    - Critical-Response Skills

NATIONAL GEOGRAPHIC marcopolo
XPEDITIONS

www.nationalgeographic.com/xpeditions

National Geographic Society



1. **Xpeditions Logo**
   Created by the National Geographic Society

   Built for the specific needs of teachers who use, or are learning to use, the National Geography Standards

   Located at http://www.nationalgeographic.com/xpeditions

2. **Lesson Plans**
   Standards-based lesson plans with related student activities

   Sortable by:

   - Lesson title

   - Standard

   - Grade band

   E-mail to a Friend link

   Model lessons such as "Greeting Friends from Other Places" and "Was the United States Ready for Pearl Harbor?"

3. **Activities**
   Standards-based activities for both in-class and at-home use

   Photo galleries for most student activities

   Maps, games, stories, Web sites and interactive features complete these student-centered geography missions

   Related lesson plans

   Sortable by title and standard

   E-mail to a Friend link

4. **Atlas**
   Over 1,600 up-to-date maps available

   Free and downloadable for educators

   GIF format available for PowerPoint presentations, projectors or Web pages

   PDF format available for ease of printing in a standard format

5. **Search**
   Searches Xpeditions and all MarcoPolo Content Partner Sites in a single search

   Produces only educational results hand-catalogued by educators and librarians

6. **Recommended Links**
   Recommended Blue-ribbon links represent the best destinations online for teaching and learning about geography

   Links are selected by a panel of geography education experts

7. **MarcoPolo Button**
   Allows users to return to the MarcoPolo site

   Accessible at the bottom of every content-based page

8. **NG Education Button**
   Allows users to access the National Geographic Education site

   Accessible at the bottom of every content-based page

9. **Xpedition Hall**
   An interactive virtual museum with exhibits for each of the 18 geography standards, such as "Culture Goggles"

   Related lesson plans with each virtual exhibit

   Xpedition Hall Teacher's Guide

10. **Standards**
    18 U.S. National Geography Standards designed to help students to see, understand and appreciate the web of relationships between people, places and environments

    Standards divided into elements such as "The World in Spatial Terms" and "Human Systems"

11. **Helpful Hints**
    Effective ways to navigate and use the site

    Frequently asked questions, including troubleshooting questions

12. **Contact Us**
    Nationalgeographic.com contact information

    E-mail links to ask questions

13. **Credits**
    List of Xpeditions creators and contributors

    E-mail link to site producer

National Geography Standards

The World in Spatial Terms

1. How to Use Maps and Other Geographic Representations, Tools and Technologies to Acquire, Process and Report Information from a Spatial Perspective
2. How to Use Mental Maps to Organize Information about People, Places and Environments in a Spatial Context
3. How to Analyze the Spatial Organization of People, Places and Environments on Earth's Surface

Places and Regions

4. The Physical and Human Characteristics of Places
5. That People Create Regions to Interpret Earth's Complexity
6. How Culture and Experience Influence People's Perceptions of Places and Regions

Physical Systems

7. The Physical Processes That Shape the Patterns of Earth's Surface
8. The Characteristics and Spatial Distribution of Ecosystems on Earth's Surface

Human Systems

9. The Characteristics, Distribution and Migration of Human Populations on Earth's Surface
10. The Characteristics, Distribution and Complexity of Earth's Cultural Mosaics
11. The Patterns and Networks of Economic Interdependence on Earth's Surface
12. The Processes, Patterns and Functions of Human Settlement
13. How the Forces of Cooperation and Conflict Among People Influence the Division and Control of Earth's Surface

Environment and Society

14. How Human Actions Modify the Physical Environment
15. How Physical Systems Affect Human Systems
16. The Changes That Occur in the Meaning, Use, Distribution and Importance of Resources

The Uses of Geography

17. How to Apply Geography to Interpret the Past
18. How to Apply Geography to Interpret the Present and Plan for the Future

Web Site Review Worksheet

You've taken the tour of MarcoPolo's Content Partner Web sites. Now go behind the scenes. Explore one Content Partner site in depth. Test the links and load times. Find out what's really there. Use this review chart to record your personal observations, impressions and opinions. Then share your assessment of the site with the full group.

A Review of

Organization and Design

Was it easy to find your way around the site?

❑ **Very Easy** ❑ **Fairly Easy** ❑ **Average** ❑ **Fairly Hard** ❑ **Very Hard**

Are the page layouts easy to read and easy to follow?

❑ **Very Easy** ❑ **Fairly Easy** ❑ **Average** ❑ **Fairly Hard** ❑ **Very Hard**

How about the links and load times—fast enough?

❑ **Very Fast** ❑ **Fairly Fast** ❑ **Average** ❑ **Fairly Slow** ❑ **Very Slow**

What would you tell a colleague about the site's organization and design?

Features

Which area or feature of the site did you find most valuable? Why?

Which area or feature of the site did you find least valuable? Why?

Describe an improvement you would add to the site. Why?

Content

Does the content seem relevant to your curriculum standards? Explain.

Does the content seem classroom-ready? Give examples.

Describe three outstanding resources that you think other teachers should know about.

1.

2.

3.

For Teachers

What will you tell your colleagues about this site?

What will your colleagues tell you after they visit it?

For Students

How would you have students use the site?

What will your students say about the site after they use it?

Web Site Report Worksheet

This form is designed for groups that prefer to explore the MarcoPolo Content Partner sites on their own rather than take a guided tour. Work in teams to prepare a report on each site, following the plan outlined here. Be sure to bookmark key features of your site so that you can present it effectively to the full group.

Site Name:

URL:

Subject Area(s):

Key Site Features	
Description	**Value**
1.	For teachers: For students:
2.	For teachers: For students:
3.	For teachers: For students:
4.	For teachers: For students:
5.	For teachers: For students:

General Assessment
Operation and Design 1. Easy to navigate?
2. Easy to locate information?
3. Attractive?
4. Load times?
5. Other
Educational Value 1. Quality of content
2. Relevance to the curriculum
3. Links
4. Lesson plans

PART 4: LESSON DEVELOPMENT WITH *INTERNET CONTENT FOR THE CLASSROOM*

Time Required: 1.5–7.5 hours (adjustable by trainer)

Objectives:
- To outline various types of Internet content and strategies for integrating *Internet Content for the Classroom* (ICFC) into the curriculum.
- To explore the use of *Internet Content for the Classroom* in core subject areas across the curriculum through case studies of sample lesson plans.
- To use *Internet Content for the Classroom* to gain hands-on experience developing standards-based lesson plans.

Handouts:

Summary

This part of the training program focuses on practical ways to integrate *Internet Content for the Classroom* into the curriculum, offering participants an opportunity to create standards-based lesson plans on their own. Participants first review a framework that outlines various types of Internet content and several strategies for integrating *Internet Content for the Classroom* into the curriculum. In an optional section, participants examine a relevant sample lesson plan drawn from one of the MarcoPolo Content Partner sites, using the case study method to see how *Internet Content for the Classroom* can be integrated into a specific part of the curriculum. The 12 sample lesson plans presented in this section provide material for up to 6 hours of training. Finally, participants work in teams to develop their own standards-based lesson plans using MarcoPolo *Internet Content for the Classroom*.

Presentation Options

There are 12 case studies provided for Section 2, the optional section of this part of the training program. As indicated in the chart below, each case study requires 30–45 minutes. Use the chart to plan your training schedule accordingly.

30 minutes	30–45 minutes	At least 1 hour
Section 1 Discussion of framework for integrating Internet content	Section 2 (optional) Case study of one sample lesson plan	Section 3 Workshop on creating lesson plans with ICFC

Training Tips

- **Customize for your group.**
  For many participants, this will be the most practical part of the training program, the time when they get to try their hand at creating a lesson with ICFC. That's why you should plan to make this part of the program as hands-on as possible. Customize it to the needs and interests of your group by choosing elements that have a practical application to their professional lives.

  This is especially important with regard to your choice of sample lesson plans for use as case studies in Section 2. Teachers are looking for "content-specific tools," as one trainer phrased it,

Training Tips (continued)

and may not recognize the value of a tool when it is applied to content outside their subject area or inappropriate to their grade level. To help you avoid this kind of mismatch, Section 2 provides 12 sample lesson plans, covering five core subject areas at various grade levels. If you are uncertain which sample is most relevant for your group, leave the choice up to them.

Customizing this part of the program can also mean adjusting your presentation to match your group's learning style. If they are eager to begin lesson planning with ICFC, omit the optional section and devote most of your training time to developing the group's own detailed lesson plans. If they seem hesitant, use the case studies in Section 2 as a warm-up. But be prepared to change your plan as the session proceeds so that your presentation is always attuned to the interests and needs of your group.

- **Focus on hands-on rather than how-to.**
  Ideally, this part of the training program will involve little lecturing. Participants will come from their exploration of the MarcoPolo Content Partner sites in Part 3 eager to start planning how they will integrate this high-quality content in class. Realistically, however, you will probably have to take the lead at least part of the time and should plan how you will keep your group engaged. As you talk about the different types of Internet content, for instance, ask participants to give—or find—examples on MarcoPolo. If you study a sample lesson plan, have participants try out the activities. Throughout this part of the training program, establish an atmosphere of hands-on involvement that will steer your group toward enthusiasm for putting together a lesson plan that is relevant to their curriculum.

- **Aim for concrete results.**
  According to teachers, one mark of a good training session is that you walk away with something you can try out in class the next day. This part of the program is where you can hit that mark.

  - As you present Section 1, ask participants how they could use the different types of content outlined in the framework. Create a chart based on the framework to help participants see the resemblance between Internet content and conventional teaching resources. Ask, for example, what type of Internet content is similar to a workbook (Learning Activity), a documentary video (Online Presentation) or a field trip (Internet Excursion). Encourage participants to make their own comparisons, and follow up by asking how they might use a specific type of Internet content in place of or as a supplement to its conventional equivalent.

  - If you present Section 2, have participants suggest ways they could adapt a sample lesson plan to meet their own curricular needs. Ask, for example:
    - What could you borrow from this lesson plan for use with older (or younger) students?
    - What other topics could you teach using this lesson plan's approach?
    - What parts of this lesson plan could you use in a classroom with more (or fewer, or no) computers?
    - How could you refashion this lesson plan to fit a shorter (or longer) time allotment?

Training Tips (continued)

- When participants present their lesson plans in Section 3, encourage discussion of alternative ways to use the content they have selected. Again, use a chart to highlight the variety of concrete possibilities and to encourage brainstorming. In groups that develop lesson plans on American architecture, for example, tabulate the possible uses of a resource like the *Medieval New York* Web site* in classes across the curriculum.

Medieval New York Across the Curriculum www.fordham.edu/halsall/med/medny.html
Art: provides examples of medieval architectural styles
History: shows the influence of immigrant artisans from Europe
Civics: reflects American values in the use of cathedral designs for libraries
Science: illustrates modern engineering solutions to medieval construction problems
Geography: highlights the influence of location and available resources on how people live

In short, throughout this part of the program, encourage your group to identify practical applications of *Internet Content for the Classroom* and to be on the lookout for ideas they can try out immediately in class.

- **Integrate standards.**
  Curriculum standards are a practical concern for teachers and should be emphasized in this practical part of the program. MarcoPolo, of course, addresses this concern by providing standards-based content. But the national standards endorsed by the MarcoPolo Content Partners are often one step removed from the state and local standards teachers must observe. Close this gap by having participants access their state or local standards online.
  - The Putnam Valley Central Schools provide an index of state standards at http://estandards.org/standards.html. A link to this site is available in the Standards section of the Reference Shelf area at EDSITEment.
  - Achieve.org provides a searchable database of state standards in English, mathematics, science, and social studies at http://www.aligntoachieve.org/AchievePhasell/basic-search.cfm. A link to this site is available in the Standards section of the Reference Shelf area at EDSITEment and in the Standards section of the Professional Resources area at ArtsEdge.

  If you present Section 2, use these links to have participants correlate standards outlined in the sample lesson plans with the relevant grade-level standards for their own school system. If time permits, compare the two sets of standards to note where they are compatible and where teachers might have to bridge a gap. Work as a group to refashion the lesson plan's standards outline so that it conforms to local standards.

  In Section 3, have participants use these standards index links to outline grade-appropriate standards for their own lesson plans. Then follow up in the group's discussion by asking participants to explain in specific terms how their lesson plans empower students to achieve the listed standards. Use this opportunity to highlight the advantage of building a lesson plan around standards-based content, such as that available through MarcoPolo.
- **Incorporate desktop software extensions.**
  In the notes for each case study in Section 2, you will find ideas for connecting *Internet Content*

*This Web site can be accessed through the *Internet Medieval Sourcebook* Web site on EDSITEment. Lesson plans associated with the *Medieval New York* Web site were not created by EDSITEment.

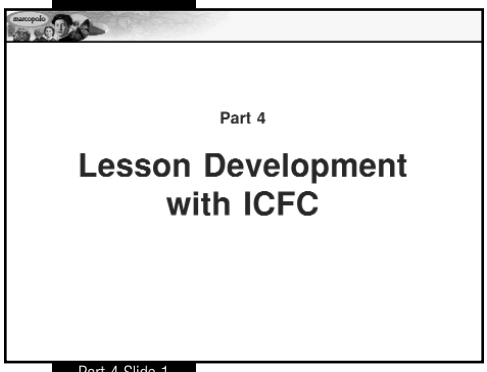
Training Tips (continued)

for the Classroom to word processors, spreadsheets and other desktop applications. Use these ideas as a springboard for brainstorming additional ways to incorporate desktop software into Web-based learning. For example:

- **Literature:** Students can use the Find command of a word processor to trace occurrences of a key word, thematic phrase or image cluster in a short story or novel copied from the Internet.
- **History:** Students can use graphics and page layout software to create their own newspapers headlining a landmark event, drawing on MarcoPolo Web sites for images and quotations from primary sources.
- **Science:** Students can use presentation software to create a multimedia lab report, enhanced by background information and illustrations discovered online.
- **Mathematics:** Students can use database and spreadsheet software to combine statistics with media literacy by conducting a survey of online reports on a controversial topic that catalogues and quantifies the impact of loaded terms.

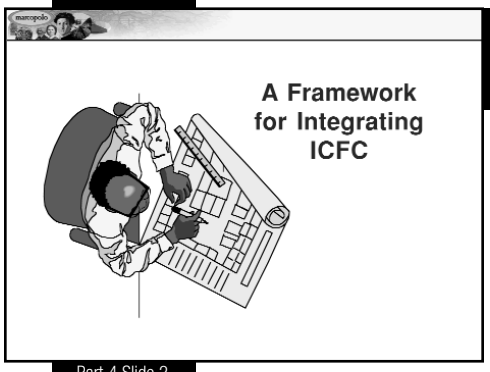
Continue this brainstorming in the group's discussion of their own lesson plans, encouraging participants to begin thinking of the classroom as a computer-based environment comparable to the typical workplace in our world today.

- If you experience slow or even nonexistent Internet connectivity during a training session, you may want to use the MarcoPolo Training CD-ROM, which houses an offline interactive version of the Framework for Integrating ICFC discussed in Section 1 and offline versions of the case study lessons included in Section 2. These resources are included online as well at the MarcoPolo Trainer Resource Center (http://www.marcopolo-education.org/pd/ftrc.aspx).



Part 4 Slide 1

1. Explain to participants that this part of the training program focuses on integrating *Internet Content for the Classroom* into the curriculum. Now that they have seen all the resources MarcoPolo has to offer, they'll have a chance to use these resources by creating lesson plans that meet their curricular needs.



Part 4 Slide 2

Section 1
A Framework for Integrating Internet Content

2. As an introduction, offer participants a framework for integrating *Internet Content for the Classroom* into the curriculum.

3. Begin by acknowledging that a quick tour of the MarcoPolo Content Partner sites may have left them with the impression that there is such a wide variety of resources on the Internet, it could be a life's work for a teacher to sort them all out and choose the right ones.

4. Explain that once you begin working with Internet resources, it turns out they can be sorted into a few basic categories based on how they function in the classroom.

Handout 4-1 ▶

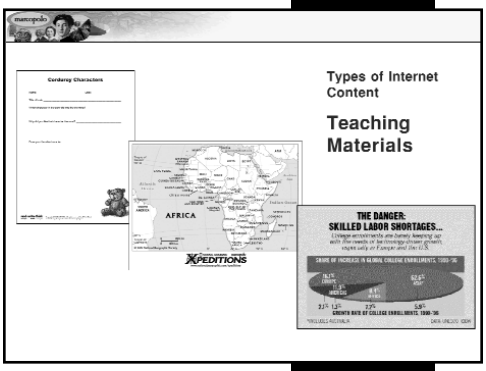
- Pass out the Framework for Integrating ICFC **(Handout 4-1)** and review the types of resources described there.
- Examples of each type of content are provided in the slide presentation. Ask participants to cite additional examples that they may have found while exploring one of the MarcoPolo Content Partner sites, and encourage further discussion about how each type can be used in class.

TYPES OF INTERNET CONTENT

Teaching Materials

5. Portable content in reproducible formats: maps, charts, tables, graphs, timelines, images, articles, archival documents, datasets, worksheets, activities and handouts.

- The map of Africa can be found in the Atlas area at Xpeditions. A teacher could use it within a history unit on the Age of Discovery or the Middle Passage, or as part of an Earth science lesson on plate tectonics.
- The chart on skilled labor shortages is part of an EconomicsMinute lesson on the new economy at EconEdLink. A teacher could also use it in a geography lesson comparing teenagers in different parts of the world or in a mathematics class on graphing.
- The worksheet on Corduroy Bear is part of a K–2 lesson on ReadWriteThink. This worksheet can be used to help students think and write about Corduroy books.

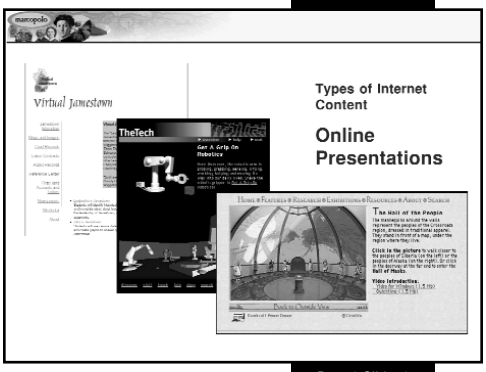


Part 4 Slide 3

Online Presentations

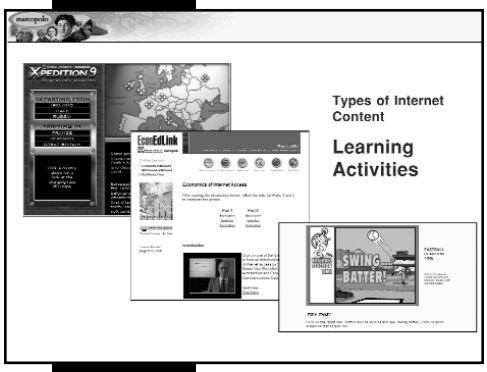
6. Information delivered in an interactive format: online exhibits, guided tours, documentaries, slide shows, demonstrations, videos, audioclips and multimedia hypertexts.

- *Virtual Jamestown,* a Web site featured on EDSITEment, combines primary source materials and historical reconstructions to give students a glimpse into the experience of the first English settlers in the New World. A teacher could use it as background for a unit on the colonial era or as the centerpiece of an extended research project.
- "Get a Grip on Robotics" is an exhibit at *The Tech Museum of Innovation* Web site, one of the Educational Super Sites at Science NetLinks. A teacher could use this animated, interactive presentation on the robotic arm within a unit on "smart" technology or as part of a history unit exploring the "John Henry" impulse that pits man against the machine.



Part 4 Slide 4

- The Hall of the People is part of a virtual museum at the Arctic Studies Center at the *Smithsonian Institution* Web site on EDSITEment. Here students can explore the mingled traditions that link the people of the Arctic across the Bering Strait. A teacher could use this exhibit in a unit on Native American history or as part of a geography unit on the influence of location and available resources on the way people live.



Part 4 Slide 5

Learning Activities

7. Content designed to promote discovery, decision making, problem solving and critical thought: multiple-choice games, puzzles and quizzes, fill-in-the-blank forms and calculators, interactive exhibits, simulations, virtual realities and scenarios that guide learners in quest of knowledge.

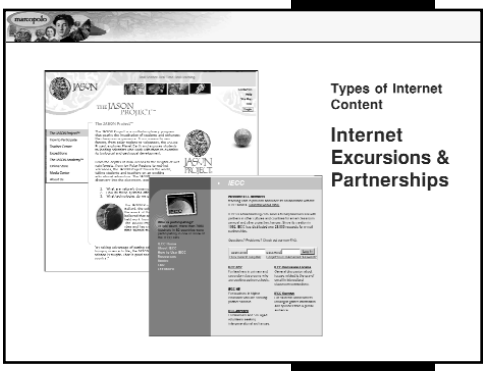
- "The Migration Station" is one of the interactive exhibits within Xpedition Hall at Xpeditions. Here students can trace the westward movement of peoples from Europe to the United States and to Europe from countries to the East. A teacher could use this learning activity to help guide students in the study of their own immigrant heritage, or as part of a unit on the mechanisms of prejudice.
- The example from EconEdLink is the introduction to a NetNewsLine activity on the Economics of Internet Access. Students examine the role that shortages, supply, demand and the rationing function of prices play in the growth of online communications. A teacher could use the activity to reinforce these underlying economic concepts or adapt it for a civics class on the relationship between freedom of speech and the need for telecommunications regulations.
- Fastball Reaction Time is a simulation at the *Exploratorium* Web site that is integrated into a Science NetLinks lesson plan on learning (one of the sample lesson plans included in this part of the training program). At the Exploratorium, this activity is part of an exhibit on the science of baseball and could be used in that context or adapted to generate data for a mathematics class exploring baseball statistics.
- Students of all grades can explore the concept of equivalence using interactive tools found in

Illumination's Equivalence i-Math investigation. Using these tools, students balance weighted shapes, numeric expressions, symbolic expressions and equations—all interactively.

Internet Excursions

8. Programs that link students to an ongoing event—a space mission, a political campaign, an expedition to the Arctic or the bottom of the sea—giving them an opportunity to share in the adventure and share ideas with the adventurers themselves.

- The Jason Project, one of the reviewed links at Xpeditions, is an outgrowth of the undersea explorations of Dr. Robert Ballard, most famous for his discovery of the wreck of the Titanic. Through the project, students and teachers around the world join Ballard and his colleagues as they explore remote islands, study endangered habitats and search for clues to the past on the bottom of the sea. Teachers can participate in the current Jason learning adventure or visit the site for educational materials developed in connection with past expeditions.



Part 4 Slide 6

Internet Partnerships

9. Programs that link students to their peers in other schools and other countries: keypal programs that pair foreign language students across borders, cooperative research programs that gather data from science students around the world, and collaborations organized by individual teachers.

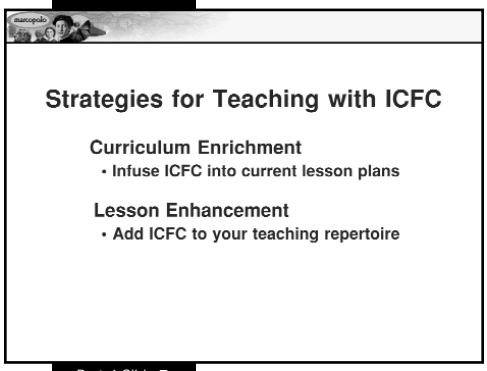
- Intercultural E-mail Classroom Connections is a clearinghouse service that matches students in the United States with "keypals" from around the world. This site is accessible via the ArtsEdge-approved curriculum Web Links section.

10. Complete this introduction by reviewing the teaching strategies outlined on the Framework for Integrating ICFC handout **(Handout 4-1)**.

- Emphasize that these strategies are offered as food for thought, not as recipes for success.
- Encourage participants to come up with their own examples for implementing each strategy in their classrooms.

◀ **Handout 4-1**

STRATEGIES FOR TEACHING WITH *INTERNET CONTENT FOR THE CLASSROOM*



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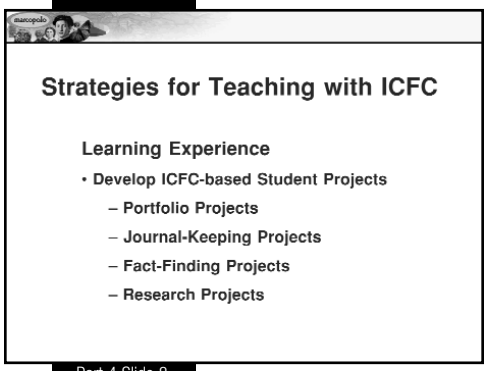
Curriculum Enrichment

11. This strategy incorporates *Internet Content for the Classroom* into conventional classroom practice. It can be as simple as updating a lesson plan with new materials or adding an interactive presentation to a time-tested lecture. Curriculum enrichment can also involve adapting a lesson plan you find online or creating a new lesson plan around resources that were never available before. Rather than develop new teaching methods, use this strategy to increase the "Net-worth" of your current curriculum by infusing *Internet Content for the Classroom*.

Lesson Enhancement

12. This strategy integrates Internet content as an aid to instruction. Instead of showing a video or passing out worksheets, you can use the Internet to set up a learning center where students take a guided tour, experiment with an interactive simulation or work through a problem-solving scenario. In classrooms with multiple computers, resources like these can also become the focus of group work, and in many communities they can serve as the basis for homework assignments as well. Again, this is a strategy for blending Internet content into your current teaching style, although it does require a new approach to lesson planning and perhaps a new level of technical expertise.



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Learning Experience

13. This strategy for using Internet content covers a range of techniques for guiding students through a structured online learning experience. For example:

- **Portfolio Projects:** Send students to a carefully selected set of Web sites where they can collect different kinds of information—images, sounds, quotations, facts and figures—to construct their own view of a subject.
- **Journal-Keeping Projects:** Prepare a series of questions that guide students through a structured sequence of selected Web pages, prompting them to reflect on specific aspects of each page and record their impressions, opinions or observations.

- **Fact-Finding Projects:** Provide students with a short list of questions and a corresponding list of Web sites or Web pages where they can find the answers, in some cases simply by looking carefully and in others by using analysis or deduction.
- **Research Projects:** Instead of (or in addition to) a reading list, provide students with a list of Web sites they should explore in preparing a class report or term paper.

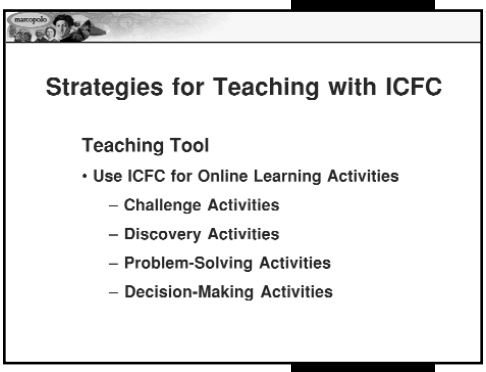
All these techniques, to some degree, involve teaching in a new way that combines the information-gathering power of the Internet with the information-processing power of students' minds, and all involve a new kind of lesson planning that puts the dynamics of learning into students' hands.

Information on guarding against Internet plagiarism is included in the Appendix, page VII.5.

Teaching Tool

14. This strategy involves using *Internet Content for the Classroom* to create inquiry-based online learning activities that build on the Internet's potential as an interactive medium. One can see this potential in its most basic form in the simple point-and-click routine required to navigate the Internet, a constant process of making choices and assessing consequences that leaves some links unexplored and some Web pages unread. On the Internet, a learner can feel that the next mouse click will be an "open sesame" to some unsuspected insight, and it is this captivating power of the medium itself that online learning activities tap into. Some techniques for designing such teaching tools include:

- **Challenge Activities:** Present an opinion or position and provide students with online resources where they can develop evidence to substantiate or refute the claim.
- **Discovery Activities:** Create a mystery or raise a question, and then plot a series of investigations in which students analyze or compare selected online resources to uncover answers for themselves.
- **Problem-Solving Activities:** Create a problem-solving scenario that leads students to a variety of selected online resources where they can acquire background information, gather evidence to evaluate competing points of view and use their critical-thinking abilities to work out a well-reasoned solution.



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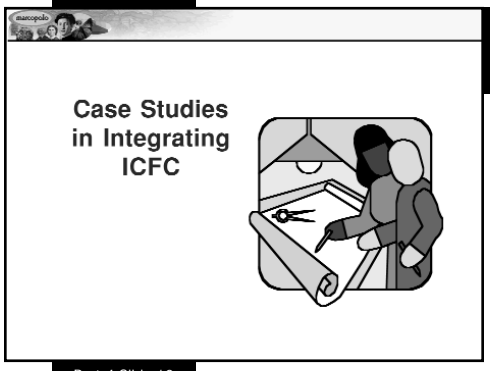
- **Decision-Making Activities:** Create a dilemma or frame a controversy, and then assemble online resources that students explore to gain perspective on the issue, test alternatives and recommend a course of action.

15. Sum up this introduction by explaining that, like most aspects of teaching, integrating *Internet Content for the Classroom* into the curriculum becomes easier with practice. A framework can help you sort out different kinds of content and suggest strategies for using these resources in class, but firsthand experience will lead to better lessons.



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Section 2 (Optional)
Case Studies in Integrating ICFC

16. As a warm-up to developing their lessons plans, have participants conduct a case study to see how *Internet Content for the Classroom* can be integrated into a specific subject area. Pass out Case Study URLs **(Handout 4-2)** and have participants select one case study to examine how types of ICFC are integrated into an actual lesson and, in turn, to discuss teaching strategies for incorporating the case study lesson into the classroom. Note that the case study discussion notes and worksheets on pages IV.16–IV.51 of this Teacher Training Kit are designed for you as a trainer to review prior to the training session. Each set of case study discussion notes and worksheets can be regarded as your "answer key" to help you generate discussion and analysis among participants. Case Study URLs **(Handout 4-2)** will enable you to introduce lessons to analyze.

Handout 4-2 ▶

- The case studies included in this Teacher Training Kit cover five core subject areas and are based on lesson plans from the MarcoPolo Content Partner Web sites.
- You may wish ahead of time to select the case study (or studies) based on your group's background and interests, and use the timings provided in the case study discussion notes to ensure that your choices fit your training schedule.

17. Introduce this section by distributing copies of the Case Study Worksheet **(Handout 4-3)**.

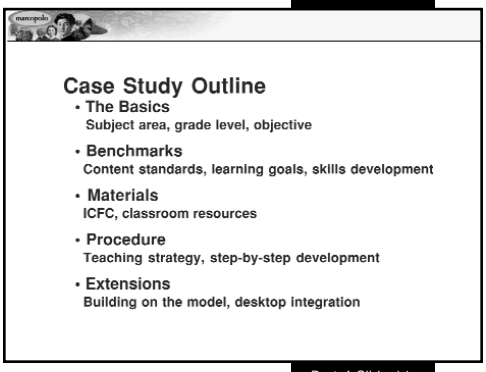
- Explain that participants will use this sheet to analyze a sample lesson plan from one of the MarcoPolo Content Partner Web sites, focusing on the content and strategy choices that went into its development.
- Give participants the Case Study URLs **(Handout 4-2)** and identify the lesson they will be analyzing (or allow participants to select a lesson). Have participants access the lesson on their own computers, working individually or in study teams.
- If you run out of discussion time, you can provide participants with copies of the suggested worksheet responses (pages IV.17–IV.50) at the end of the discussion period.
- If Internet access is limited in your training session, you can lead participants through the case study using a single computer with a projector.

◀ **Handout 4-3**

◀ **Handout 4-2**

18. Review the Case Study Worksheet, pointing out that much of the information it calls for can be drawn directly from the sample lesson plan itself. In effect, participants will be "mapping" the lesson plan to this template in order to see how it is put together and how they might apply the model it provides.

- Remind participants that when they fill out the "Content Standards" section of the worksheet, they can refer to the Standards section in the Professional Resources area at ArtsEdge or the Standards section of the Reference Shelf area at EDSITEment for links to national and state standards documents.
- Call attention to the *"Internet Content for the Classroom"* section of the worksheet. Explain that participants should list here all the Internet content used in the lesson plan and identify what type of content each is, using the terminology of the Framework handout **(Handout 4-1)**.
- Point out that the "Teaching Strategy" section of the worksheet also asks participants to refer to the Framework handout for terms to help them describe how ICFC is used in the lesson.
- Finally, point out that the last section of the worksheet, "Building on the Model," invites participants



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◀ **Handout 4-1**

to think about how they would apply this sample in their own teaching and asks them to sketch a lesson plan they might develop along the same lines.

19. Allow participants approximately 20 minutes to complete this analysis, and then lead a discussion of the sample lesson plan using the discussion notes and the suggested worksheet responses provided for each case study.

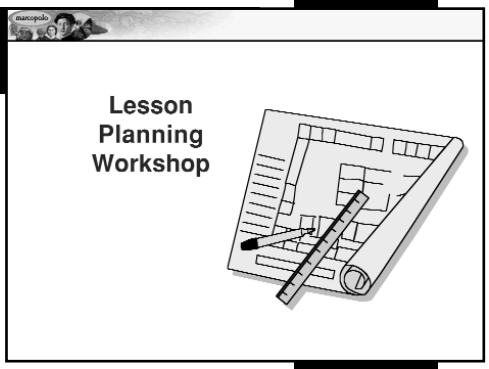
- Focus in particular on the types of ICFC assembled for the lesson plan and how they are integrated into the teaching/learning process.
- If time permits, demonstrate how the lesson plan works by teaching parts of it or by inviting participants to try out parts on the group.
- Use this discussion to help participants recognize the model that underlies the lesson plan and how they might apply this model to other topics within the same subject area and in different subject areas.

20. Extend your case study by asking participants to consider how they might integrate desktop software into the sample lesson plan or into a lesson developed upon this model.

- Use the desktop integration ideas included in the case study discussion notes to illustrate how lesson planning with ICFC can tie online resources to offline learning tools.
- Encourage participants to brainstorm additional ways that students (and teachers) might combine ICFC and desktop software to create a computer-based classroom environment comparable to the typical workplace in our world today.

21. Conclude your case study presentation by encouraging participants to examine lesson plans at all the MarcoPolo Content Partner Web sites for more ideas on integrating Internet content across the curriculum. And remind them that adopting one of the MarcoPolo lesson plans is probably the easiest way to try teaching with Internet resources themselves.

Section 3
Lesson-Planning Workshop



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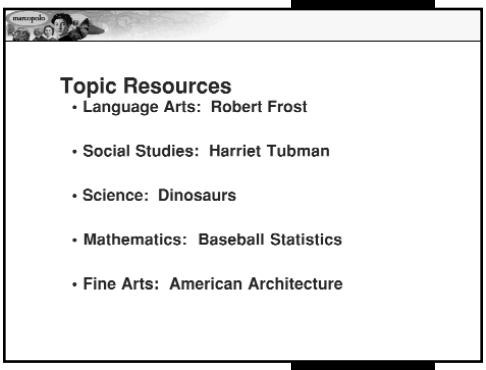
22. Turn to the section of the training program in which participants have an opportunity to create their own standards-based lesson plans using ICFC. Divide your group into lesson-planning teams by putting together participants who teach in the same subject area. Explain that each team can develop a lesson plan on any topic, using any strategy they wish.

23. To help speed the lesson-planning process, teams may choose to work on one of the topics listed on the MarcoPolo Topic Resource List **(Handout 4-4)**, included with this Teacher Training Kit.

- These are topics typically included in the K–12 curriculum at several grade levels on which the MarcoPolo Content Partner sites provide a variety of resources: Robert Frost (language arts), Harriet Tubman (social studies), dinosaurs (science), baseball statistics (mathematics) and American architecture (fine arts).
- Pass out copies of the Topic Resource List to participants and remind them that they can also use the MarcoPolo Search Engine to find additional resources on these topics, or to search for resources on a topic more relevant to their teaching responsibilities.

◀ **Handout 4-4**



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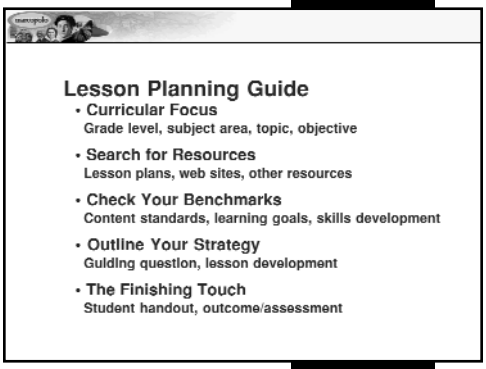
24. Pass out copies of the MarcoPolo Lesson Planning Guide **(Handout 4-5)** and review it briefly, explaining that the guide includes both a worksheet that leads one step by step through the process of developing a standards-based lesson plan and a template that can be used to put the lesson plan in final, polished form. As you review the guide, focus in particular on:

- **Standards Alignment:** Explain that this section has been designed to accommodate the various ways different school systems set curricular requirements and objectives. Ask participants to use this space to align their lesson plan with their own local standards and to indicate in more general terms, if necessary, what students should know (goals) and be able to do (skills) at the end of the lesson. Remind participants that both



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◀ **Handout 4-5**

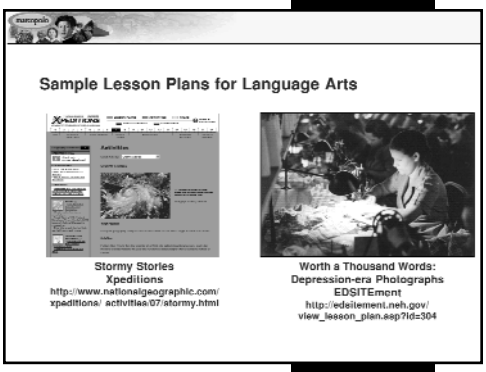
ArtsEdge and EDSITEment provide a link to the Achieve.org searchable database of state standards in English, social studies, science and mathematics (at http://www.aligntoachieve.org/AchievePhasell/basic-search.cfm) and that both Illuminations and EDSITEment provide a link to the Putnam Valley Central Schools index of state standards (at http://estandards.org/standards.htm).

- **Student Handouts:** Explain that participants should outline here the materials students would receive to guide them through the lesson. Remind participants that such materials often provide students with a useful bridge between learning on the Internet and learning offline.

25. When participants have completed their lesson plans, have each team present its lesson to the group for comment and suggestions.

- If time permits, teams can be invited to teach their lessons, with the group taking the role of students.
- Explore any difficulties participants encountered in finding worthwhile content or in shaping an effective lesson plan strategy.
- Encourage participants to talk about the experience of working with Internet content: What new lesson planning skills does it require? What old habits come in handy?
- Conclude by urging participants to refine their lesson plans and test them on real students at the first opportunity.

Case Studies—Language Arts



Part 4 Slide 15

Stormy Stories
Xpeditions
http://www.nationalgeographic.com/xpeditions/activities/07/stormy.html

Training Time: 30 minutes

Discussion Notes
Although designed as a geography lesson, "Stormy Stories" can serve as a model for using *Internet Content for the Classroom* in the language arts curriculum to teach the writing process or research paper.

- **Standards:** Point out that the lesson supports national content standards in geography. Have participants comment on how well the lesson supports their local or state standards in this subject area.
- ***Internet Content for the Classroom:*** Call attention to the different kinds of Internet content combined in the lesson plan: links to reference maps, film-clips, images, simulations and background articles, as well as content created for the lesson itself. Highlight the benefits of bringing such a variety of "texts" into the language arts curriculum.
- **Teaching Strategy:** Talk about the lesson's underlying strategy, noting especially how students are both directed to complete an assignment and free to explore related resources. Suggest that on the Internet students are likely to take advantage of this freedom, since these resources are only a click away.
- **Building on the Model:** Have participants share their ideas for adapting this lesson plan model to other language arts topics. Note that the model can be applied to a variety of writing assignments—research papers, persuasive essays, descriptive essays, paragraph structure assignments, etc. Discuss how the interactive nature of the Internet adds an element of excitement to the model, giving students a tool that makes the old-fashioned drudgery of "cut and paste" into an experience more like solving a puzzle.
- **Desktop Integration:** Note that students can use the "cut and paste" capability of a word processor to sort out the jumbled interview notes and write their accounts of each interview. Students could also download images and "copy and paste" passages of text as they conduct their research online, and then incorporate these materials in their story (with appropriate citation). Finally, students could edit and revise their writing with word processors and perhaps use e-mail to exchange compositions for peer editing.

Case Study Worksheet
(suggested responses)

Lesson Title: Stormy Stories

Subject Area(s): Geography, Science, Language Arts

Grade Level: 6–8

Content Partner Site: Xpeditions

URL: http://www.nationalgeographic.com/xpeditions/activities/07/stormy.html

Objectives
Students learn where and how some major types of natural disasters occur. Students learn how to organize information based on contextual clues and use this information, together with their own research, to write a narrative or report.

Content Standards
Geography (National Geography Standards)

- **Standard 7:** The physical processes that shape the patterns of Earth's surface.

(Some participants might find that this lesson plan can be integrated in other disciplines such as science and English language arts.)

Learning Goals

- To identify the characteristics of different natural disasters; to recognize the geographic conditions associated with different natural disasters; to understand the geographic impact of different natural disasters.
- To gain an enriched vocabulary for describing natural disasters; to interpret and organize disparate pieces of textual information; to gather and synthesize related information through guided research; to write a narrative or report based on research.

Skills Development
Map reading; use of geographic terms and concepts; analysis of physical processes. Vocabulary enrichment; reading comprehension; organization by subject and sequence; research; writing and revision; narrative and/or exposition.

Internet Content for the Classroom	**Type**
Maps of Nebraska, Costa Rica, Jamaica and Japan	Teaching Materials
Disaster Dossier: Background on Natural Disasters	Teaching Materials
Jumbled Files: Notes on Four Imaginary Interviews with Disaster Survivors That Have Become Mixed Up	Teaching Material
Videoclips of a Tornado and a Hurricane	Online Presentation
Hurricane Simulation	Online Presentation
Great Stories: Reading List	Teaching Materials
Living with Natural Disasters: Online Article	Teaching Materials
Fallout: Eye on the Volcano: Interactive Report	Online Presentation
El Niño/La Niña: Online Article with Interactive Graphics	Online Presentation
Lightning: The Shocking Story: Interactive Documentary	Online Presentation
Links to Related Web Sites	(Different at Each Site)

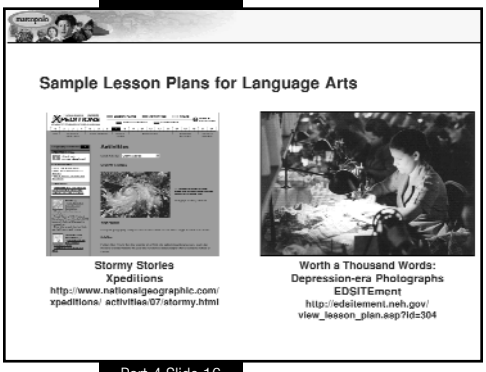
Stormy Stories Case Study Worksheet (continued)

Classroom Resources Required
Internet-equipped student computers; printer.

Teaching Strategy
The lesson plan uses *Internet Content for the Classroom* to create a Learning Experience that engages students in online research and discovery.

Lesson Development
1. Students examine maps and a "Disaster Dossier" to learn about natural disasters and the places they occur.
2. Students use this knowledge to sort out notes on imaginary interviews with four natural disaster survivors.
3. Students investigate a variety of resources to gather additional information about natural disasters.
4. Students write a story or report about a natural disaster based on their research.

Building on the Model
Within the language arts curriculum, the lesson provides a model for using *Internet Content for the Classroom* to engage students in the writing process. The sample can be adapted to various levels of writing ability, stages in the writing process and forms of written expression (e.g., research paper, persuasive essay, descriptive essay). To apply the model, a teacher would assemble resources that enable students to assume the role of a particular kind of writer—magazine editor, presidential speech writer or television reporter, for example—and then would create a learning activity in which students use the resources to accomplish a specific writing task.



Part 4 Slide 16

Worth a Thousand Words: Depression-Era Photographs
EDSITEment
http://edsitement.neh.gov/view_lesson_plan.asp?id=304

Training Time: 30 minutes

Discussion Notes

Against the backdrop of the New Deal, this lesson focuses on the interpretation of historical images to provide a model for using *Internet Content for the Classroom* to teach media literacy in the language arts curriculum.

- **Standards:** Point out that the lesson supports national content standards in social studies and language arts. Have participants comment on how well the lesson supports their local or state standards in these subject areas.
- ***Internet Content for the Classroom:*** Call attention to the carefully chosen material used as a basis for the lesson: a photo essay portraying a "day in the life" of a Works Progress Administration (WPA) worker. Ask participants to consider the availability of such content apart from the Internet. Discuss how these archival images would enrich historical understanding even in a language arts lesson focused primarily on media literacy.
- **Teaching Strategy:** Talk about the lesson's underlying strategy, noting that it's not much different from a lesson one might teach with traditional materials. Point out also that the lesson infuses ICFC into the curriculum without requiring Internet access in the classroom. Have participants consider the effect of putting this lesson online, where students might fill out an interactive analysis sheet. Explore the relative benefits, in this case, of online learning versus the more collaborative atmosphere of the classroom.
- **Building on the Model:** Have participants share their ideas for adapting this lesson plan model to other language arts topics. Encourage participants to consider topics outside the area of media literacy. Suggest, for example, that a teacher could apply this model to a study of a poem or short story by having students closely examine one text drawn from an EDSITEment Web site and using other sites with image collections as a reservoir for further contextual study of a text.
- **Desktop Integration:** Note that students could download the images used in the lesson plan and copy them into a word processor document to illustrate their fact-based fictional journals or use presentation software to create their own interactive photo essays.

Case Study Worksheet
(suggested responses)

Lesson Title: Worth a Thousand Words: Depression-Era Photographs
Subject Area(s): U.S. History, Social Studies, Language Arts
Grade Level: 9–12
Content Partner Site: EDSITEment
URL: http://edsitement.neh.gov/view_lesson_plan.asp?id=304

Objectives
Students learn how to distinguish observation from inference in the interpretation of historical images and explore the manipulation of visual media for persuasive purposes.

Content Standards
Social Studies (Curriculum Standards for Social Studies)

- **Standard 1:** Culture
- **Standard 2:** Time, Continuity and Change
- **Standard 4:** Individuals, Groups and Institutions

(Some participants might find that this lesson plan can be integrated in other disciplines such as English language arts.)

Learning Goals

- To gain insight into New Deal programs and the experience of Depression-era Americans; to recognize the distinction between observation and inference when drawing historical information from documentary photographs; to recognize some ways the photographer can influence interpretation of a photograph; to gain experience in critical thinking about media.

Skills Development
Historical comprehension; historical analysis and interpretation; historical research, visual literacy; Internet research.

Internet Content for the Classroom	**Type**
Depression-Era Photo Essay: Lucille Normand	Teaching Materials

Classroom Resources Required
Loose-leaf paper; printer or computer projector.

Teaching Strategy
The lesson plan uses ICFC for Curriculum Enrichment, replacing typical study materials with online resources that would be otherwise inaccessible.

Worth a Thousand Words Case Study Worksheet (continued)

Lesson Development

1. Students examine a documentary photograph from a Depression-era photo essay, recording their observations and inferences on loose-leaf paper.
2. Students discuss how the photograph's caption influences a viewer's observations and inferences.
3. Students analyze the remaining photographs in the photo essay, comparing their views with those expressed in the photographer's captions and scene-setting.
4. Students brainstorm questions they would ask and images they would add to revise the photo essay.
5. Students write an imaginary interview with the subject of the photo essay or an imaginary journal entry recording the subject's feelings about the way she was portrayed.

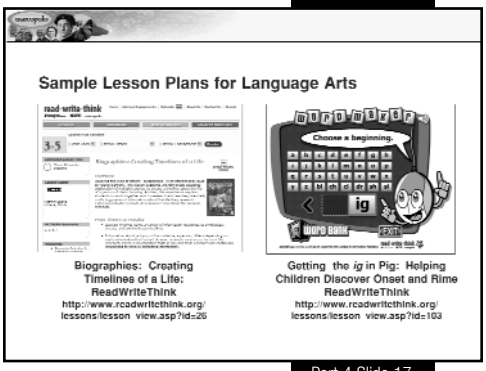
Building on the Model

This lesson provides a model for using ICFC to focus study within a broader context. It can be adapted to other language arts topics (genre, figures of speech, thematic traditions) and to topics in other subject areas. To apply the model, a teacher would identify an online resource that can provide students with a salient example and contextual evidence that the example is not an exception. To complete the lesson, a teacher would develop a series of questions designed to probe the example and set the stage for student exploration of its broader context.

Biographies: Creating Timelines of a Life
ReadWriteThink

http://www.readwritethink.org/lessons/lesson_view.asp?id=26

Training Time: 30 minutes



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Discussion Notes

This reading and language arts lesson gives students experience with researching the lives of others using multiple sources. They will negotiate which events to select and work together to resolve potentially conflicting pieces of information.

- **Standards:** Point out that the lesson supports national content standards in reading and language arts. Have participants comment on how well the lesson supports their local or state standards in this subject area.
- ***Internet Content for the Classroom:*** Call attention to the mixture of interactive activities and low-tech samples that teach students about using a variety of information resources to synthesize, create and communicate what they've learned.
- **Teaching Strategy:** Talk about the lesson's underlying strategy, noting the integration of whole-group activities coupled with partner exercises that reinforce proper research and reporting techniques. This lesson can be done primarily offline, but the interactive Time Line Tool allows students to share their information in a synthesized and chronological format.
- **Building on the Model:** Have participants brainstorm on how to incorporate other content areas into this research lesson. Discuss how the Time Line Tool, in particular, not only allows students to list information of a historical nature but also can be extended to share current and future school, community and/or national events. This tool can be used also as an organizer and a prestep to writing a complete essay on the selected personality.
- **Desktop Integration:** Note that teachers could use a graphic organizer program with students to keep a list of collected information and types of sources. These organizers can be printed for students to negotiate the flow and sequence of key events to enter on their time lines. After the template is complete, students can use this information to write a more complete and fluent essay of their selected person in a word processing document.

Case Study Worksheet
(suggested responses)

Lesson Title: Biographies: Creating Timelines of a Life
Subject Area(s): Reading and Language Arts
Grade Level: 3–5
Content Partner Site: ReadWriteThink
http://www.readwritethink.org/lessons/lesson_view.asp?id=26

Objectives
Students will learn to use multiple sources of information to research the lives of others. They will work together to negotiate which events to select and resolve potentially conflicting pieces of information.

Content Standards
Language Arts (IRA/NCTE Standards)

- **Standard 1:** Students read a wide range of print and nonprint texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works.
- **Standard 3:** Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies, and their understanding of textual features (e.g., sound-letter correspondence, sentence structure, context, graphics).
- **Standard 5:** Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.
- **Standard 7:** Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources (e.g., print and non-print texts, artifacts, people) to communicate their discoveries in ways that suit their purpose and audience.

Learning Goals

- To gain experience utilizing multiple sources of information (print and non-print) and use critical thinking to synthesize this information.
- To learn how to resolve conflicting information from various sources.
- To present synthesized information in a sequential order using the Time Line Tool.

Biographies: Creating Timelines of a Life
Case Study Worksheet (continued)

Skills Development
Collaboration, data collection, reading, writing, research skills using proper citation.

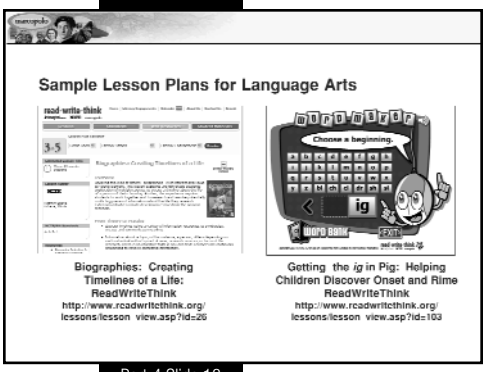
Internet Content for the Classroom	**Type**
Biography Selection and Rationale Handout	Teaching Materials
ReadWriteThink Time Line Tool	Learning Activity
Guidelines for Citation of Resources	Teaching Materials
Lifelines of Person of World Historical Interest Web Site	Teaching Materials
The Biography Maker Web Site	Teaching Materials
Images of Greatness Web Site	Teaching Materials
African Americans in the Sciences Web Site	Teaching Materials

Classroom Resources Required
Chart paper, Internet-equipped student computers, pencils/pens, paper, biography text sets, magazine articles, CD-ROM, Web sites and/or videos about selected biographical figures.

Teaching Strategy
This lesson plan uses ICFC for Curriculum Enrichment infusing new content into your current lesson plans and lectures.

Lesson Development
1. Gather students together as a whole group. Model where to find information on a selected person and how to resolve conflicting sources of information, and begin to share how to synthesize this information.
2. Establish groups of 3–5 students, and have each group select a person to research.
3. Students use multiple sources both online and offline to find significant information on the selected personality.
4. Enter in 6–10 key events in the life of their personality using the Time Line Tool.
5. Debrief the group by listing strategies that worked to resolve conflicting sources of information and add strategies where necessary.

Building on the Model
This lesson provides a model for using ICFC to enhance biographical research. This sample can be extended to writing a formal paper about a selected personality. To apply this sample, a teacher would have the students use the online, interactive Time Line Tool to structure the significant events of this person's life in sequential order. Students can then take these key events and write a fluent essay using any word processing software.



Part 4 Slide 18

Getting the *ig* in Pig: Helping Children Discover Onset and Rime
ReadWriteThink

http://www.readwritethink.org/lessons/lesson_view.asp?id=103
Training Time: 30 minutes

Discussion Notes

This reading and language arts lesson gives students experience with learning the *ig* rime through a variety of exercises. This lesson can also be adapted to teach other word patterns.

- **Standards:** Point out that the lesson supports national content standards in reading and language arts. Have participants comment on how well the lesson supports their local or state standards in this subject area.
- ***Internet Content for the Classroom:*** Call attention to the mixture of interactive activities and low-tech samples that teach students about the *ig* rime but that also can be adapted to other word patterns.
- **Teaching Strategy:** Talk about the lesson's underlying strategy, noting the integration of whole-group rhyming activities coupled with independent activities that reinforce rhyming patterns. This lesson can be done primarily offline, but the interactive Word Maker allows students to work independently on rhyming beyond the *ig* pattern.
- **Building on the Model:** Have participants brainstorm on how to incorporate other word patterns into this rhyming lesson. Discuss how the interactive nature of this lesson allows students to self-check their work and progress at an appropriate pace.
- **Desktop Integration:** Note that teachers could use a database program with students to keep a list of all word patterns being studied. These word patterns can be printed (in a large-card format) for students to cut and practice sorting at home or school.

Case Study Worksheet
(suggested responses)

Lesson Title: Getting the *ig* in Pig: Helping Children Discover Onset and Rime
Subject Area(s): Reading and Language Arts
Grade Level: K–2
Content Partner Site: ReadThinkWrite
http://www.readwritethink.org/lessons/lesson_view.asp?id=103

Objectives
Students will learn to recognize the *ig* pattern, brainstorm words with the *ig* rime, find *ig* words in literature and use the *ig* words that they learn in their own writing.

Content Standards
Language Arts (IRA/NCTE Standards)

- **Standard 3:** Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies, and their understanding of textual features (e.g., sound-letter correspondence, sentence structure, context, graphics).

Learning Goals
- To gain experience utilizing literature, independent and cooperative learning, critical thinking and hands-on activities to learn the *ig* rime.
- To gather words that have the *ig* rime from books and magazines and to brainstorm their own words using this word pattern.

Skills Development
Collaboration, phonemic awareness, data collection, reading, writing.

Internet Content for the Classroom	**Type**
If You Give a Pig a Pancake	Teaching Materials
To Market, To Market	Teaching Materials
Word Maker	Learning Activity
The Phonics Room Web Site	Teaching Materials

Getting the *ig* in Pig: Helping Children Discover Onset and Rime
Case Study Worksheet (continued)

Classroom Resources Required

Chart paper, Internet-equipped student computers, markers, crayons, pencils, paper, scissors, glue, highlighting tape, rubber bands, yardsticks or pointers.

Teaching Strategy

This lesson plan uses ICFC for Curriculum Enrichment, infusing new content into your current lesson plans and lectures.

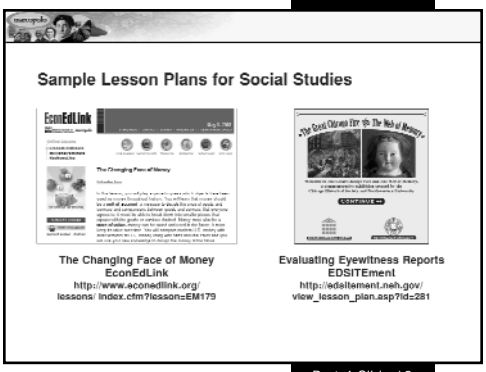
Lesson Development

1. Students listen to the poem, *This Little Piggie,* and the story, *If You Give a Pig a Pancake,* to answer questions about pigs.
2. Students participate in a group discussion on the *ig* rime, using pig as the primary example. Students work collaboratively to add other examples of the *ig* rime to the chart paper.
3. Students use magazines and books to find other examples of the *ig* rime.
4. Students work with the online, interactive Word Maker to manipulate letters to make rhyming *ig* words.
5. Students create poems with the *ig* words that they have learned.

Building on the Model

This lesson provides a model for using ICFC to enhance a study of the *ig* rime. This sample can be adapted to the study of other rhyming word patterns. To apply this sample, a teacher would have the students use the online, interactive Word Maker to manipulate other letters to make rhyming word patterns. The teachers would then have students find these rhyming patterns in other forms of literature from the class and school library collections. Students can then write additional poems using this new list of rhyming words.

Case Studies—Social Studies



Part 4 Slide 19

The Changing Face of Money
EconEdLink

http://www.econedlink.org/lessons/index.cfm?lesson=EM179

Training Time: 60 minutes

Discussion Notes

This economics lesson, which compares old forms of money with modern forms, teaches students some characteristics money should have.

- **Standards:** Point out that the lesson supports national content standards in economics. Have participants comment on how well the lesson supports their local or state standards in this subject area.
- ***Internet Content for the Classroom:*** Call attention to the different kinds of content combined in the lesson—news articles, online images, student activities—and the precision with which each content item has been selected. Note also that in some cases the lesson planner has summarized information rather than clutter the learning process by having students sift through a lengthy article. Compare this handling of ICFC to links that send students to a Web site where they must search for relevant information on their own. Discuss the risks of turning students loose in that way and the benefits of guiding students directly to the information they need.
- **Teaching Strategy:** Talk about the lesson's underlying strategy, noting how it leads students step by step through an assessment of the issue with carefully framed guiding questions.
- **Building on the Model:** Have participants share their ideas for adapting this lesson plan model to other social studies topics. Point out that the lesson encourages students to sort and categorize money and to understand concepts such as value and trade. In this discussion, note that by encouraging students to design "money of the future," this lesson also teaches students about the nature of materials.
- **Desktop Integration:** Point out that students could use art software such as Kid Pix or HyperStudio® to create computer versions of their future money. A teacher building on this model could have students use spreadsheet software such as Microsoft® Excel to make diagrams of what constitutes "good" or "bad" materials for their future money or for other resources, such as housing materials, for a different topic altogether.

Case Study Worksheet
(suggested responses)

Lesson Title: The Changing Face of Money
Subject Area(s): Social Studies
Grade Level: K–2
Content Partner Site: EconEdLink
URL: http://www.econedlink.org/lessons/index.cfm?lesson=EM179

Objectives
Students learn how money has changed over time and how certain materials and objects make better stores of value than others.

Content Standards
Economics (Voluntary National Standards for Economic Education)

- **Standard 11:** Money makes it easier to trade, borrow, save, invest and compare the value of goods and services.

(Some participants might find that this lesson plan can be integrated into other disciplines such as science.)

Learning Goals

- To be able to explain how their lives would be more difficult in a world with no money or in a world where money sharply lost its value.

Skills Development
Reading comprehension; computation; problem solving; comparison and contrast analysis.

Internet Content for the Classroom	**Type**
Time Line That Compares Money across History	Teaching Materials
Student Activity on the History of Money	Teaching Materials
Student Activity on the Changes of U.S. Currency	Teaching Materials
Online Images of Coins	Teaching Materials
Online Images of Old and Updated U.S. Currency	Teaching Materials
Story About Change	Teaching Materials

Classroom Resources Required
Internet-equipped student computers.

Teaching Strategy
The lesson plan uses *Internet Content for the Classroom* to create an online Learning Experience, guiding students through a fact-finding process.

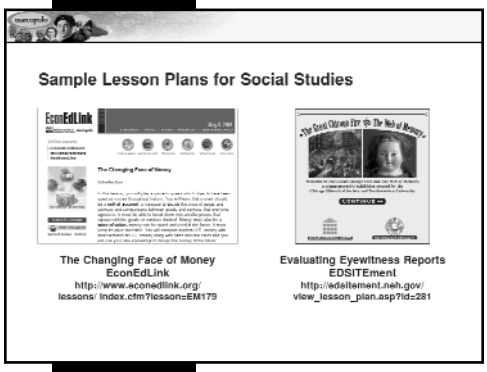
The Changing Face of Money Case Study Worksheet (continued)

Lesson Development

1. Students play a game to guess what objects and materials have been used as money in the past.
2. Students compare modern versions of U.S. money with past versions of U.S. money, completing a Venn diagram to map out similarities and differences.
3. Students consider why some objects and materials make better money than other objects and materials.
4. Students design future money based on what they have learned about current and past money and the materials involved.

Building on the Model

This lesson provides a model for using ICFC to guide students through a fact-finding and/or problem-solving process. It can be adapted to other social studies topics that focus on the analysis of historical changes of objects (e.g., transportation, food) and to science topics that focus on materials analysis. To apply the model, a teacher would assemble online resources that provide historical overviews of objects and that offer data for assessing why certain objects have changed over time. To complete the lesson, a teacher would create a series of questions designed to guide students through analysis and evaluation of these resources toward formulation of their own assessment of change.



Part 4 Slide 19

Evaluating Eyewitness Reports
EDSITEment
http://edsitement.neh.gov/view_lesson_plan.asp?id=281

Training Time: 45 minutes

Discussion Notes
This lesson plan offers students experience in making historical meaning from eyewitness accounts that present a range of different perspectives.

- **Standards:** Point out that the lesson supports national content standards in social studies. Have participants comment on how well the lesson supports their local or state standards in this subject area.
- ***Internet Content for the Classroom:*** Call attention to the different kinds of content combined in the lesson: online exhibits, archival documents, images, maps and primary documents. Talk about how bringing such a wide array of resources together for students can both broaden their horizons and set an example for research methodology, demonstrating the need to weigh many factors in historical analysis.
- **Teaching Strategy:** Talk about the lesson's underlying strategy, noting how it weaves together class discussion and group work to integrate these diverse resources into a unified learning experience. Note also that the lesson weaves together online resources with information that can be easily distributed in printout form.
- **Building on the Model:** Have participants share their ideas for adapting this lesson plan model to other social studies topics. Consider how this lesson can be adapted to contemporary events and/or other historical events such as the assassination of John F. Kennedy. Suggest, too, that this lesson could be set up as a Portfolio Project for students, who could gather images, texts and information to construct a view of a particular historical or contemporary event.
- **Desktop Integration:** Note that students could use word processor software to prepare their summaries of articles and resources. And they could use database software to conduct their research, creating a record format to capture citation information for online resources and using the copy and paste functions to catalogue images, maps, scholarly opinions and extracts from historical documents. Drawing on this database, students might then use page layout or presentation software to create a fact-based journal of their evaluation of an event.

Case Study Worksheet
(suggested responses)

Lesson Title: Evaluating Eyewitness Reports
Subject Area(s): History, Social Studies, Language Arts
Grade Level: 6–12
Content Partner Site: EDSITEment
URL: http://edsitement.neh.gov/view_lesson_plan.asp?id=281

Objectives
Students evaluate the reliability of primary source documents and draw up a list of questions they would want to ask and issues they would want to explore before making an eyewitness report part of the historical record. To conclude the lesson, students apply their research skills to present-day eyewitness accounts, gathering published examples or conducting interviews, and produce a report on their value and use as historical evidence.

Content Standards
Social Studies (Curriculum Standards for Social Studies)

- **Standard 2:** Time, Continuity and Change
- **Standard 3:** People, Places and Environment
- **Standard 4:** Individual Development and Identity
- **Standard 5:** Individuals, Groups and Institutions

(Some participants might find that this lesson plan can be integrated in other disciplines such as civics, history and English language arts.)

Learning Goals

- To gain experience in working with eyewitness accounts of historical events; to explore issues related to the evaluation of historical evidence; to consider the uses of historical evidence within different kinds of history; to recognize that historical evidence may raise questions rather than provide answers about a past event.

Skills Development
Historical comprehension; historical analysis and interpretation; historical research; Internet research skills.

Internet Content for the Classroom	**Type**
The Great Chicago Fire and the Web of Memory Site	Online Presentations
Newspaper Reports on the Great Chicago Fire	Teaching Materials
Document Analysis Worksheet	Teaching Materials
Online Maps	Teaching Materials
First-Person Chicago Fire Narratives	Teaching Materials
Civil War Diary	Teaching Materials
First-Person Civil War Narratives	Teaching Materials

Evaluating Eyewitness Reports Case Study Worksheet (continued)

Classroom Resources Required

Internet-equipped student computers and/or projector-equipped teacher computer.

Teaching Strategy

Bringing unique resources into the curriculum, the lesson plan uses ICFC for Curriculum Enrichment to create a Learning Experience in which students conduct online research and/or Fact-Finding Projects.

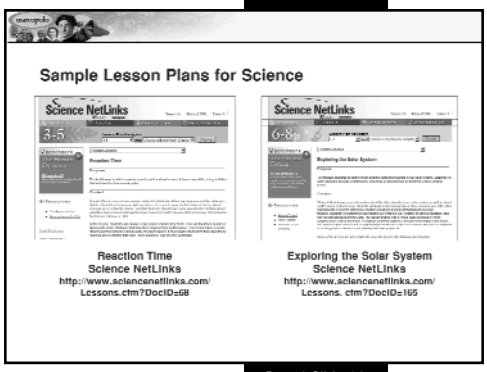
Lesson Development

1. Students use a document analysis worksheet to examine two newspaper reports of a single dramatic event: the Chicago Fire.
2. Students read personal recollections of the same event and compare these accounts with the newspaper reports written within days of the event.
3. Students rewrite a passage or incident from one of the personal narratives to show how one of the news reporters might have presented it.
4. Students discuss how a historian might use these eyewitness narratives of the Chicago Fire.
5. Students prepare a researcher's report on these firsthand accounts of the Chicago Fire, explaining what they might contribute to three different histories of the event.
6. Students evaluate a unique account of a different, more complex historical situation or contemporary event.

Building on the Model

This lesson provides a model for using ICFC to enhance class discussion and lend structure to student research projects. It can be adapted to other social studies topics that invite broad investigation of how historical events are reported and understood (e.g., the Civil War, the Gulf War). To apply the model, a teacher would identify online resources that provide an overview of the topic and assemble a variety of resources that highlight different perspectives on the topic. To complete the lesson, a teacher would lead students through an overview of the topic, have them summarize and report on selected resources to establish a framework for analysis and finally guide them toward promising resources for independent research.

Case Studies—Science



Part 4 Slide 18

Reaction Time
Science NetLinks
http://www.sciencenetlinks.com/Lessons.cfm?DocID=68

Training Time: 45 minutes

Discussion Notes
This lesson plan, which investigates human reaction time and the effects of prior experience on learning, provides a model for combining online activities and in-class experimentation within the science curriculum.

- **Standards:** Note that the lesson is directly aligned with the AAAS *Benchmarks for Science Literacy*. Have participants comment on how well the lesson supports their local or state standards in these subject areas.
- ***Internet Content for the Classroom:*** Call attention to the different games and simulations used as the basis for student experiments, noting that some allow students to experiment online while others provide directions for more traditional hands-on experiments. Discuss how this combination promotes student involvement at this grade level by accommodating different learning styles.
- **Teaching Strategy:** Talk about the lesson's underlying strategy, noting how it weaves together discussion questions and group work, background information and experimentation to create an integrated learning experience. Point out that access to the Internet is integrated into the lesson as well: Students use it both as an experimental tool and as a source of information. Discuss how one might modify this aspect of the lesson plan for a classroom with limited Internet access by having students conduct their online experiments in the computer lab or during the course of the day at a classroom computer set up as a learning station.
- **Building on the Model:** Have participants share their ideas for adapting this lesson plan model to other science topics. Acknowledge that the sample requires a teacher to find ICFC resources that allow students to conduct a series of online experiments. If time permits, have participants browse Science NetLinks to find out whether such resources are available for promising topics, or have them use the MarcoPolo Search Engine to find out whether resources for online experimentation are available at other Content Partner sites.
- **Desktop Integration:** Note that students could use spreadsheet software to record the results of each experiment, to compile their results as a class and to generate graphs and tables that would highlight significant patterns in these results.

Case Study Worksheet
(suggested responses)

Lesson Title: Reaction Time
Subject Area(s): Science
Grade Level: 3–5
Content Partner Site: Science NetLinks
URL: www.sciencenetlinks.com/Lessons.cfm?DocID=68

Objectives
Students learn how biological ability, judgments based on past experience and practice allow humans to learn new skills.

Content Standards
Science (Benchmarks for Science Literacy)

Benchmark 6: The Human Organism

A. Human Identity

C. Basic Functions

D. Learning

Learning Goals

- To experiment with human reaction time; to investigate whether memory of prior experiences can be useful when applied to new situations; to compare the human ability to learn new skills with the ability of an animal.

Skills Development
Reading comprehension; observation; experimentation; record keeping; data analysis; comparative analysis; inference and deduction; collaboration.

Internet Content for the Classroom	**Type**
Fastball Reaction Time	Learning Activity
Biological Baseball	Teaching Materials
How Fast Are You?	Teaching Materials
Colorful Reaction Time Tester (Extension)	Learning Activity
Sight vs. Sound Reflex Tester (Extension)	Learning Activity

Classroom Resources Required
Internet-equipped student computers; rulers; record-keeping sheets and graph paper; science journal.

Teaching Strategy
The lesson plan uses ICFC for Lesson Enhancement, opening a new dimension for learning with online simulations.

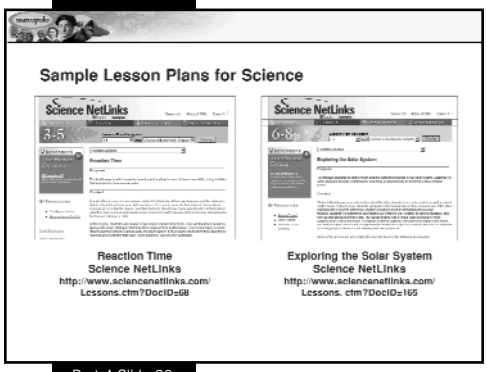
Reaction Time Case Study Worksheet (continued)

Lesson Development

1. Students test their reaction times to a computer-simulated fastball, record and graph the results and analyze the relationship between these successive learning experiences.
2. Students read and discuss an online article on the ability to hit a fastball.
3. Students conduct a classroom test of reaction time using a ruler. They record their results and then compare these results to their computerized learning experiences.
4. Students read and discuss an online article comparing human and animal reaction times, focusing on the role learning plays in human reactions.

Building on the Model

This lesson provides a model for using ICFC to enhance hands-on learning. The model can be adapted to other science topics that focus on discrete, repeatable processes (e.g., light and sound, chemical reactions, particle physics). To apply the model, a teacher would assemble online games and simulations that allow students to experiment with different aspects of a process. To complete the lesson, a teacher would provide directions for conducting each experiment and create a series of questions designed to guide students through analysis of their results. The lesson also demonstrates how online experimentation can be combined effectively with more traditional experimentation in the classroom.



Part 4 Slide 20

Exploring the Solar System
Science NetLinks
http://www.sciencenetlinks.com/Lessons.cfm?DocID=165

Training Time: 45 minutes

Discussion Notes

This science lesson plan introduces students to Earth's moon and to the eight other planets in our solar system. Students will learn about the geology, composition and orbits of other planets by planning a trip to another planet.

- **Standards:** Point out that the lesson supports national content standards in science. Have participants comment on how well the lesson supports their local or state standards in this subject area.
- ***Internet Content for the Classroom:*** Call attention to the different kinds of content brought together in this lesson plan: online tours, comprehensive data, online images and scientific information. Discuss how the lesson collects expertly reviewed Web sites that students can explore on their own, or in small groups, without a teacher worrying about the credibility or authority of the sites.
- **Teaching Strategy:** Talk about the lesson's underlying strategy, noting how it sets up students for a comprehensive learning experience that can be conducted as a research project or a journal-keeping project as students gain a thorough understanding of the solar system.
- **Building on the Model:** Have participants share their ideas for adapting this sample lesson plan to other science topics. Point out that the lesson encourages students to gather reliable information about a scientific topic and, in turn, to process that information in a critical way. Discuss how a teacher could use this lesson as a model for other research or scientific journal-keeping projects. This lesson also presents problem-solving activities that can be adapted to other topics.
- **Desktop Integration:** Students could use spreadsheet software to help collect vital information about the nine planets and Earth's moon, such as air quality, land mass and presence of water. They could also use word processing software to create their proposals of traveling to another planet. Finally, students may use presentation software such as Microsoft PowerPoint® to present their proposals to the whole class in presentation form.

Case Study Worksheet
(suggested responses)

Lesson Title: Exploring the Solar System
Subject Area(s): Science
Grade Level: 6–8
Content Partner Site: Science NetLinks
URL: www.sciencenetlinks.com/Lessons.cfm?DocID=165

Objectives
Students likely know some information about the other planets in our solar system as well as Earth's moon. In this lesson, students will build on this knowledge as they research one of the other eight planets in order to determine whether a manned mission to that planet would be feasible. Students will determine factors such as what it is like, whether it is habitable and how its orbit affects planning a trip.

Content Standards
Science (Benchmarks for Science Literacy)

- **Benchmark 2:** Nature of Mathematics
  B: Mathematics, Science and Technology
- **Benchmark 4:** Physical Setting
  A: The Universe
- **Benchmark 12:** Habits of Mind
  B: Computation and Estimation

(Some participants might find that this lesson plan can be integrated in other disciplines such as language arts.)

Learning Goals

- To become familiar with the solar system and the elements that make a planet inhabitable by humans.

Skills Development
Formulating questions for research; gathering relevant information; interpreting data; making generalizations.

Internet Content for the Classroom	**Type**
Solar System Tours	Online Presentation
Student Activity Worksheet	Teaching Materials
Online Articles on the Space Station	Teaching Materials
Comprehensive Overviews of Planets and Earth's Moon	Various

Exploring the Solar System Case Study Worksheet (continued)

Classroom Resources Required
Internet-equipped student computers.

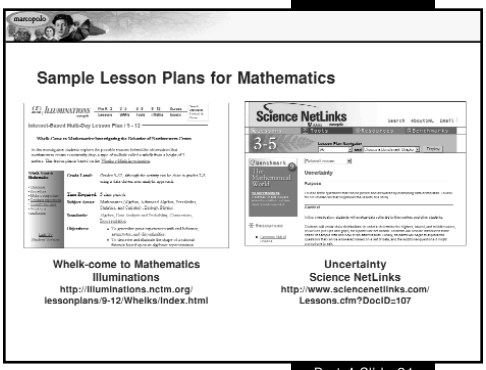
Teaching Strategy
The lesson plan uses ICFC to give students an online learning experience as they conduct research and engage in a fact-finding project.

Lesson Development

1. Students begin the lesson by imagining that they are planning an exploratory mission to Earth's moon.
2. Students brainstorm the moon's physical features, its ability to sustain life and a flight plan for reaching the moon.
3. Students work in groups to plan a trip to a planet (other than Earth): Mercury, Venus, Mars, Jupiter, Saturn, Uranus, Neptune or Pluto.
4. Students work in groups to create a proposal for a trip to their assigned planet.
5. Students work in groups to research and investigate the physical features of their destination planet, its ability to sustain life and a possible flight plan.
6. Student groups present their proposals to the class, arguing for or against the mission and providing evidence to support their conclusion.

Building on the Model
This lesson provides a model for using ICFC to integrate online research into the science curriculum. The model can be adapted to other science topics that examine a theory through analysis of studies, articles and data sets. To apply the model, a teacher would identify online resources that provide an overview of the topic and assemble resources that allow students to examine the evidence underlying theoretical positions on the topic. To complete the lesson, a teacher would lead students through an overview of the topic and then frame a series of questions designed to guide analysis and evaluation of the substantiating evidence. A teacher could adapt the lesson by requiring individual research outside the classroom, accompanied by journal keeping to demonstrate the research process and to document key findings during online research.

Case Studies—Mathematics



Part 4 Slide 21

Whelk-Come to Mathematics
Illuminations

http://illuminations.nctm.org/lessonplans/9-12/Whelks/index.html

Training Time: 45 minutes

Discussion Notes

This lesson plan, which uses mathematics to investigate why northwestern crows consistently drop whelks from a height of five meters to crack them open, offers a model for integrating a wide array of Internet resources into the mathematics curriculum.

- **Standards:** Point out that the lesson supports national content standards in mathematics. Have participants comment on how well the lesson supports their local or state standards in this subject area.
- ***Internet Content for the Classroom:*** Call attention to the different kinds of content assembled here: video, field data, class experiment data, interactive graphs and spreadsheets. Talk about how these resources combine to enrich what might otherwise easily be boiled down to just another "math problem." Highlight the use of real-world scientific data in the lesson plan, which draws a valuable connection between mathematical reasoning and scientific understanding.
- **Teaching Strategy:** Talk about the lesson's underlying strategy, noting how the hands-on approach carries over from the in-class experiment to the spreadsheet calculations and manipulation of the interactive graph. Point out also that the lesson planner has included "Thoughts" to help a teacher understand and implement this underlying strategy. Note, finally, that although designed as an online activity, the lesson could be conducted conventionally with the help of graphing calculators. Discuss how this could diminish the learning experience by eliminating some of the interactivity, background information and focused analysis built into the lesson's customized computer applications.
- **Building on the Model:** Have participants share their ideas for adapting this lesson plan model to other mathematics, science and economics topics that call for quantitative analysis. Acknowledge that few teachers would be able to create the kind of customized computer applications that are the most distinctive feature of the lesson. Focus, however, on the equally important use of hands-on experimentation in the lesson and the repeated testing of mathematical expressions and results against the real-world phenomenon under investigation.
- **Desktop Integration:** In addition to having students use graphing calculators and spreadsheet software to conduct their analysis, a teacher could prepare a word processor template for them to use in reporting their results, with questions designed to guide them through the process and "answer spaces" in which to enter their findings. Such a template would also provide students with a consistent format for recording their investigations and reporting their conclusions.

Case Study Worksheet
(suggested responses)

Lesson Title: Whelk-Come to Mathematics
Subject Area(s): Mathematics, Science
Grade Level: 9–12
Content Partner Site: Illuminations
URL: http://illuminations.nctm.org/lessonplans/9-12/Whelks/index.html

Objectives
Students develop mathematical models to investigate why northwestern crows consistently drop whelks from a height of five meters to crack them open.

Content Standards
Mathematics (Principles and Standards for School Mathematics)

- **Standard 2:** Algebra
- **Standard 5:** Data Analysis and Probability
- **Standard 9:** Connections
- **Standard 10:** Representation

(Some participants might find that this lesson plan can be integrated in other disciplines such as science.)

Learning Goals

- To generalize prior experiences with end behavior, asymptotes and discontinuities; to describe and illustrate the shape of a rational function based upon its algebraic representation; to understand the different information readily available from different algebraic representations of rational functions; to develop basic skills in working with algebraic representations of rational functions; to experience statistical analysis in a real-world setting; to apply the concept of work in understanding our world.

Skills Development
Conjecture; experimentation; observation; data collection; mathematical analysis; algebra; graphical analysis; statistics; calculator skills; spreadsheet skills.

Internet Content for the Classroom	**Type**
Video of Crows Dropping Whelks	Online Presentation
Interactive Spreadsheet and Data Grapher	Learning Activity
Sample Peanut and Large Whelk Data	Teaching Materials
Interactive Data Analysis Graph	Learning Activity
Interactive Data Transformation Graph	Learning Activity
Interactive Function Grapher	Learning Activity
Online Answers to All Questions (for Teachers)	Teaching Materials
Thoughts for Teachers	Teaching Materials

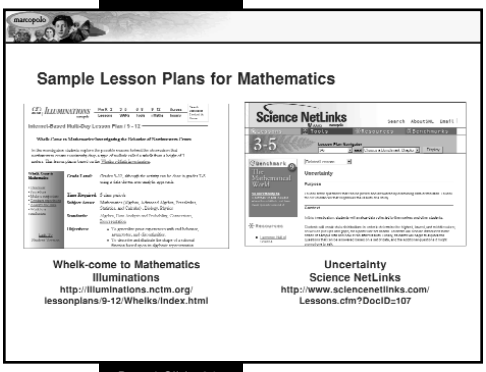
Whelk-Come to Mathematics Case Study Worksheet (continued)

Classroom Resources Required
Internet-equipped student computers; activity sheets; shelled, whole, blanched peanuts; meter sticks.

Teaching Strategy
This lesson plan uses *Internet Content for the Classroom* to create an interactive math investigation, guiding students through a Problem-Solving Activity in which they develop and analyze mathematical models to arrive at their own carefully reasoned solution.

Lesson Development
1. Students learn about crows that consistently drop whelks from a five-meter height to break them open, propose an experimental model for investigating this behavior and graph a possible relationship between the height and number of drops required to break open a whelk.
2. Students conduct a classroom experiment modeled on the crows' behavior, gathering data on the number of drops required to break a peanut at different heights and graphing the relationship between height and average number of drops.
3. Students analyze their data to determine an equation for the relationship between height and number of drops.
4. Students use their analysis to determine an equation for the work required as a function of height; they then explore different symbolic expressions of this rational function; and finally they find the minimum work.

Building on the Model
This lesson provides a model for using ICFC to stimulate and direct quantitative problem solving. The model can be applied to mathematics, science and economics topics that involve data analysis and the development of formulas and functions (e.g., exponential change, motion, productivity). To apply the model, a teacher would identify online resources that provide real-world data on the topic and frame a problem-solving scenario to guide students through the stages of analysis. The lesson plan also uses interactive graphs and spreadsheets to enhance the analytic process, for which a teacher applying this model could substitute graphing calculators and spreadsheet software. The lesson also demonstrates how online resources can be combined effectively with traditional classroom experimentation.



Part 4 Slide 21

Uncertainty

Science NetLinks

http://www.sciencenetlinks.com/Lessons.cfm?DocID=107
Training Time: 45 minutes

Discussion Notes

This science lesson plan, which explores data distributions and some basic steps in statistical analysis, offers a model for integrating Internet resources and hands-on experimentation into the mathematics curriculum.

- **Standards:** Point out that the lesson supports national content standards in science. Have participants comment on how well the lesson supports their local or state standards in this subject area.
- ***Internet Content for the Classroom:*** Call attention to the Internet games and simulations used as the basis for student experiments, as well as the online tutorial used to guide students through the basic steps of data analysis. Talk about how this kind of interactive content, combined with the use of sticky notes to build a data distribution right before their eyes, enhances student involvement in the learning process, especially at lower grade levels.
- **Teaching Strategy:** Talk about the lesson's underlying strategy, noting how it weaves together discussion questions and small group collaboration, Internet activities and old-fashioned boardwork to create an integrated learning experience. Point out that access to the Internet is integrated into the lesson as well: Students use it both as a learning tool and as a source of information.
- **Building on the Model:** Have participants share their ideas for adapting this lesson plan model to other mathematics, science and economics topics that call for quantitative analysis. Note that although the model uses interactive games and simulations to generate data, any source of real-world data could be used. Discuss some places where a teacher might find such data at MarcoPolo: for example, in the DataLinks section of EconEdLink, in the Atlas at Xpeditions, at astronomy Web sites reviewed by Science NetLinks or even in Civil War statistics at Web sites reviewed by EDSITEment.
- **Desktop Integration:** Note that instead of sticky notes, students could use spreadsheet software to record and analyze their data in this lesson plan, and use its graphing capabilities to look at the data they collect in various ways.

Case Study Worksheet
(suggested responses)

Lesson Title: Uncertainty
Subject Area(s): Mathematics, Science
Grade Level: 3–5
Content Partner Site: Science NetLinks
URL: www.sciencenetlinks.com/Lessons.cfm?DocID=107

Objectives
Students learn to create and interpret data distributions.

Content Standards
Science (Benchmarks for Science Literacy)

Benchmark 9: The Mathematical World

D. Uncertainty

(Some participants might find that this lesson plan can be integrated in other disciplines such as mathematics.)

Learning Goals

- To analyze data that students collect and data collected by others; to create data distributions to determine the highest, lowest and middle values, as well as pile-ups and gaps in particular data sets; to consider how sample size can affect data analysis; to explore questions that can be answered based on data sets and questions that data sets can prompt one to ask.

Skills Development
Data collection; quantitative analysis; deduction.

Internet Content for the Classroom	**Type**
Tower of Hanoi	Learning Activity
PlaneMath Experimental Department	Learning Activity
Cereal Box Problem Simulation	Learning Activity

Classroom Resources Required
Sticky notes; Internet-equipped student computers.

Teaching Strategy
This lesson plan uses ICFC for Lesson Enhancement, opening a new dimension for learning through online activities.

Uncertainty Case Study Worksheet (continued)

Lesson Development

1. Students collect data on the number of people in their families and use sticky notes to create a data distribution along a number line on a wall or chalkboard.
2. Students collect data on their ability to solve an online puzzle and use sticky notes to create a data distribution based first on a small sample size, then on the results of the whole class.
3. Students review an online tutorial to learn more about sample size and basic concepts of data analysis (range, mean, median).
4. Students collect and analyze data using an online probability simulation.

Building on the Model

This lesson provides a model for using ICFC to enhance in-class mathematics and science learning activities. The model can be adapted to other mathematics and science topics that focus on techniques for analyzing real-world data (e.g., geometry, percentages, astronomy). To apply the model, a teacher would identify online resources that provide data suitable for demonstrating a specific analytic technique. To complete the lesson, a teacher would create a series of in-class learning activities based on data that students collect or generate using these online resources.

Case Studies—Fine Arts

Part 4 Slide 22

The Colors of Ellington's Band

ARTSEDGE
http://dellington.org/lessons/lesson02.html
Training Time: 30 minutes

Discussion Notes

This music lesson, which explores the sound of the Duke Ellington Orchestra, offers a model for integrating multimedia Internet resources and online activities into the arts curriculum.

- **Standards:** Point out that the lesson supports the national content standards in arts education. Have participants comment on how well the lesson supports their local or state standards in this subject area. If time permits, have participants examine the other lesson plans in this section of the Ellington Centennial mini-site and discuss how they together support standards not only in music but in language arts (Activity One) and social studies (Activity Four) as well.
- ***Internet Content for the Classroom:*** Call attention to the use of images and audioclips to enrich the usually routine process of matching sounds with instruments, and note how setting up this lesson as an interactive game works to heighten student involvement. Point out that two kinds of audioclips are used in the lesson: recordings of Ellington's orchestra and synthesized ensemble performances. Discuss the pros and cons of combining these two different sound worlds in this way.
- **Teaching Strategy:** Talk about the lesson's underlying strategy, pointing out how it guides students through a series of short, carefully focused activities to build up listening skills from simple sound identification to experimentation with musical arrangements. Point out also that the Internet is integral to this learning process, providing a medium through which students can simultaneously listen to music, comment on what they hear, and make music of their own.
- **Building on the Model:** Have participants share their ideas for adapting this lesson plan model to other arts topics and topics in other subject areas. Note, for example, that a foreign language or ESL teacher might adapt this model to create online activities designed to strengthen oral comprehension by using audioclips of Internet radio broadcasts, and that a science teacher might adapt it for lessons on cell division by using videoclips of mitosis. If time permits, have participants use the MarcoPolo Search Engine to find resources for building on the model in other subject areas.
- **Desktop Integration:** Note that students could use word processing software to answer the lesson's essay question more extensively. Students could also use presentation or Web page authoring software to create their own multimedia report on the sound of Ellington's band.

Case Study Worksheet
(suggested responses)

Lesson Title: The Colors of Ellington's Band
Subject Area(s): Music
Grade Level: 6–8
Partner Site: ARTSEDGE
Content
URL: http://dellington.org/lessons/lesson02.html

Objectives
Students learn about Ellington's use of instrumentation.

Content Standards
Music (National Standards for Arts Education)

- NAES-Music-5-8-1: Singing, alone and with others, a varied repertoire of music.
- NAES-Music-5-8-2: Performing on instruments, alone and with others, a varied repertoire of music.
- NAES-Music-5-8-6: Listening to, analyzing and describing music.

Learning Goals
- To learn about the instrumentation and personnel Ellington used to create his composition "Concerto for Cootie" and to evaluate different possible instrumental combinations.

Skills Development
Listening; identification of musical instruments; composing and arranging.

Internet Content for the Classroom	**Type**
Audioclip of "Concerto for Cootie"	Online Presentation
Audioclips of a Blues Line in Various Instrumentations	Online Presentation
Archival Image of Ellington's Band	Teaching Materials
Interactive Quizzes	Learning Activity

Classroom Resources Required
Internet-equipped student computers.

Teaching Strategy
This lesson plan uses ICFC to create a Teaching Tool, posing a series of questions to prompt student discovery.

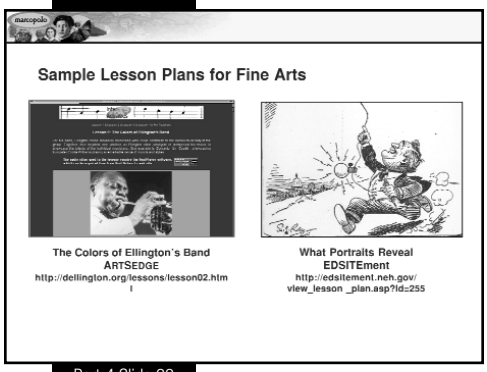
Duke Ellington Case Study Worksheet (continued)

Lesson Development

1. Students listen to and describe the sound of Cootie Williams' trumpet in "Concerto for Cootie."
2. Students listen to, identify and evaluate three instrumentations of a blues line.
3. Students match instrumental sounds to the members of Ellington's band.

Building on the Model

This lesson provides a model for using ICFC to integrate multimedia resources into the arts curriculum. The model can be adapted to other branches of the arts (e.g., dance, theater, design) and many other subjects across the curriculum. To apply the model, a teacher would identify multimedia resources that bring a topic to life—audioclips, videoclips, animations, images—and create a series of learning activities designed to guide students from perception toward understanding.



Part 4 Slide 22

What Portraits Reveal
EDSITEment
http://edsitement.neh.gov/view_lesson_plan.asp?id=255
Training Time: 45 minutes

Discussion Notes
This art history lesson, which explores many aspects of portrait painting, offers a model for integrating a broad array of Internet resources reflecting diverse points of view into the arts curriculum.

- **Standards:** Point out that the lesson supports national content standards in social studies. Have participants comment on how well the lesson supports their local or state standards in this subject area.
- ***Internet Content for the Classroom:*** Call attention to the wide assortment of art resources combined in the lesson plan: official portraits, colonial-era portraits, political cartoons, national monuments and pop art. Talk about how providing students with such a cross-section of examples creates a solid foundation for interpretation, helping students recognize and discover common characteristics of portraiture for themselves. Note also that an arts teacher can make use of this content with print-outs even when there is no Internet-equipped computer available. Talk about the advantages of taking resources off the Internet in this way (no waiting for downloads, easy to reorganize and update, etc.)
- **Teaching Strategy:** Talk about the lesson's underlying strategy, noting how it weaves together group work and class discussion to integrate these diverse resources into a unified learning experience. Note also that the lesson plan is primarily classroom based, and discuss how a teacher might refashion it as an online project or activity by giving students a guide sheet to exploring these online art galleries.
- **Building on the Model:** Have participants share their ideas for adapting this lesson plan model to other arts topics and topics in other subject areas. Point out that the model is applicable to many situations in which learning occurs through comparison and contrast of a variety of examples. Discuss how a science teacher might adapt the model for a lesson in evolution by assembling images that show adaptation within a species, or how a history teacher might use the model for a lesson on the Middle Ages by assembling images and other resources that allow students to explore many aspects of medieval life.
- **Desktop Integration:** Note that a teacher could download the portraits used in this lesson and use presentation software to display them in class. With the aid of a scanner, students could also use presentation or page layout software to produce their family portrait exhibits.

Case Study Worksheet
(suggested responses)

Lesson Title: What Portraits Reveal
Subject Area(s): Art History, U.S. History, Social Studies, Visual Arts
Grade Level: 6–12
Content Partner Site: EDSITEment
URL: http://edsitement.neh.gov/view_lesson_plan.asp?id=255

Objectives
Students learn how portraits can reflect social attitudes, characterize the person portrayed and express an opinion or point of view.

Content Standards
Social Studies (Curriculum Standards for Social Studies)

- **Standard 1:** Culture
- **Standard 2:** Time, Continuity and Change
- **Standard 4:** Individual Development and Identity
- **Standard 10:** Civic Ideals and Practices

(Some participants might find that this lesson plan can be integrated in other disciplines such as visual arts.)

Learning Goals

- To gain experience in working with portraits as a source of historical evidence; to consider the part that interpretation plays in drawing evidence from historical portraits; to examine uses of portraiture that comment on the significance of an individual; to explore the potential historical significance of portraits made today.

Skills Development
Research; visual art analysis and interpretation; historical interpretation; critical thinking.

Internet Content for the Classroom	**Type**
Photograph Analysis Worksheet	Teaching Materials
Presidential Portraits of Washington, Cleveland and Bush	Teaching Materials
Portraits of Revolutionary-Era Americans	Teaching Materials
Caricatures of Franklin Roosevelt	Teaching Materials
Image of Lincoln's Statue in the Lincoln Memorial	Teaching Materials

Classroom Resources Required
Internet-equipped student computers or print-outs of online images.

Teaching Strategy
This lesson plan uses ICFC for Curriculum Enrichment, infusing a unique selection of resources into the arts curriculum.

Portraits Case Study Worksheet (continued)

Lesson Development

1. Students prepare a portrait analysis worksheet.
2. Students analyze presidential portraits from three eras to determine how they reflect on the character of the subject and how they may reflect changing American attitudes toward the presidency.
3. Students analyze portraits from the Revolutionary era to investigate techniques (symbolic, representational, realistic) through which a portrait can "tell a story" about its subject.
4. Students analyze styles of portraiture—caricature, monumental sculpture and collage—that express a specific point of view toward their subject.
5. Students analyze portraits of family members and produce an exhibit or report using selected portraits to present a chapter of their family history.

Building on the Model

This lesson provides a model for using ICFC from many sources to enhance the arts curriculum, in this case by creating a customized portrait gallery. The model can be adapted to other branches of the arts and to subjects across the curriculum for topics that focus on interpretation and comparison of individual examples (e.g., architecture, popular culture, archeology). To apply the model, a teacher would assemble online resources that provide a systematic cross-section of examples for study and create a series of questions or learning activities designed to help students recognize connections and distinctions among them.

FRAMEWORK FOR INTEGRATING ICFC

TYPES OF INTERNET CONTENT

Teaching Materials
Portable content in reproducible formats: maps, charts, tables, graphs, timelines, images, articles, archival documents, datasets, worksheets, activities and handouts.

Online Presentations
Information delivered in an interactive format: online exhibits, guided tours, documentaries, slide shows, demonstrations, videos, audioclips and multimedia hypertexts.

Learning Activities
Content designed to promote discovery, decision making, problem solving and critical thought: multiple-choice games, puzzles, and quizzes, fill-in-the-blank forms and calculators, interactive exhibits, simulations, virtual realities and scenarios that guide learners in quest of knowledge.

Internet Excursions
Programs that link students to an ongoing event—a space mission, a political campaign, an expedition to the Arctic or the bottom of the sea—giving them an opportunity to share in the adventure and share ideas with the adventurers themselves.

Internet Partnerships
Programs that link students to their peers in other schools and other countries: keypal programs that pair foreign language students across borders, cooperative research programs that gather data from science students around the world and collaborations organized by individual teachers.

STRATEGIES FOR TEACHING WITH ICFC

Curriculum Enrichment
Infuse new content into your current lesson plans and lectures—add an interactive map, an animation of molecular structure, or an audioclip of a historic speech, or build new lessons around resources that were never available before.

Lesson Enhancement
Open a new dimension for learning in your classroom—visit an archeological dig, run experiments at a science museum, tour a Gothic cathedral or launch your students online to renegotiate the Constitution or reorchestrate tunes for Ellington's band.

Learning Experience
Create your own content by charting a path of discovery through cyberspace. You can design:

- **Portfolio Projects**—let students construct their own view of a subject by gathering content from selected sites.
- **Journal-Keeping Projects**—send students to a series of Web pages with questions designed to spark reflection on what they find.
- **Fact-Finding Projects**—turn students into detectives scouring selected Web sites for the answers to your questions.
- **Research Projects**—give students a list of Web sites that will add depth to their term papers.

Teaching Tool
Use the interactive nature of the Internet to engage students in inquiry-based learning, for example:

- **Challenge Activities**—have students develop evidence at selected sites to substantiate or refute a stated position.
- **Discovery Activities**—guide students through a series of online investigations in search of answers to a mystery or puzzling question.
- **Problem-Solving Activities**—create a scenario in which students evaluate competing points of view and formulate their own solutions.
- **Decision-Making Activities**—frame a controversy and guide students to sites where they can develop a position of their own.

CASE STUDY URLs

Language Arts

"Stormy Stories" (Xpeditions) -
www.nationalgeographic.com/xpeditions/activities/07/stormy.html

"Worth a Thousand Words: Depression-Era Photographs" (EDSITEment) -
http://edsitement.neh.gov/view_lesson_plan.asp?id=304

"Biographies: Creating Timelines of a Life" -
http://www.readwritethink.org/lessons/lesson_view.asp?id=26

"Getting the *ig* in Pig: Helping Children Discover Onset and Rime" -
http://www.readwritethink.org/lessons/lesson_view.asp?id=103

Social Studies

"The Changing Face of Money" (EconEdLink) -
http://www.econedlink.org/lessons/index.cfm?lesson=EM179

"Evaluating Eyewitness Reports" (EDSITEment) -
http://edsitement.neh.gov/view_lesson_plan.asp?id=281

Science

"Reaction Time" (Science NetLinks) -
www.sciencenetlinks.com/Lessons.cfm?DocID=68

"Exploring the Solar System" (Science NetLinks) -
www.sciencenetlinks.com/Lessons.cfm?DocID=165

Mathematics

"Whelk-come to Mathematics" (Illuminations) -
http://illuminations.nctm.org/imath/912/Whelk/index.html

"Uncertainty" (Science NetLinks) -
www.sciencenetlinks.com/Lessons.cfm?DocID=107

Fine Arts

"The Colors of Ellington's Band" (ArtsEdge) -
http://dellington.org/lessons/lesson02.html

"What Portraits Reveal" (EDSITEment) -
http://edsitement.neh.gov/view_lesson_plan.asp?id=255

CASE STUDY WORKSHEET

Use this sheet with the Framework for Integrating ICFC handout to analyze a sample lesson plan from one of the MarcoPolo Content Partner Web sites. The worksheet is designed to help you see how the lesson plan is put together in preparation for developing lesson plans on your own, and to spark ideas for adapting MarcoPolo lesson plans to your own classroom needs.

Lesson Title:
Subject Area(s):
Grade Level:
Content Partner Site: **URL:**
Objectives: *Describe briefly what students will learn.*

Content Standards

MarcoPolo lessons are compatible with national content standards. You may prefer to analyze the lesson in terms of your own state or local standards. To check state standards online, visit the Standards section of the Reference Shelf area at EDSITEment or the Standards section of the Professional Resources area at ARTSEDGE.

Learning Goals

What knowledge do students gain through this lesson?

Skills Development

What learning skills does the lesson reinforce?

CASE STUDY WORKSHEET

Internet Content for the Classroom

Describe all the Internet content used in the lesson plan. Refer to the Framework handout for a chart listing various types of content.

Description	Type

Classroom Resources Required

For example, Internet-equipped student computers, printers, laboratory equipment, art supplies.

Teaching Strategy

Describe how ICFC is integrated into the learning process. Refer to the Framework handout for a chart listing various ways to teach with Internet content.

Lesson Development

Summarize the main stages of the learning process outlined in the lesson plan.

CASE STUDY WORKSHEET

Building on the Model

Explain how you could apply this model in your teaching by describing a lesson plan that you might develop along the same lines.

MARCOPOLO TOPIC RESOURCE LIST

Whether your interest is language arts, social studies, geography, science, mathematics or the arts, MarcoPolo has Internet content for your classroom. Try one of these topics, each with a resource list ready-made for lesson planning. Use the MarcoPolo Search Engine to discover additional resources or to see what MarcoPolo has to offer on a topic important to your curriculum.

MARCOPOLO RESOURCES ON ROBERT FROST

"After Apple-Picking" with a Brief Commentary
http://www.wsu.edu/%7ewldciv/world_civ_reader/world_civ_reader_2/frost_apple.html

A Frost Bouquet: An Exhibit on Robert Frost and His Family
http://www.lib.virginia.edu/exhibits/frost/home.html

Frost Reading His Poems
http://www.poets.org/LIT/poem/rfrost01.htm
http://town.hall.org/Archives/radio/IMS/HarperAudio/012294_harp_ITH.html

Frost's Poetry Up to 1920
http://www.bartleby.com/155/

MARCOPOLO RESOURCES ON HARRIET TUBMAN

Fugitive Slaves and Northern Racism
http://www.pbs.org/wgbh/aia/part4/4narr3_txt.html

Harriet the Moses of Her People
http://ibiblio.org/docsouth/harriet/harriet.html

Harriet Tubman Integrated Study Unit
http://artsedge.kennedy-center.org/teaching_materials/curricula/curriculum.cfm?curriculum_id=37&mode=overview

Harriet Tubman Profile
http://www.pbs.org/wgbh/aia/part4/4p1535.html

Music and the Underground Railroad
http://artsedge.kennedy-center.org/cuesheet/9899/pdf/undergroundrrcover.pdf

The Progress of a People: Work Among Our Women
http://memory.loc.gov/ammem/aap/aapwomen.html

Resources for Harriet Tubman and the Underground Railroad
http://artsedge.kennedy-center.org/teaching_materials/curricula/curric/tubman/harrietsrp.html

Spirituals Lesson Plan
http://edsitement.neh.gov/view_lesson_plan.asp?id=318

MARCOPOLO RESOURCES ON DINOSAURS

A Dinosaur's Backyard
http://www.nationalgeographic.com/xpeditions/activities/04/dinosaurs.html

Chicago Children's Museum: Dinosaur Expedition
http://www.chichildrensmuseum.org/exhibit_details.cfm?exhibit_id=16

Comets and the K/T Event at Jason X
http://www.jasonproject.org/expeditions/jason10/research/blast.html

Elephants on the Range
http://www.sciencenetlinks.com/sciupdate/elephants.html

Woolly Mammoth
http://school.discovery.com/schooladventures/woollymammoth/index.html

Zoom Dinosaurs
http://www.enchantedlearning.com/subjects/dinosaurs/index.html

MARCOPOLO RESOURCES ON BASEBALL STATISTICS

Does More Wins Mean More Fans at the Ballpark?
http://score.kings.k12.ca.us/lessons/ballpark.htm

Economics of Professional Sports
http://www.econedlink.org/lessons/index.cfm?lesson=NN146

Homerun Numbers
http://www.maa.org/mathland/mathtrek_9_28_98.html

Math and Science in Baseball
http://library.thinkquest.org/2917/

New Kids in the Hall: Analyzing Baseball Hall of Fame Statistics
http://www.nytimes.com/learning/teachers/lessons/1999010>thursday.html?searchpr=learning_lessons

Probability and Sports
http://www.shodor.org/interactivate/lessons/pm7.html

Pythagoras Plays Ball
http://www.maa.org/mathland/mathland_3_25.html

MARCOPOLO RESOURCES ON AMERICAN ARCHITECTURE

American Landscape and Architectural Design, 1850–1920
http://memory.loc.gov/ammem/award97/mhsdhtml/aladhome.html

Architecture and Nature Lesson Plan
http://artsedge.kennedy-center.org/teaching_materials/curricula/curriculum.cfm?curriculum_id=4&mode=overview

Architectural Clues Lesson Plan
http://artsedge.kennedy-center.org/teaching_materials/curricula/curriculum.cfm?curriculum_id=6&mode=overview

The Built and Natural Environment Lesson Plan
http://artsedge.kennedy-center.org/teaching_materials/curricula/curriculum.cfm?curriculum_id=42&mode=overview

Frank Lloyd Wright: Designs for an American Landscape, 1922–1932
http://lcweb.loc.gov/exhibits/flw/flw.html

Learn More About It: Architecture and Interior Design for 20th Century America
http://memory.loc.gov/ammem/ndlpedu/got/gotintro.html

Medieval New York
http://www.fordham.edu/halsall/med/medny.html

Spaces and Places Study Unit at Getty Institute ArtsEdNet
http://www.getty.edu/artsednet/resources/Sampler/b.html

MARCOPOLO LESSON PLANNING GUIDE

Ready to start integrating MarcoPolo's *Internet Content for the Classroom* into your curriculum? Here's a step-by-step guide.

Step One
Get Focused
The educational possibilities are endless at MarcoPolo, so before you go online, sharpen your focus. Decide on a topic for your lesson plan and describe your general objective—what your students will learn. You can always change direction if you find something that sparks a better idea.

Topic:	
Objective:	
Grade Level:	**Subject Area:**

Step Two
Search for Resources
Now you're ready to browse the MarcoPolo Content Partner sites for resources that meet your curricular needs. Start with the site that covers your subject area, but remember to check other sites for resources as well.

Use a chart like this one to make notes on the resources you find. It provides space to list lesson plans, links to reviewed Web sites and other online resources, such as the exhibits at Xpedition Hall. When you find something promising, bookmark the page in your browser and jot down the URL as a back-up. Then make a note about how you might use the resource in your lesson plan. Remember to use the MarcoPolo Search Engine to locate MarcoPolo resources you might overlook while browsing.

MarcoPolo Content Partner Site		
Lesson Plans	**URL**	**How to Use**
Reviewed Web Sites		
Other Resources		

MARCOPOLO LESSON PLANNING GUIDE

Step Three
Check Your Benchmarks
By this stage, you have probably begun to form ideas regarding your lesson plan. If the ideas are really bubbling, you might want to skip ahead and start outlining your strategy. Before you finalize the lesson plan, however, you'll want to make sure it meets your curricular requirements.

Use this chart to jot down the content standards your lesson plan will address, the specific learning goals you have in mind for your students and the learning skills your plan will reinforce. Putting these goals in writing can help target your plan for positive results in the classroom. And because MarcoPolo resources are standards based, you already have a headstart.

Standards Alignment
Content Standards:
Learning Goals:
Skills Development:

Step Four
Outline Your Strategy
Now it's time to put the pieces of your lesson plan together. Start with a guiding question. This is a simple way to refine your topic and re-think your general objective in concrete terms. Putting the aim of your lesson in question form can also help you decide which of the resources you've collected will help students come up with answers.

Guiding Question

?

Next, outline your strategy using a chart like the one provided on the next page. List the steps for presenting your lesson, describing what your students will do at each stage and the MarcoPolo resources they will use. Try to include ideas for questions you will ask and directions for student activities. This is also a good time to make a note about special materials you might need or special preparations you'll need to make. For example, you might need a computer projector at some stage in your lesson, or you might need to print out and photocopy an online resource.

MARCOPOLO LESSON PLANNING GUIDE

Lesson Strategy		
	MarcoPolo Resources	**Materials/Preparations**
Opening		
Development		
Conclusion		

MARCOPOLO LESSON PLANNING GUIDE

Step Five
The Finishing Touch

By this point, you should have a clear road map of your lesson objectives and the path students will follow to reach them. All that remains is creating the elements you'll need to guide them on their way. Use this last set of charts to plan a student handout that sets a direction for their discoveries and clearly describes their goal.

Introduction

Begin with a few sentences that set the stage for your students. Create a context for inquiry by providing background, and try to frame the topic in a way that will help orient their investigations.

Task

Describe the objective of your learning activity and how students will achieve it. This might be a scenario that casts students in specific roles or a simple step-by-step assignment. For information-gathering projects, indicate the kinds of evidence or examples students should find. For inquiry-based activities, outline the stages students should follow to reach a solution.

Online Resources

List the online resources students will use for the learning activity in the order in which students should access them. When possible, send students to specific Web pages, and when necessary, include directions for locating pertinent information on the page.

MARCOPOLO LESSON PLANNING GUIDE

Guiding Questions

Develop a question or two for each stop on your students' online journey to help structure the learning experience and prompt critical thought. You might integrate your questions into your listing of online resources or gather them together as an aid to reflection.

Outcome/Assessment

Explain how you will assess your students' success in meeting the lesson's objectives. If you plan to base your assessment on their completion of a project or assignment, describe it here.

Extension

Consider how your students might build on this lesson. Offer suggestions for sharing what they have learned with their families and making it part of their world.

And with that, your lesson planning is complete. But you might still want to put your lesson into final shape by filling out the MarcoPolo Lesson Plan Template. It's an easy way to review your plan and even re-think some parts of it. A copy of the template is included as pages 6–7 of this handout.

MarcoPolo Lesson Plan Template		
Title:		
Objectives:		
Grade Level:	**Subject Area:**	**Time Required:**
Standards Alignment		
Content Standards:		
Learning Goals:		
Skills Development:		
Internet Resources		
Lesson Plans:		
Web Sites/Web Pages:		
Other:		
Classroom Resources		
Materials:		
Equipment:		

MarcoPolo Lesson Plan Template
Guiding Question:
Lesson Development:
Student Handouts
Outcome/Assessment

PART 5: TEACHING WITH *INTERNET CONTENT FOR THE CLASSROOM*

Time Required: 2.5 hours

Objectives:
- To examine factors that have an impact on the practical mechanics of teaching with *Internet Content for the Classroom*.
- To gain experience in preparing an *Internet Content for the Classroom*–based lesson plan for presentation in a variety of classroom situations.
- To exchange ideas for coping with class preparation and classroom management issues connected with the use of Internet-equipped classroom computers.

Handouts:

Summary
This part of the training program focuses on techniques for using *Internet Content for the Classroom* effectively in a variety of teaching situations. Participants first consider some factors that influence how Internet resources can be used in the classroom, then work in teams to prepare a lesson plan for implementation in several classroom settings. Finally, participants review suggestions for handling some special concerns associated with computers in the classroom.

Training Tips

- **Emphasize classroom realities.**
  This part of the training program explores the borderland between cyberspace and the physical space of traditional classroom learning. It offers participants an opportunity to develop strategies for teaching effectively in this borderland, whatever the physical realities of their classroom situation may be. Emphasize these realities throughout this phase of the training. Ask participants to describe their classroom situations in detail—how many computers, their technical capabilities, how they are set up in the classroom, how long it takes to move students to and from the computers, how their students react when Internet content enters the learning experience on screen. Recognizing realities like this is the first step toward developing a personal strategy that will make Internet content a reality in the classroom as well.

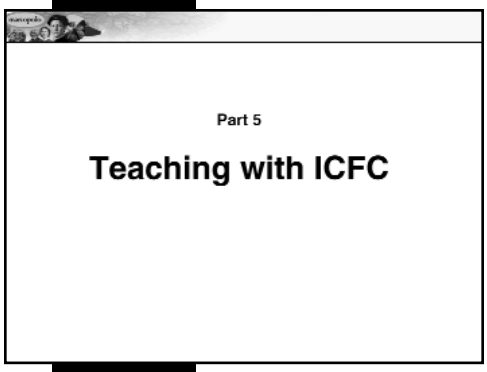
- **Guard against "If-Only-itis."**
  "If only I had more computers....If only I had faster connections....If only my students could cooperate..." This might be how some participants feel after seeing the full potential of MarcoPolo's *Internet Content for the Classroom:* "It's a great resource, but I'm just not set up yet to take advantage of it." One important goal of this part of the training program is to persuade teachers that they can use MarcoPolo content in any classroom—even one without a computer—today. Be on the lookout for "If-Only-itis" in your group, ask those afflicted with this condition to explain the barriers they perceive, and work with your group to develop strategies for getting over, under, or around those barriers.

- **Create a test lab environment.**
  Participants should realize that experts haven't come up with all the answers for integrating Internet content into the everyday classroom routine. On the contrary, teachers across the coun-

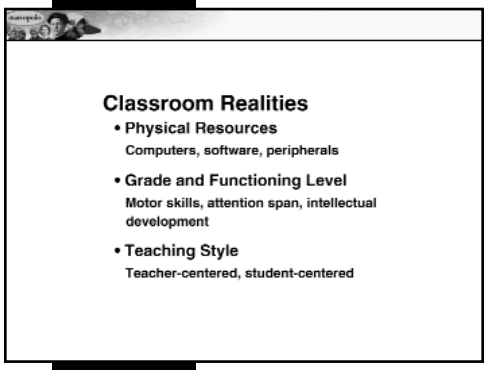
Training Tips (continued)

try are constantly testing new ideas in this area, learning what works by trial and error. And since every combination of teacher, students and classroom is to some degree unique, it's likely that this testing will continue for a long time. Invite your group to join in this effort. Encourage them to see this part of the training session as a warm-up for experiments they will conduct in their own classrooms, with their own students. And urge them to share the results of those experiments with the MarcoPolo community by joining the MarcoPolo's listserv community located at the Teacher Resources section of our site.

- Additional training tips related to classroom management issues are included online at the MarcoPolo Trainer Resource Center (http://www.marcopolo-education.org/pd/ftrc.aspx) and offline on the MarcoPolo Training CD-ROM. Additional training tips related to classroom management are located in the Teacher Resources section under "How to Use MarcoPolo."



Part 5 Slide 1



Part 5 Slide 2

1. Begin by reminding participants that developing a lesson plan is only part one of the teaching process. One still has to implement the lesson, and that can mean coping with classroom realities.
2. Explain that in this part of the program participants will take a look at some classroom realities that can have an impact on teaching with Internet content, and that they will add some muscle to their coping skills by adapting a MarcoPolo lesson plan to a variety of classroom situations.
3. Lead a discussion exploring classroom realities that can have an influence on how teachers use Internet content. Focus your discussion on the three factors outlined here:
   - **Physical Resources:** The most obvious factor. How many Internet-equipped computers are available? How fast are their connections to the Web? How up-to-date is their software, including support applications such as Acrobat® Reader,® Java, RealMedia and Shockwave? Is there a computer projector or large-screen monitor in the classroom? A quality printer? The answers to all these questions will influence how a teacher uses Internet content. But even when the physical resources are zero—no computers—a teacher can still use Internet content in class.
   - **Grade and Functioning Level:** Students are enthusiastic, and often savvy, computer users at every age. But Internet teaching methods appropriate for high school are not going to work in kindergarten. Young students may lack the motor skills and attention span required for some online activities. By the same token, older students may be too susceptible to online distractions for assignments based on self-directed browsing. In short, just as grade level determines what one teaches, it will determine how one teaches with Internet content as well.
   - **Teaching Style:** Internet content lends itself to different teaching styles. Those who favor a teacher-centered approach and see themselves as knowledge providers can use Internet resources as effectively as those who favor a student-centered approach and see themselves as learning facilitators. Such differences have an impact, however, on the way a teacher uses Internet content in class, as do more personal aspects of teaching practice, such as whether or not a teacher moves around the classroom and how a teacher typically elicits student response.

Adapting to Different Classroom Situations

4. Put these three factors together to create a matrix of classroom situations for participants. Explain that they will divide into class planning teams to prepare one of the four lesson plans listed in the matrix for each of these classroom situations. Briefly describe the four lesson plans:

- **I've Seen That Shape Before** (K–2)

  Illuminations

  http://illuminations.nctm.org/lessonplans/prek-2/shape/index.html

  Students learn the names and explore properties of solid geometric shapes, then identify these shapes in the real world and in pictures on the Internet.

- **You Decide** (3–5)

  EconEdLink

  http://www.econedlink.org/lessons/index.cfm?lesson=EM396&page=teacher

  Students develop skills using a decision-making model to improve their ability to make reasoned choices. In the process, they discover that all resources are scarce, and, as a result, choices must be made that result in some items being "given up."

- **Yellowstone Wolves** (6–8)

  Science NetLinks

  www.sciencenetlinks.com/Lessons.cfm?DocID=78

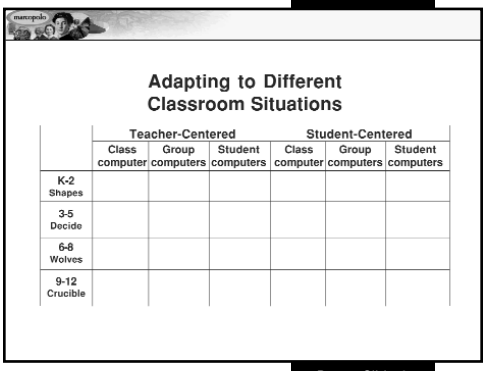
  Students investigate the controversy stirred by the reintroduction of wolves into Yellowstone National Park, weighing the evidence to formulate their own position on the issue.

- **Dramatizing History in Arthur Miller's *The Crucible*** (9–12)

  EDSITEment

  http://edsitement.neh.gov/view_lesson_plan.asp?id=440

  Students consider how Arthur Miller interpreted the facts of the Salem witch trials and how he successfully dramatized them in his play, *The*



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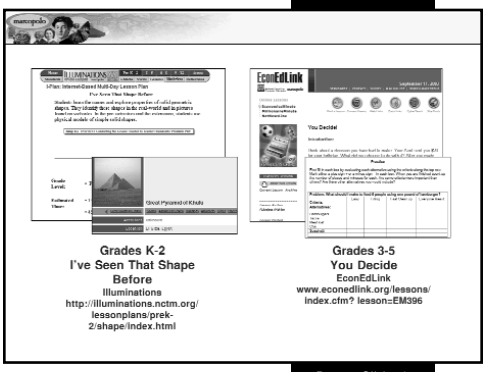

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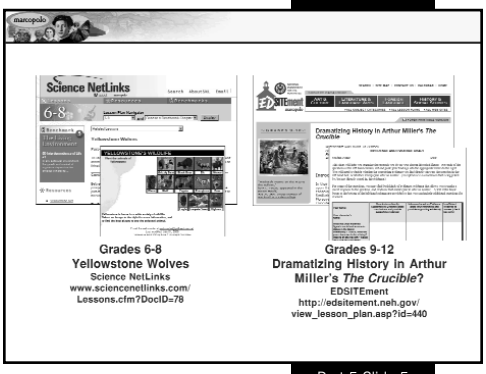
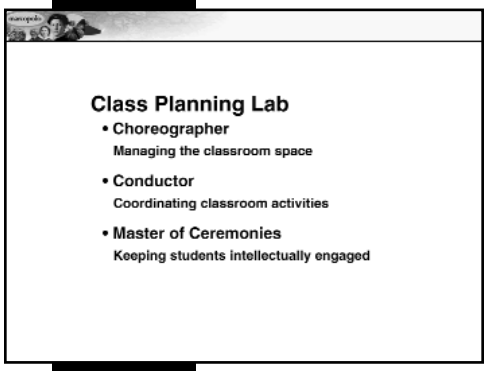


Part 5 Slide 5

Crucible. They explore historical materials, such as the biographies of key players (the accused and the accusers) and transcripts of the Salem witch trials themselves.

5. Have the group choose a lesson plan based on their common interest in the subject area or their common experience teaching at that grade level. Divide the group into planning teams and assign each team a different one of the six classroom situations outlined on the matrix.

- Teacher-centered presentation with:
  - one computer in the classroom.
  - computers for small groups.
  - computers for every student.
- Student-centered presentation with:
  - one computer in the classroom.
  - computers for small groups.
  - computers for every student.



Part 5 Slide 6

Handout 5-1 ▶

Class Planning Lab

6. Distribute copies of the Class Planning Lab handout **(Handout 5-1)**. Have each team mark its assignment on the matrix, and point out the URL for the lesson plan they will be working with.

- Briefly review the handout with the group, answering any questions participants may have. You may wish to focus especially on the three teacher roles outlined in the handout (choreographer, conductor and master of ceremonies).
- Call attention to step 6 on the handout, which asks each team to develop a student handout as part of its plan—something that a teacher could put into students' hands to organize and structure their learning experience. Talk briefly about the possibilities listed on the Class Planning Lab handout (a checklist, a record-keeping form, a set of questions, a visual organizer, etc.), and, if time permits, have participants brainstorm additional ideas.
- Explain that each team should work out a detailed plan for adapting the lesson plan to their assigned classroom situation, and prepare to present this plan to their colleagues.

7. When they have completed their preparations, have each team walk the group through its strategy for implementing the lesson in its assigned classroom situation. If time permits, invite teams to demonstrate their ideas by teaching parts of the lesson to the group. Use the questions and suggestions below to highlight some of the practical issues involved in this exercise. Additional ideas for addressing some of these issues are included in the Class Preparation and Classroom Management Tips sheet **(Handout 5-2)**.

◀ Handout 5-2

Making Physical Contact

- *In a classroom with a single computer, how do you manage it so that all students can see and interact with what's on the screen?* Sometimes the best answer is, Take the content off the screen and print out copies for all students. In other circumstances, a teacher might have students take turns coming to the computer, as they now come to the chalkboard or assist in a demonstration.
- *In a classroom with computers for small groups, how do you ensure that all members of each group come in contact with the lesson's content?* This is usually a question of managing group dynamics and can be addressed by assigning group members specific roles as computer operators and specific responsibilities within the lesson.
- *In a classroom with a computer for each student, how do you handle situations in which individual students lose contact with the lesson—for example, the screen goes blank, the student lags behind or loses her place or wanders into an online byway?* This question underscores the importance of monitoring student progress. Move around the classroom if the lesson is student-centered. Ask questions to confirm that students stay connected if the lesson is teacher-centered. And be prepared to intervene when a student loses touch.

For information on managing bookmarks, see the Glossary of this Teacher Training Kit, page VII.9.

Staying on Track

- *What is a student supposed to do when a lesson plan says "explore"?* This is a question teachers can answer with a handout that directs students systematically through a Web site, exhibit or online activity by setting goals, raising questions or establishing checkpoints along the way.
- *How can you be sure students are at the right Web location, looking at the right part of a Web page, typing the right keyword into a search engine?* The question of getting students to the right location can be answered by creating bookmark or favorites folders that students can use to navigate from one site to another. Close monitoring is the best way to check that students are seeing and doing what you expect of them.

Intellectually Engaged

- *In a teacher-centered lesson, how do you keep students involved and attentive?* With young students, especially, it can be effective to turn the usual question and answer into a game: "Who can see...?" "How many can you find?" "Where is the...?" For older students, a worksheet or record-keeping handout can be helpful and can provide a check that all members of the class are following along.
- *In a student-centered lesson, how do you keep group members or individual students focused on the task?* Handouts can provide the answer here, especially those designed to engage students in an activity or scenario.

8. At some point during each team's presentation, interrupt to announce a technical difficulty: a student's computer is frozen, the classroom's Internet access has gone down, a Web site is temporarily unavailable. Have the team respond to this crisis and have the whole group brainstorm additional ideas for coping with such mishaps.

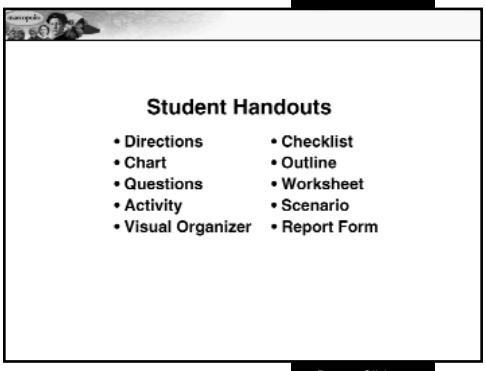
Student Handouts

9. During each presentation, focus on the student handout the team has included in its class plan in order to help participants recognize the benefits of putting something concrete into students' hands. For example:

- A checklist-style handout can help students organize and absorb an online learning experience.
- A worksheet-style handout can help students bridge the gap between the online and "on paper" parts of a classroom activity.
- An outline-style handout can provide a memory aid, helping students recall what they have learned online.
- An activity-style handout can be designed to help a teacher assess how well students have met a lesson's objectives.
- Any handout can serve as a reminder of classroom policies for computer use and include a pledge that students must sign.

10. As part of this discussion, note also that handouts can help one gauge whether students are making efficient use of their time online.

- For example, a handout that asks students to answer questions or enter data as they navigate through a series of Web pages can provide clues to their Internet skills, helping a teacher identify those who may need extra coaching.
- By the same token, because such a handout will help identify students who may have wandered away from the assignment, it can serve to promote accountability as well.
- Encourage participants to recognize that, in addition to their value as study guides, handouts can play a useful role in monitoring what students are doing online and can help keep them engaged with the task at hand.



Part 5 Slide 7

For another approach to monitoring students' online activities, see the information on content filters in the Appendix, page VII.3.

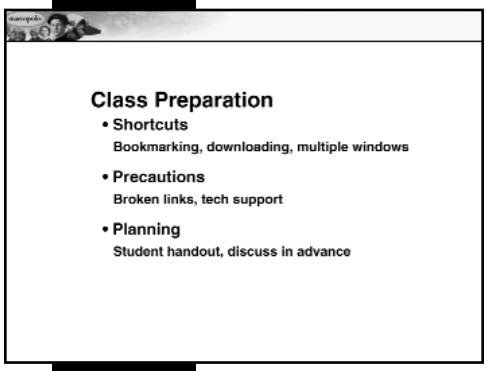
11. If time permits, after all teams have made their presentations, discuss as a group how you could adapt the lesson you worked on for the other grade levels on the matrix.

- Have each team consider how they would modify their situation-specific class plan for older or younger students. Are some techniques effective across many grade levels? Are there common solutions to problems that arise with students of every age—poor attention, technical skill deficiency, horsing around?
- Point out in this discussion that the grade level information provided by the MarcoPolo Search Engine would be especially useful for finding content to make the lesson simpler for younger students and more complex for older ones.

Handout 5-2 ▶

12. Conclude this look at the practical mechanics of making Internet content work in the classroom by distributing copies of the Class Preparation and Classroom Management Tips sheet **(Handout 5-2)**.

- Review these pointers in a group discussion, having participants draw on their class planning exercise to illustrate situations in which certain tips would be especially helpful. Also invite participants to add tips they may have learned through their own experience or from colleagues.
- Note that on this front the discipline emerging around *Internet Content for the Classroom* is still very much in the anecdotal stage, passing along ideas learned by trial and error. Encourage participants to pass along their own ideas—and warnings—through MarcoPolo's listserv. Participants can subscribe to this listserv at http://www.marcopolo-education.org/teacher/mp_listserv.aspx.



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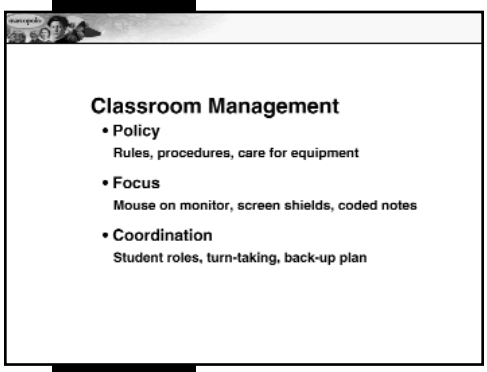
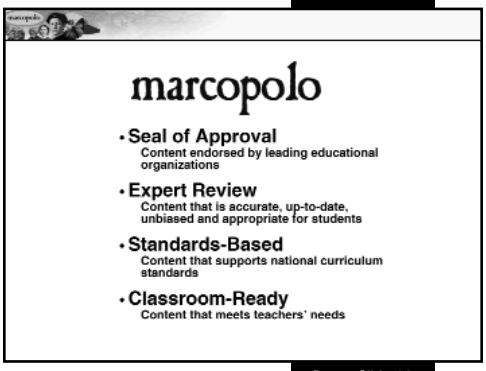


Part 5 Slide 9

13. To bring your training session to a close, ask participants if they feel ready to try teaching with the Internet resources MarcoPolo makes available. Use this opportunity to address any questions participants may have and to reinforce the key features that set MarcoPolo apart from other educational content providers:

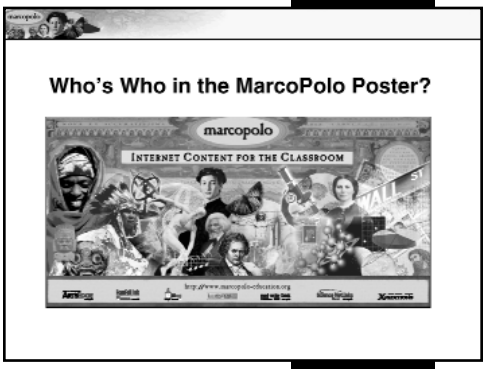
- **Seal of Approval:** content endorsed by the nation's leading educational organizations.
- **Expert Review:** content that is accurate, up-to-date, unbiased and appropriate for students.
- **Standards-Based:** content that supports national curriculum standards.
- **Classroom-Ready:** content that meets teachers' needs, combined with curricular materials they can really use.



Part 5 Slide 10

14. Emphasize that these features also make MarcoPolo the best answer yet to the most practical question teachers ask about teaching with *Internet Content for the Classroom:* Where do I find the time? Suggest to your group that MarcoPolo's classroom-ready lesson plans and other teaching materials make it quick and easy to begin integrating Internet resources into their classes. And the seal of approval at every MarcoPolo Content Partner site makes it easy to find Internet resources that students can use safely on their own.

15. Give participants a final push toward their goal by asking the members of your group to name something they learned in this training session that they plan to try out in class next week. Call on the group to offer suggestions to anyone who can't think of an answer to your question. Then conclude by explaining that there is at least one MarcoPolo learning activity that almost anyone can use in class next week, even if they never look at a computer again—**Who's Who in the MarcoPolo Poster?** Display the poster, pass out copies of this activity sheet **(Handout 5-3)** and have some fun.



Part 5 Slide 11

◀ **Handout 5-3**

Class Planning Lab

Teachers across the country are testing new ideas for using *Internet Content for the Classroom* in different classroom situations. Here's your chance to conduct a test of your own by adapting the lesson plan selected for your group to the teaching situation assigned to your team. Mark your assignment on this matrix, then follow the guidelines below to develop a class plan for group presentation.

	Teacher-Centered			Student-Centered		
	class computer	group computers	student computers	class computer	group computers	student computers
Example **Chicago Fire**					**X**	
Grade K–2 **Shapes**						
Grade 3–5 **Decide**						
Grade 6–8 **Wolves**						
Grade 9–12 **Crucible**						

Guidelines

1. Read the lesson plan to become familiar with its overall structure and direction. If possible, print out the lesson plan so that you can mark it up with your presentation ideas.
2. Identify those parts of the lesson plan that bring students into contact with *Internet Content for the Classroom*. Your preparation should focus on implementing these stages of the learning process effectively, given the resources of your classroom situation.
3. Note how students are expected to work with *Internet Content for the Classroom*. For example, the lesson plan may call for them to explore an online resource or complete an online activity. Follow the lesson plan's links to see what kind of content students will be working with and to gain a more concrete sense of what they will do.
4. Now begin to visualize how the lesson will unfold in your classroom situation and how you will manage the learning process. You might find it useful to see yourself in these roles:
   - **Choreographer:** In this role, you are concerned with the classroom space. Given the resources of your situation, how will you bring students into physical contact with *Internet Content for the Classroom?* How will you arrange for them to see what is on the screen, click on links and interact with online content?
   - **Conductor:** In this role, you are the coordinator of classroom activities. Given the kinds of content used in the lesson plan, how will you guide students through cyberspace? What directions will they need to find their way in a Web site or on a Web page? How will you monitor their actions to make sure they stay on track?
   - **Master of Ceremonies:** In this role, you direct your students' attention. Given the kind of work called for by the lesson plan, how will you keep them focused and engaged? How will you help ensure that their efforts are productive? How will you assure yourself that they are making progress toward the lesson's learning goals?

Class Planning Lab (continued)

5. Work with your team to develop a class plan for the lesson that fits your teaching situation. Prepare to demonstrate or explain how you would conduct the lesson: how you would arrange the classroom, how you would direct the learning process, how you would keep students intellectually involved. Feel free to modify the lesson plan in any way that you feel is appropriate. You can lay out your class plan in the space below or on a separate piece of paper.
6. As part of your plan, design or describe a student handout—a sheet that you could put into students' hands to help organize and structure their learning experience. Some possibilities to consider:
   - A set of directions.
   - A checklist of objectives.
   - A chart or record-keeping form.
   - An outline.
   - A series of guiding questions.
   - A worksheet.
   - A visual organizer (diagram, map, etc.).
   - A script or scenario.
7. Finally, consider the inevitable technical difficulties: frozen screens, slow downloads, windows accidentally closed, etc. Brainstorm techniques for handling such mishaps, and expect to encounter one during your presentation to the group.

Classroom Organization

Process and Procedures

Student Handout

Rules of Engagement

Class Preparation and Classroom Management Tips

Here are some tested techniques to help you integrate *Internet Content for the Classroom* into your teaching practice. Most teachers are still learning how to work effectively with *Internet Content for the Classroom,* and many of these ideas were discovered through trial and error. If you've developed techniques of your own, or have a tip passed along by a colleague, add it to this list in the space provided and share it in your group discussion. You can also exchange ideas by subscribing to MarcoPolo's Listserv, an online community of educators working to make *Internet Content for the Classroom* an integral part of every child's education. To join the listserv, visit http://www.marcopolo-education.org/teacher/mp_listserv.aspx.

CLASS PREPARATION TIPS

Shortcuts

1. As you gather resources, bookmark any Web page that seems promising so that you will be able to find it again when you are ready to prepare a class.
2. Edit your bookmark file to create folders where you can gather bookmarks on separate topics. You can also create individual folders for the bookmarks you plan to use in different classes, and copy these folders to students' computers to simplify navigation.
3. Download large images beforehand, especially if your connection is slow. During class you can access these images on your hard drive with the Open File or Open Page command on your browser.
4. Use multiple windows on-screen to move quickly back and forth between Web pages or to work your way quickly through a list of links. To set up multiple windows, hold down the mouse button on a link (Mac) or right-click (PC) and select the New Window option in the pop-up menu.

Precautions

5. Check links before you use them in class so you can plan to work around any that may be broken.
6. Discuss planned Internet projects with your technology coordinator to ensure that your equipment is working properly and that you have the resources you will need. Also, determine with your coordinator where it would be best for you to save downloaded files, especially in situations where memory is an issue.

Planning

7. Set clear expectations and answer students' questions before going on computers. For example, prepare or print out directions that you can review together before students go online to visit an interactive exhibit or complete a learning activity. In a computer lab or media room setting, have this discussion before going into the lab.
8. Work with your technology coordinator to develop a simple Web page where students can find directions and links for online assignments.

CLASSROOM MANAGEMENT TIPS

Policy

1. Develop a written classroom policy for computer use that covers issues such as browsing in nonassigned Web sites; personal use of e-mail; obtaining permission to download images, audiofiles and videoclips; citation of online sources; care and treatment of hardware; and student behavior. Have students and their parents sign a copy of your classroom policy to indicate that they understand, accept and will abide by it. (Note: Your district may already have a formal policy for this purpose.)

Focus

2. To prevent students from browsing while sitting at their computers during a lecture or class discussion, have them put their mouses on top of their monitors. This trick can eliminate the clicking sound of restless fingers, too.

Class Preparation and Classroom Management Tips (continued)

3. To help students shift focus from their monitors to a class presentation or class discussion, keep a manila file folder beside each computer and have students open it on top of the monitor so that half of the folder hangs down over the screen.
4. During online projects, give students two small sticky notes in different colors to use as silent signals that they need help. Use one color to mean, "I need help/have a question, but can keep working while I wait." Let the other color indicate, "Help! I can't do anything," for an emergency like a frozen screen.

Coordination

5. Train a cadre of students to help with simple problems that may arise when using computers. For example: Printer Manager—replaces paper in the printer, clears any paper jams, changes printer cartridge; Disk Specialist—Passes out and collects disks, maintains surplus supply; Search Expert—Uses more advanced search skills to help classmates find information, teaches advanced search skills to peers as the need arises; Mouse Wrangler—cleans a mouse to achieve better performance, checks wire to be sure mouse is connected properly.
6. Assign roles when students work at computers in small groups. Appoint one student as group leader, responsible for asking questions about the assignment or computer operations. Other students can be assigned roles as mouse operator, keyboardist, note-taker, consensus-shaper (responsible for group decisions). Switch roles periodically to keep each group working smoothly. You can also foster cooperative learning by having members of the group take responsibility for gathering information from various Web pages visited during an assignment.
7. Where Internet access is limited, create a system to ensure that each student gets a turn to work online. For example, you could write your students' names on cards and store them in an envelope, then draw names to determine who will have the first turn. When they are finished, those students then draw the names of students who go next. Let each group of students explain the assignment and provide technical assistance to the group that comes after them so that you are free to work with the class.
8. In a classroom with 1–3 computers, set up each computer as a learning station where students complete a specific task. Have other noncomputer stations set up in the classroom and let groups rotate stations at given time intervals.
9. Require students to ask for approval before printing a Web page. If a page has extensive graphics that are unimportant to the student's purpose, save it to the hard drive using the Save As Text option, which saves only the text from the page, then print offline.
10. Always have a backup plan, especially when working in a lab setting. For example, if students will be using sites that are very slow to load, have them bring something related to the assignment to read while they are waiting.

ADDITIONAL TIPS

Who's Who in the MarcoPolo Poster?

The Internet is the latest chapter in the long story of human exploration and innovation. And somewhere in the millions of Web pages that make up this new chapter, all the chapters that preceded it are waiting for you to put them together. Start making history today with this *Internet Content for the Classroom* challenge.

Part 1

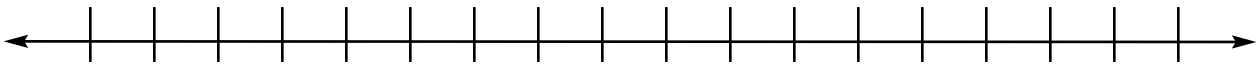
How many of the people, places and things on the MarcoPolo poster do you recognize? All the names are given here. Match them with the poster by writing the image number shown on the diagram to the correct name.

_____ A. Beethoven
_____ B. Bronzino's Italian Nobleman
_____ C. Chinese dragon
_____ D. Clara Barton
_____ E. Discobolus
_____ F. Discovery
_____ G. Frederick Douglass
_____ H. Leonardo's Vitruvian Man
_____ I. Marco Polo
_____ J. microchip
_____ K. microscope
_____ L. molecule
_____ M. Native American
_____ N. Nefertiti
_____ O. Queen Elizabeth II
_____ P. Saracolle woman
_____ Q. skull
_____ R. Toltec figure
_____ S. Wall Street

Part 2

Most people can figure out the difference between Marco Polo and a microchip, so it's likely that you did fairly well on this quiz. That's why we included a second part. The challenge this time is to put all these pieces of the human story into chronological order. Just write each letter into the appropriate place on this timeline. Good luck!

THEN **NOW**



Who's Who in the MarcoPolo Poster?

Answer Key

Part 1

9	**A. Beethoven**	7	**G. Frederick Douglass**	5	**N. Nefertiti**
8	**B. Bronzino's Italian Nobleman**	10	**H. Leonardo's Vitruvian Man**	18	**O. Queen Elizabeth II**
4	**C. Chinese dragon**	19	**I. Marco Polo**	1	**P. Saracolle woman**
15	**D. Clara Barton**	14	**J. microchip**	12	**Q. skull**
6	**E. Discobolus**	13	**K. microscope**	2	**R. Toltec figure**
11	**F. Discovery**	16	**L. molecule**	17	**S. Wall Street**
		3	**M. Native American**		

Part 2

Q-M-C-N-E-R-I-H-B-K-A-L-S-G-D-O-P-J-F

Q. Human skull
M. Native American (first arrived in the Americas 40,000 BCE)
C. Chinese dragon (dates back to Sheng dynasty, 1766 BCE)
N. Nefertiti (reigned in Egypt, 1358–1340 BCE)
E. Discobolus (originally sculpted in Athens, c. 460 BCE)
R. Toltec figure (flourished in Mexico, 900–1100)
I. Marco Polo (1254–1324)
H. Leonardo's Vitruvian Man (Da Vinci, 1452–1519)
B. Bronzino's Italian Nobleman (Bronzino, 1503–1572)
K. Microscope (first developed by Janssen, 1590)
A. Beethoven (1770–1827)
L. Molecule (postulated by Avogadro, 1811)
S. Wall St. (New York Stock Exchange incorporated, 1817)
G. Frederick Douglass (1817–1895)
D. Clara Barton (1821–1912)
O. Queen Elizabeth II (born 1926)
P. Saracolle woman (the Sara people inhabit southern Chad, which gained independence in 1960)
J. Microchip (1975)
F. Discovery space shuttle (first launch, 1981)

PART 6: MARCOPOLO TRAINING PROGRAM EVALUATION

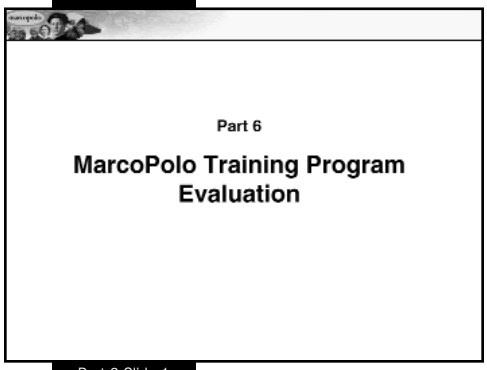
Time Required: 20 minutes

Objectives:
- To assess the actual effectiveness of MarcoPolo materials in training teachers to integrate Internet content into their curricula.
- To evaluate the impact of the MarcoPolo training program.

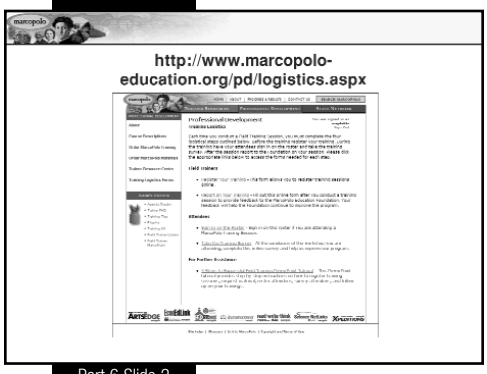
Summary

This part of the training program is designed to gather information vital to the growth of MarcoPolo's professional development initiatives and to provide both participants and trainers with an opportunity to reflect on the session. Go to http://www.marcopolo-education.org/pd/logistics.aspx to complete forms.

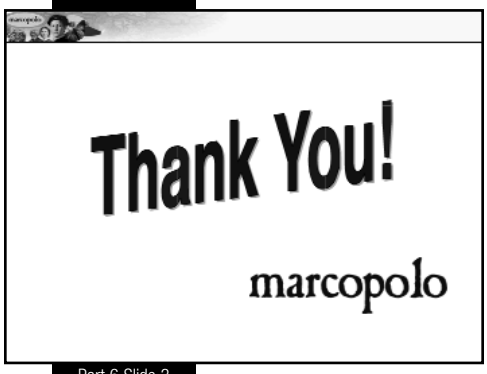
Online Evaluation



Part 6 Slide 1



Part 6 Slide 2



Part 6 Slide 3

ONLINE TRAINING SURVEY

1. At the end of your session, have all members of the group fill out the MarcoPolo Attendee Survey. Participants should complete the survey online at:

   http://www.marcopolo-education.org/pd/logistics.aspx

   Please see the Trainer Resource Center User's Guide in the Appendix of this Teacher Training Kit for detailed survey instructions. Should you be without Internet connectivity during your session, you can still survey your attendees in one of the following two ways. First, you can ask them to complete the online survey on their own before or after your training session. Or, you can have them fill out the appropriate hard copy survey form in the Appendix of this Teacher Training Kit and return it to you so that you can input the information for them later. Please see the Appendix for more information.

2. After participants have filled out their survey forms, encourage them to share their opinions in a group discussion. This can help provide closure for the session and provide you with valuable feedback.

ONLINE TRAINER FOLLOW-UP

Trainers are also asked to fill out a follow-up form at the conclusion of *every* training session, to provide tracking information that can be used to evaluate the impact of the MarcoPolo training program.

By providing this information, trainers contribute directly to the growth of the MarcoPolo Professional

Development Program and can highlight the accomplishments of their state. Trainers in Utah, for example, were able to show that in just six months they had brought *Internet Content for the Classroom* to more than 2,500 teachers, making the Internet an integral part of education for 56,000 students.

Please complete the trainer follow-up form online at http://www.marcopolo-education.org/pd/ftrc.aspx. A copy of the form is included in the Appendix for your review. Additional information on these procedures can also be found in the Appendix. Thanks in advance for your cooperation.

Should you encounter any technical difficulties while accessing or completing these online survey forms, please notify the MarcoPolo staff. Simply send an e-mail to MarcoPolo by selecting the Contact Us button at the top of the MarcoPolo Web site.

APPENDIX

Optional Training Topics and Additional Training Information

This section provides additional information on topics of special interest, as well as the Trainer Resource Center User's Guide.

You can provide copies of this special interest material to participants who raise questions about any of these topics in your training session, or use it to facilitate a discussion of the topic in the session. Meanwhile, the Trainer Resource Center User's Guide provides you with detailed information regarding how to record training session data and complete training surveys.

Content Filters

What They Are

Content filters are technologies with which schools and families can deter or prevent:

- Access to inappropriate online content (pornography, hate groups, commercial sites, etc.)
- Unacceptable online behavior (chat rooms, gambling, auctions, etc.)
- Objectionable e-mail (profanity, solicitations, advertising, etc.)

How They Work

Content filters set up a checkpoint between your browser and the Internet. They typically screen information in three ways.

- **By URL:** Most filters operate with a list of prohibited Web sites and intercept information from any site on the list. Typically this list is based on a review of sites and must be frequently updated. In some cases, the list is based mainly on the presumption that objectionable sites will have objectionable terms in their URLs.
- **By keyword:** Most filters also have a list of prohibited words and intercept Web pages that contain any of those words. Often, now, this keyword check is contextual to reduce the chance that an unobjectionable Web page will be intercepted because it happens to contain one prohibited term.
- **By rating:** Several organizations have established voluntary rating systems that Web site developers can use to code the content of a Web page. These function like movie ratings and can be used by filters to intercept inappropriate content.

The content filter checkpoint can be located at two places along the information pathway between your browser and the Internet.

- **On your computer:** These are called "client" filters and can often be customized to allow some people using the computer (parents) broader access than others (children).
- **On your network:** These are called "server" or "proxy server" filters and provide content control for all computers on a network. Some Internet service providers (ISPs) offer this kind of content filtering to their customers, and many businesses now use this kind of content filtering to control Internet use by employees. These are also the most common type of content filters used in schools.

What They Do

Content filters can check the flow of Internet content to your browser in several ways.

- **Blocking:** This is the most common function of content filters. They prevent objectionable content from reaching the browser, displaying instead a notice that access has been denied. Filters can also block the computer user from entering an objectionable URL or search term. In some cases, they also block access to specific parts of the Internet, like chat rooms, and block objectionable e-mail that is being sent or received.
- **Monitoring:** Some content filters are designed to track and record Internet activity. They keep a log of attempts to send or receive objectionable information, and may file away a screen shot of objectionable Web pages as well. Monitoring sometimes accompanies blocking, providing evidence of attempts to thwart the system, but it can also be employed as an alternative to blocking, either covertly, as a way of checking up on Internet use, or in "warning mode," as a way of alerting the computer user to potential trouble.

Content Filters (continued)

- **Controlled access:** These are content filters that limit Internet access to a set of designated Web sites. Instead of intercepting objectionable content, they effectively restrict the user to content that has been reviewed and ruled acceptable.

Some Issues to Consider

Content filters have been the subject of considerable debate among educators, public interest groups, politicians and parents. Here are some issues you may encounter.

- **Who sets the criteria?** Some content filters operate based on criteria of acceptability set by the manufacturer or service provider. Others allow users to modify these criteria. In either case, those affected by a content filter often want to know who is responsible for deciding what they can and cannot access, and how those criteria were determined. It is worthwhile having the answers to these questions and providing this information to parents and students as clearly and as quickly as possible.
- **Are the criteria effective?** This concern usually arises when a content filter blocks access to unobjectionable information that happens to contain a word listed as objectionable. For example, a Web site on breast cancer prevention. Concerns about effectiveness can also arise when a content filter fails to intercept objectionable information, such as an uncaptioned racist image from an innocuously named Web site. Either way, this issue should be addressed by school administrators and those managing the content filter software, not by the classroom teacher.
- **Is this censorship?** The use of content filters can raise concerns (even lawsuits) about the violation of First Amendment rights. This is perhaps the most contentious issue associated with this technology and an area in which educators often find a need for legal counsel.

Internet Plagiarism

The Problem

There is alarming evidence that cheating is on the rise among today's students.

- A 1998 survey conducted by the Josephson Institute of Ethics found that 70.2 percent of high school students and 54 percent of middle school students said they had cheated within the previous 12 months.[1]
- In a 1998 poll conducted by "Who's Who Among High School Students," 80 percent of the students surveyed said they cheated to get to the top of their class.[2]
- The Office of Student Conduct at the University of California, Berkeley, estimates that cheating on campus increased 744 percent from 1993 to 1997.[3]

Statistics like these have caused many teachers to express deep concerns about the potential for cheating offered by the Internet. They note that it is disturbingly easy for students to plagiarize essays and research papers, thanks to the resources this technology puts into their hands.

One immediate cause for concern is the growing number of "paper mill" Web sites that invite students to download term papers for free or offer to create customized term papers for a fee. One librarian estimates that there are currently 72 of these sites, up from 28 at the beginning of 1997.[4] Some of the most notorious are CheatHouse.com (http://www.cheathouse.com), Cheater.com (http://www.cheater.com) and SchoolSucks.com (http://www.schoolsucks.com).

No less alarming is the temptation for students to compose a paper by copying excerpts from published work on the Internet and pasting the pieces together using a word processor. A professor at George Washington University reported that 16 percent of the students in her class on information security concepts constructed their final papers in this way. The next semester, despite her warning that she would check for plagiarism, this percentage remained the same.[5]

Finally, many teachers have been troubled to find that students who conduct research on the Internet fail to acknowledge their sources. These are not cases in which the student intends to cheat but evidence that students tend to regard information on the Internet as free for the taking. Material taken from a printed book will come with a precise citation, whereas material from a Web page may be woven seamlessly into the argument. For some, this is plagiarism of the most insidious sort because it suggests an erosion of academic standards.

What You Can Do

There are several ways teachers can address the growing potential for plagiarism that seems to come with the increasing use of the Internet in schools.

- **Check for cheating:** There are now several Web sites that, for a fee, will search the Internet for evidence that a term paper has been plagiarized. Most return a report highlighting the suspicious passages with links to their sources. For more information, visit Plagiarism.org or the Essay Verification Engine (www.canexus.com/eve).
- **Create plagiarism-resistant assignments:** The Internet is a storehouse of information, but it takes an inquiring mind to turn that information into answers. Therefore, rather than have students research a topic, pose a question. Rather than ask for a report, ask for an opinion or a proposal. Students are less likely to find temptation in their path with such assignments, and more likely to become engaged in genuine research.

Internet Plagiarism (continued)

- **Teach proper citation methods:** Impress on students the importance of properly acknowledging sources. For help, turn to "Browser Beware!" in the Reference Shelf area at EDSITEment, and use these online style guides to teach students proper citation practice:
  - *Electronic Reference Formats Recommended by the American Psychological Association* (http://www.apastyle.org/elecref.html)
  - *Sources: Their Use and Acknowledgement* from Dartmouth College (www.dartmouth.edu/~sources/)
  - *Citation and Style Guides* from Concordia University Libraries (http://juno.concordia.ca/services/citations.html)

Notes

1. William Hageman, "Students say (in effect): Sure, we cheat; so what?" *The Philadelphia Inquirer,* December 9, 1999.
2. Ibid.
3. Fred Sandsmark, "Your Cheatin' Heart Doesn't Stand a Chance," *TechWeek,* January 10, 2000 (at http://www.techweek.com/articles/1-10-2000/cheat.htm).
4. John N. Hickman, "Cybercheats," *The New Republic,* March 23, 1998.
5. Julie J. C. H. Ryan, "Student Plagiarism in an Online World," *Prism*, December 1998 (at http://www.asee.org/prism/december/html/student_plagiarism_in_an_onlin.htm).

Evaluating Internet Content

At MarcoPolo, Internet content is reviewed by experts to ensure that it is accurate, up-to-date, unbiased and appropriate for the classroom. But how can you check the quality of content that you and your students find elsewhere on the Internet? Here's a guide to evaluating *Internet Content for the Classroom* that can help you decide which Web sites deserve your own "seal of approval."

Is It Credible?

Quality content comes from credible sources, organizations and individuals with recognized authority in their fields. To check the credibility of Internet content:

Look at the Web site address.

- Long, complicated addresses, particularly those with a tilde (~) in the URL, can be a sign that the Web site is the work of an individual, whose enthusiasm may turn out to be no substitute for expertise.
- The root of a URL, the part before the first back-slash (/), usually reveals whether the content comes from an educational institution (.edu), a nonprofit organization (.org), a government agency (.gov) or a commercial enterprise (.com).

Look for information about the author.

- The "About" section of a Web site often provides background on the person or group responsible for its content, including academic credentials and professional affiliations.
- An e-mail address can be an indication of credibility if it allows contact with an author of the site rather than with a technician responsible for keeping the site online.

Is It Accurate?

Quality content is marked by respect for accuracy, in grammar and spelling as well as in the handling of facts. To check the accuracy of Internet content:

Look for editorial competence.

- Misspellings, poor grammar and inconsistencies can be an indicator that content has not been thoroughly reviewed.

Look for valid and verifiable sources.

- Like print publications, Web sites should identify the sources of their information so that others can check the facts.
- Content that draws on primary sources will often be more reliable than content that recycles secondhand information.

Is It Balanced?

Quality content reflects a balanced point of view—honest, objective and open to critical assessment. To check for balance in Internet content:

Look for signs of bias.

- Loaded terms, leading questions and sweeping generalizations are usually good indicators of a one-sided point of view.

Look at the underlying purpose.

- Web sites that are designed to persuade, alarm, expose, ridicule, entertain or sell merchandise may use information (or misinformation) to achieve their goal.
- Web sites on controversial topics may assume that a visitor is already well-versed on the points in dispute and provide a deliberately partisan point of view.

Evaluating Internet Content (continued)

Is It Well-Informed?

Quality content rests on a body of knowledge and carries evidence that its producer is well-informed in the subject area. To check whether Internet content is well-informed:

Look for links to other sources of information.

- An extensive list of links to other online resources may be proof of diligence, but an organized, annotated list can demonstrate command of the subject.

Look at the depth of content on the Web site.

- Often the quality and quantity of resources created for a Web site are clues to the intellectual strength of its developer.

Is It Up-to-Date?

Quality content remains up-to-date, whether the subject is one in which facts change daily or one in which ideas evolve slowly over time. To check whether Internet content is up-to-date:

Look for a publication date.

- A copyright date on the homepage is one indication of currency. Many sites also provide an "updated on" date for individual pages.

Look for dead links.

- Links that lead to a File Not Found message or to a change of address notice usually mean that the site is not reviewed or maintained on a regular basis.

Is It Relevant?

Quality content for the classroom should be relevant to the curriculum and easily adaptable for lesson plans and learning projects. To check whether Internet content is relevant:

Look for educational standards.

- Web sites that do not cite content standards directly should reflect an awareness of the curricular requirements in various subject areas and at various grade levels.
- Lesson plans and activity ideas should come with clearly formulated learning objectives to help you align this content with your local standards.

Look for curricular support.

- Content formatted for use in the classroom, lesson plans, discussion questions, and other instructional tools all indicate a Web site designed to meet teachers' needs.

Is It Appropriate for Students?

Quality content for the classroom should be appropriate for students, both accommodating to their level of intellectual development and sensitive to the values of the educational community. To check whether Internet content is appropriate:

Look at the organization and presentation of the Web site.

- Some Web sites are addressed to those already knowledgeable about the subject. Students need sites that will guide them toward understanding.

Look for offensive or potentially harmful attributes.

- In addition to the obvious warning signs—pornographic images, profanity, bigotry, advocacy of drug use or violence—be on the lookout for inconspicuous possibilities for trouble: invitations to make online purchases, inducements to submit an e-mail address, and requests for information that can be used to create a marketing profile.

A Glossary of Internet Terms

Adobe Acrobat Reader

Software created by Adobe® Systems to read PDF files. The Acrobat® Reader® is available at no cost for both Macintosh® and Microsoft® Windows® platforms.

Bookmarking

Copying the address (URL) of a Web page to a special file in your computer so that you can return to that page again. To bookmark the page you are viewing, click Bookmark or Favorites on your browser, then select Add Bookmark or Add to Favorites. The name of the page is added to the end of your browser's bookmark list, and the address of the page is stored in your bookmark file. To revisit a bookmarked page, click Bookmark or Favorites, scroll down the bookmark list and select the page you want.

You can organize your bookmarks by editing your bookmark file. Click Bookmarks or Favorites and select the Edit function. You will see your bookmark list in a window.

- To rearrange the list, simply drag the bookmarks to different positions.
- To delete a bookmark you no longer use, select it and press the Delete key.
- To rename a bookmark so that it is easier to recognize on the list, select it and choose Info or Properties in the Edit menu. A box opens in which you can type a new bookmark name.
- To group related bookmarks into folders, click the item just above where you want to position a folder and then choose New Folder in the File menu. Type a name for the folder and click OK. Now you can drag bookmarks into your new folder.

You can also save your bookmark list as a separate file. This is useful when you want to have several bookmark lists on your computer (covering different subject areas, for example) or when you want to create a special bookmark list for students.

- To save a bookmark list as a separate file, click Bookmarks or Favorites and select the Edit function to view the list in a window. Then choose Save As in the File menu, type in a name for the list and save it to a location in your computer.
- To open a bookmark list that has been saved as a separate file, choose Edit in the Bookmark or Favorites menu, then select Open Bookmarks File or Open Favorites File in the File menu. This will change the bookmarks list your browser displays.
- Once it is saved as a separate file, a bookmark list can be transferred to another computer. This is an easy way to create customized bookmark lists for student projects.

Cookie

A small file used to identify Web site visitors. The "cookie" is sent out by the Web site and stored in the visitor's computer so that the Web site can recognize the visitor when he or she returns. In this way, the site can create a database on each visitor and customize its response to match each visitor's interests and needs. Most browsers are set to accept cookies automatically, but you can change these settings so that you can decide for yourself every time a cookie comes your way.

FAQ

An acronym for Frequently Asked Questions. FAQs are documents that try to provide answers to common questions about a specific topic.

Flash

Flash,™ software by Macromedia that enables multimedia and interactive graphics.

GIF

An acronym for Graphic Interchange Format. A common format for images on the Internet. When you go to a Web address that ends in .gif, you are opening an image file.

A Glossary of Internet Terms (continued)

HTML
An acronym for Hypertext Markup Language. This is the code used to create Web pages. When you go to a Web address that ends in .html (or .htm), you are opening a file coded in HTML.

Java
A programming language created to produce software that will run on any computer system. On the Internet, Java™ is used to create small software applications, called "applets," that add interactive features to a Web site, such as animations, calculators and scrolling text. Your browser must support Java, however, for these enhancements to work.

JPEG
An acronym for Joint Photographic Experts Group. A format for image files. When you go to a Web address that ends in .jpg, you are opening an image file.

Listserv
A system, powered by LISTSERV,® that allows people to share e-mail. When you subscribe to a listserv, you receive messages from all the other subscribers and can send messages to them by e-mailing the listserv address. Most listservs provide their subscribers with a forum for online discussion of a specific topic, such as MarcoPolo's listserv on *Internet Content for the Classroom*.

PDF
An acronym for Portable Document Format. A file format created to preserve the appearance of documents and make them viewable on any computer. To view PDF files, you need the Adobe Acrobat Reader.

Plug-in
A small piece of software that adds features and capabilities to a Web browser. Most browsers now notify you when a plug-in is needed and will find and download it for you automatically.

QuickTime
Multimedia software developed by Apple Computers to play video, animations, music and virtual reality (VR) scenes. The QuickTime® player is available at no cost for both Macintosh and Windows platforms.

RealPlayer
Software created by RealNetworks to play "streaming" audio and video delivered to your computer over the Internet. Instead of waiting for an audio or video file to download, RealPlayer processes the file as it is being transmitted, making it possible to receive radio and television "broadcasts." RealPlayer is available at no cost for both Macintosh and Windows platforms.

Server
A computer dedicated to serving requests from other computers. When you access a Web page or check your e-mail, you are contacting a server.

Shockwave
Multimedia software developed by Macromedia to play interactive games, presentations and animations. The Shockwave Player is available at no cost for both Macintosh and Windows platforms.

URL
An acronym for Uniform Resource Locator. This is the address of any item on the Internet.

MarcoPolo Trainer Resource Center User's Guide

About the Trainer Resource Center User's Guide

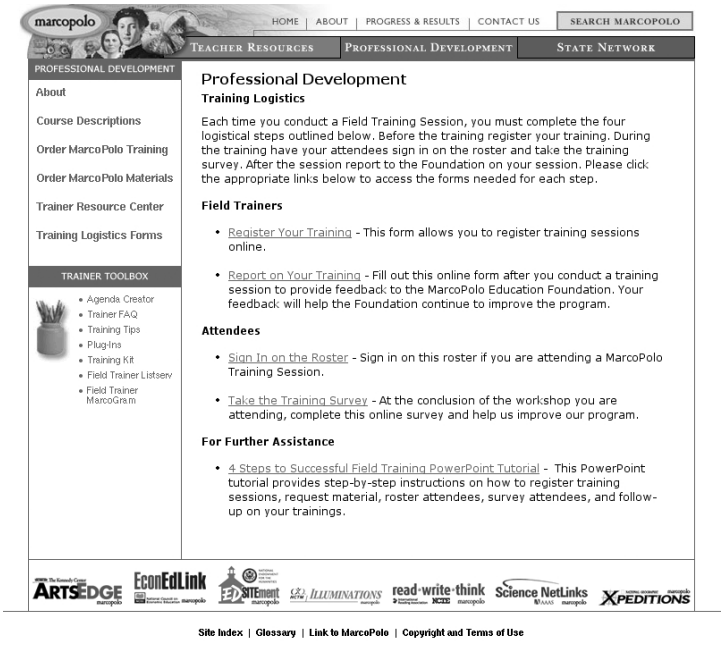
The Trainer Resource Center User's Guide is intended to lead Field Trainers through several processes involved in preparing for and conducting a MarcoPolo Field Training session. Field Trainers are educators who have been trained in a MarcoPolo train-the-trainer session and who are now sharing MarcoPolo with others in their states and districts. By completing the logistical processes referenced here and providing information to MarcoPolo on their training sessions, Field Trainers contribute directly to the growth of the MarcoPolo professional development initiative and can also highlight the accomplishments of their states and districts.

To efficiently organize the logistics of Field Trainer sessions, MarcoPolo has created an online Trainer Resource Center, a Training Logistics Forms page and a highly customized database and Web application called Rusticello that manages MarcoPolo professional development data. Together, these online tools enable Field Trainers to manage the logistics of their Field Trainer sessions. Specifically, the Trainer Resource Center (http://www.marcopolo-education.org/pd/ftrc.aspx) and the Training Logistics Forms page (http://marcopolo-education.org/pd/logistics.aspx) are designed to provide MarcoPolo trainers with access to logistics tools that will help them conduct successful training sessions, tools such as registration, roster, survey and follow-up forms. From Rusticello (http://mptraining.worldcom.com/), Field Trainers can view and request Field Training sessions, register new Field Training sessions, view rosters and surveys, complete follow-up forms and run reports on MarcoPolo training activity.

As stated, the purpose of this guide is to lead Field Trainers through key logistical processes involved in preparing for and conducting Field Training sessions. All tools and processes discussed here may be accessed through the Trainer Resource Center and the Training Logistics Forms page.

About the MarcoPolo Trainer Resource Center

MarcoPolo training is facilitated by several administrative systems; these functions can be accessed through the Trainer Resource Center and the Training Logistics Forms page. Through these pages, Field Trainers add their training sessions into the system, have attendees sign-in through the roster, administer surveys to attendees and complete follow-up forms after completing the sessions.



Trainer Resource Center User's Guide (continued)

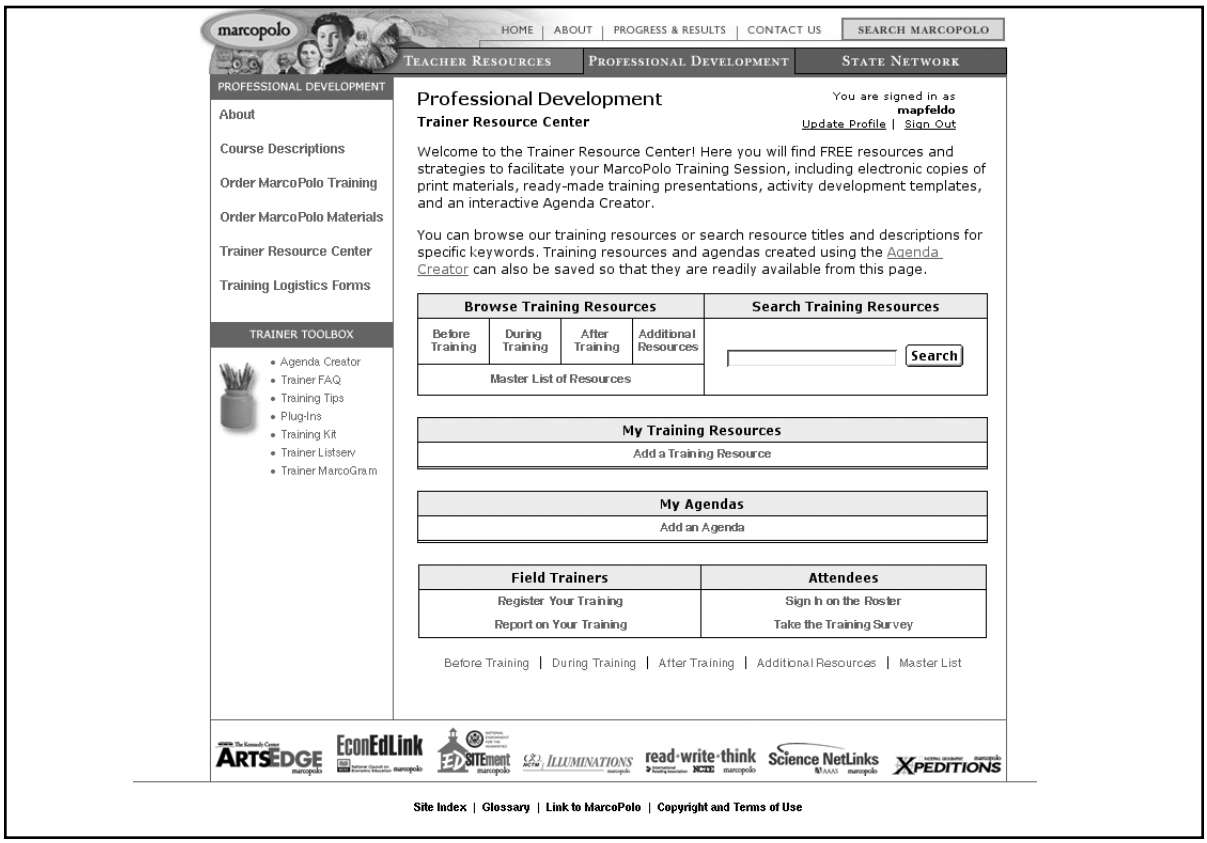
Accessing the MarcoPolo Trainer Resource Center

To access the Trainer Resource Center, please go to http://www.marcopolo-education.org/pd/ftrc.aspx, or click the Trainer Resource Center link from the MarcoPolo homepage. If this is your first time accessing the Trainer Resource Center on the particular computer you are using, you will need to log in to access the site.

Your MarcoPolo login ID and password are the same as your Rusticello login ID and password, which were sent to you after you attended your initial MarcoPolo training session. If you do not have a Rusticello user ID and password, you can register here for free access to the Trainer Resource Center.

Once you have logged in, the following screen will appear:

Trainer Resource Center User's Guide (continued)



BEFORE TRAINING

Before the date of their Field Training session, Field Trainers are asked to register their session in the MarcoPolo training calendar. Registering your training session with MarcoPolo identifies your training on the MarcoPolo training calendar and helps MarcoPolo and your state or school district track the effective rollout of the training program. Once you have registered your session, you also have the option to either download professional development materials for free or purchase them at cost.

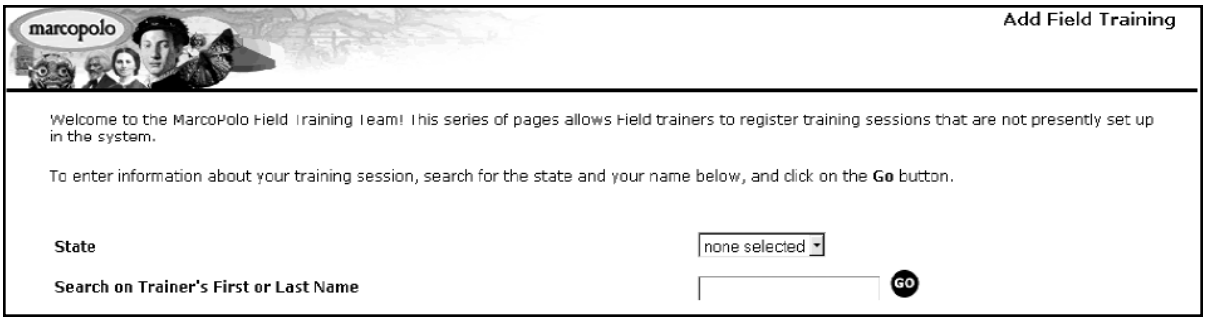
STEP 1: REGISTER YOUR TRAINING AND DOWNLOAD OR PURCHASE MATERIALS

As a Field Trainer, you have two ways to register your training sessions. First, you can register and report back on training sessions by going to the Trainer Resource Center. You can also perform this task directly in Rusticello; as stated, after you attended your initial MarcoPolo training, you were e-mailed a login ID and password for the Rusticello system. In this Teacher Training Kit, we will be reviewing the process for registration only through the Trainer Resource Center.

To register your Field Training session and purchase or download training materials from the MarcoPolo Trainer Resource Center:

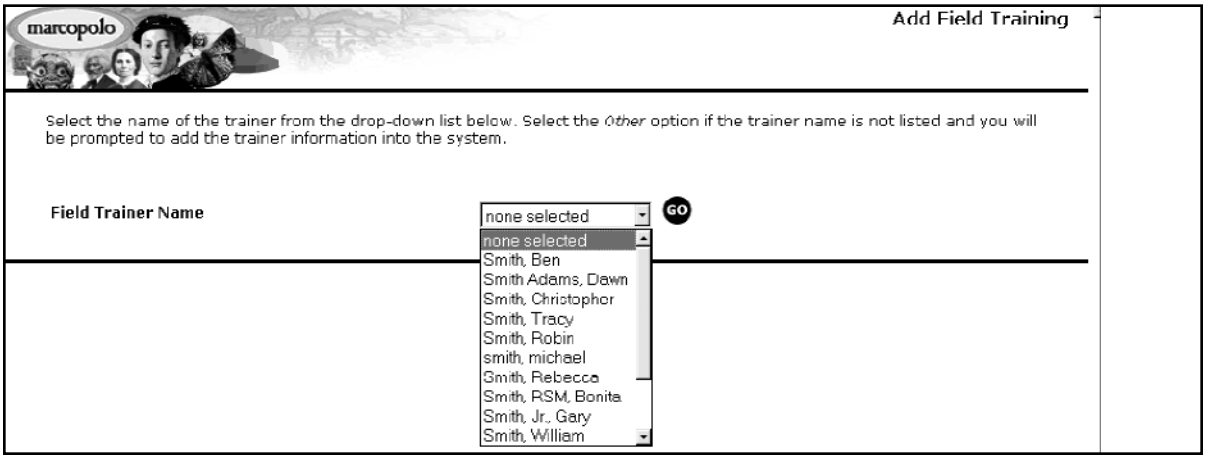
- Go to http://www.marcopolo-education.org/pd/ftrc.aspx.
- Click on the Field Trainers: Register a Training link. The Add a Field Training Session pop-up window appears.

Trainer Resource Center User's Guide (continued)

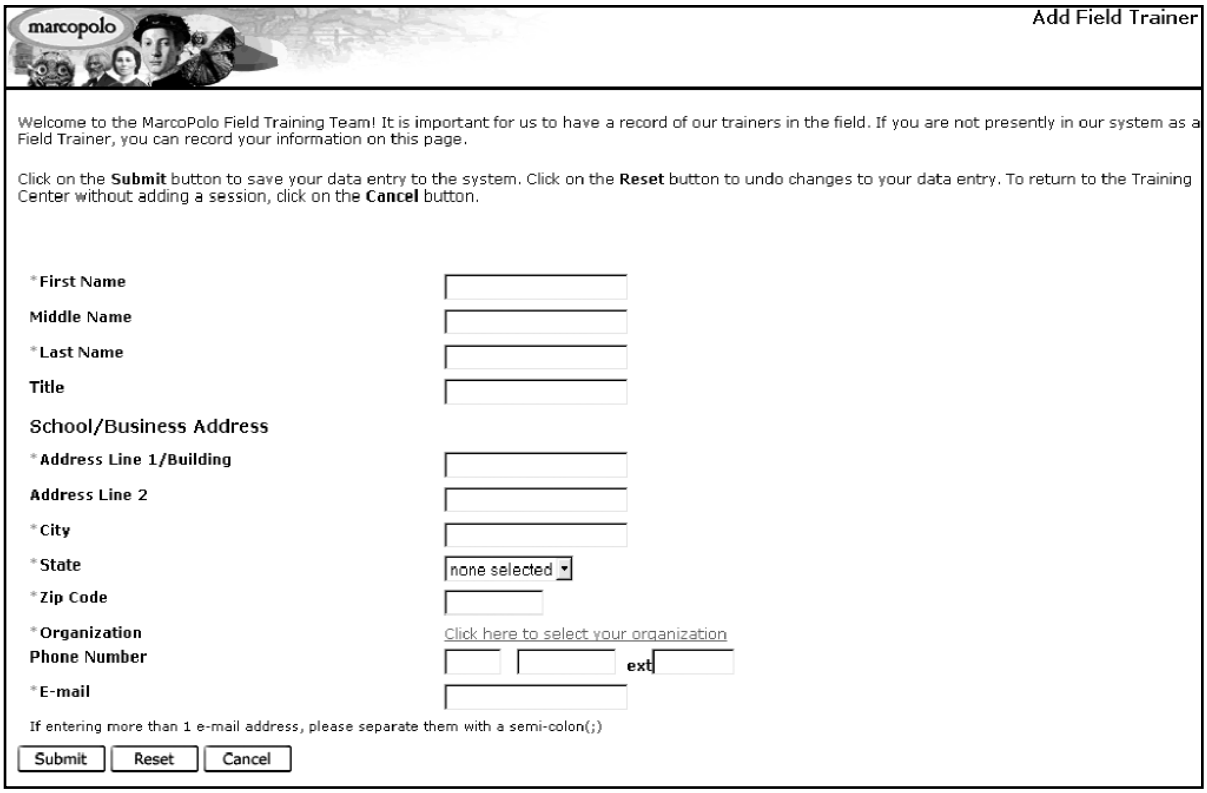


After opening the Add Field Training page, the Field Trainer will have to find their record by searching on their state and name. To complete this:

- Select your home state from the state drop-down list.
- Then, type your first or last name in the box next to the Search on Trainer's First or Last Name field, and click the Go button. The page refreshes and displays the Add a Field Training Session page with a drop-down list of Field Trainers with the same name in that state.
- Select your name from the drop-down list, and click on the Go button. The page refreshes and brings you to the Add Field Training form (see page VII.17).



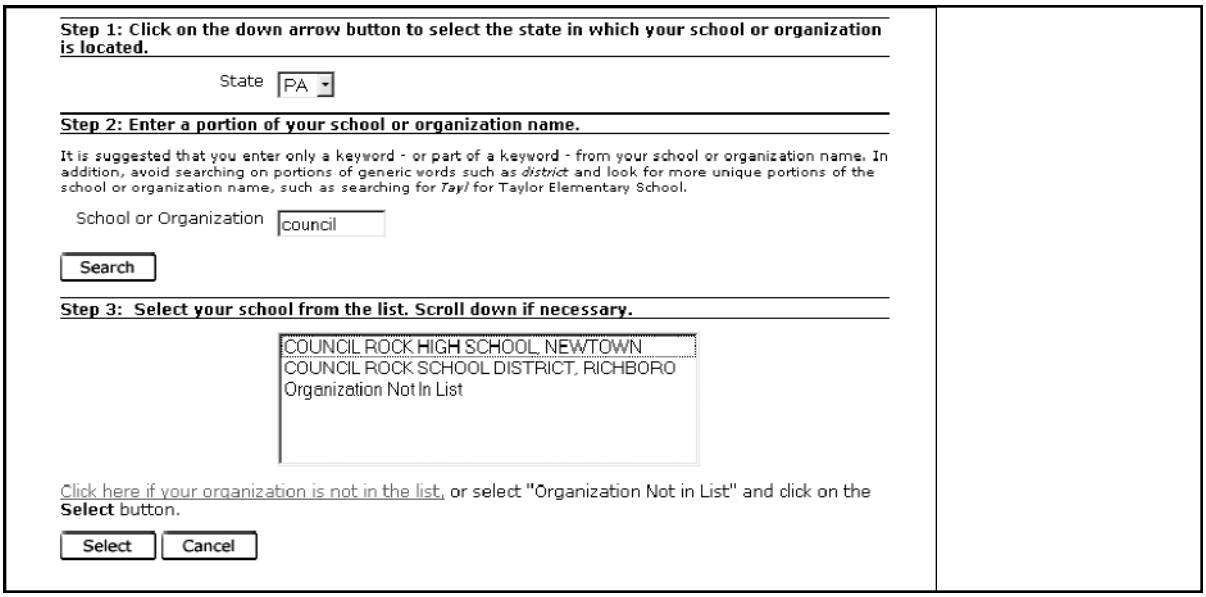
Trainer Resource Center User's Guide (continued)



If your name does not appear on the list, please complete the following steps:

- Be sure that you entered only a first name or a last name into the search box. The database does not search for a full name; therefore, you may not be able to locate your record if you enter both a first and a last name.
- If you are still unable to locate your name, select Other from the Field Trainer name drop-down list, and click the Go button. You will then move to the Add Field Trainer form (above), where you will need to add your information. This will add your information into the system and make it available for future registrations.
- Note that as you complete this Add Field Trainer form, you will have to use the Selection Tool to identify your school or organization. To use the Selection Tool, click on the Click Here to Select Your Organization link. This opens the Organization Selection Tool—there are three steps in this process that you then must complete.

Trainer Resource Center User's Guide (continued)

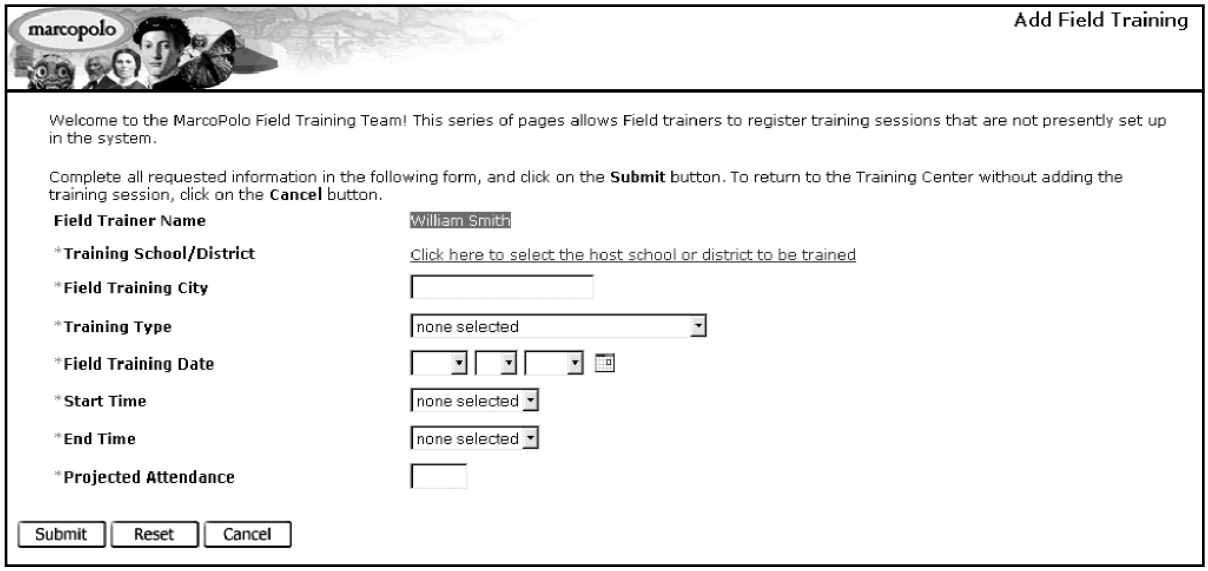


- Complete Step 1 by selecting your home state from the drop-down list.
- Complete Step 2 by entering at least three characters from a key word in your school or organization name and click Search to find your school or organization.
- Complete Step 3 by scrolling through the list of schools and organizations and clicking on the name that matches your organization. This process helps MarcoPolo and state Partners track MarcoPolo professional development activity in your state or region.
- If, while completing this form, you find your school or organization is not on the list, follow the instructions listed below:
  - ***Important!*** Many school and organization names selected through this tool are truncated. For this reason, it may be helpful to search for school or organization names using only a partial name. For example, because many departments of education are listed in the database as "DEPT OF EDUC," a search for "department" would not yield these organization names. To locate such truncated names, search on partial words such as "dept" or "educ."
  - It is therefore suggested that, if necessary, the search be performed again by entering a different part of the school or organization name and following the directions above. If after performing several searches for the school or organization the information is still not located, select the Organization Not in List option in the search results list box, and click the Select button. Alternatively, you can click on the link below the search results list box designated for this function. Either of the actions will return you to the form to manually enter the school or organization information.
  - Once your school has been selected, you will be brought back to the Add Field Trainer form.
  - Complete all requested Field Trainer information, including name and e-mail address, and click the Submit button.

Trainer Resource Center User's Guide (continued)

➤ To cancel the form and return to the Trainer Resource Center, click on the Cancel button. Click on the Reset button to undo any unsaved information.

Once you have selected your name as the Field Trainer, you will be brought to the Add a Field Training Session form.



To complete this form, you must first select the host school or district to be trained:

- Click on the Click Here to Select the Host School/District to Be Trained link. This opens the Organization Selection Tool. As discussed above, there are three steps in this process.
- Complete Step 1 and Step 2 by selecting the state where the training will take place and entering a keyword in the name of the organization to be trained.

After you have done so, click the Search button to find the host school or district.

This search enables MarcoPolo and state Partners to identify and track where all MarcoPolo Field Training sessions are being conducted throughout the nation.

- Step 3 is completed by selecting the school to be trained from the drop-down list. If the school is not in the list, follow the instructions for finding or adding organizations on page VII.16 of this Teacher Training Kit.

If your school or organization is not in the list, follow the same tips on page VII.16 of this kit.

- Once the school has been selected, you will be brought back to the Add Field Training page to complete all training details.

Trainer Resource Center User's Guide (continued)

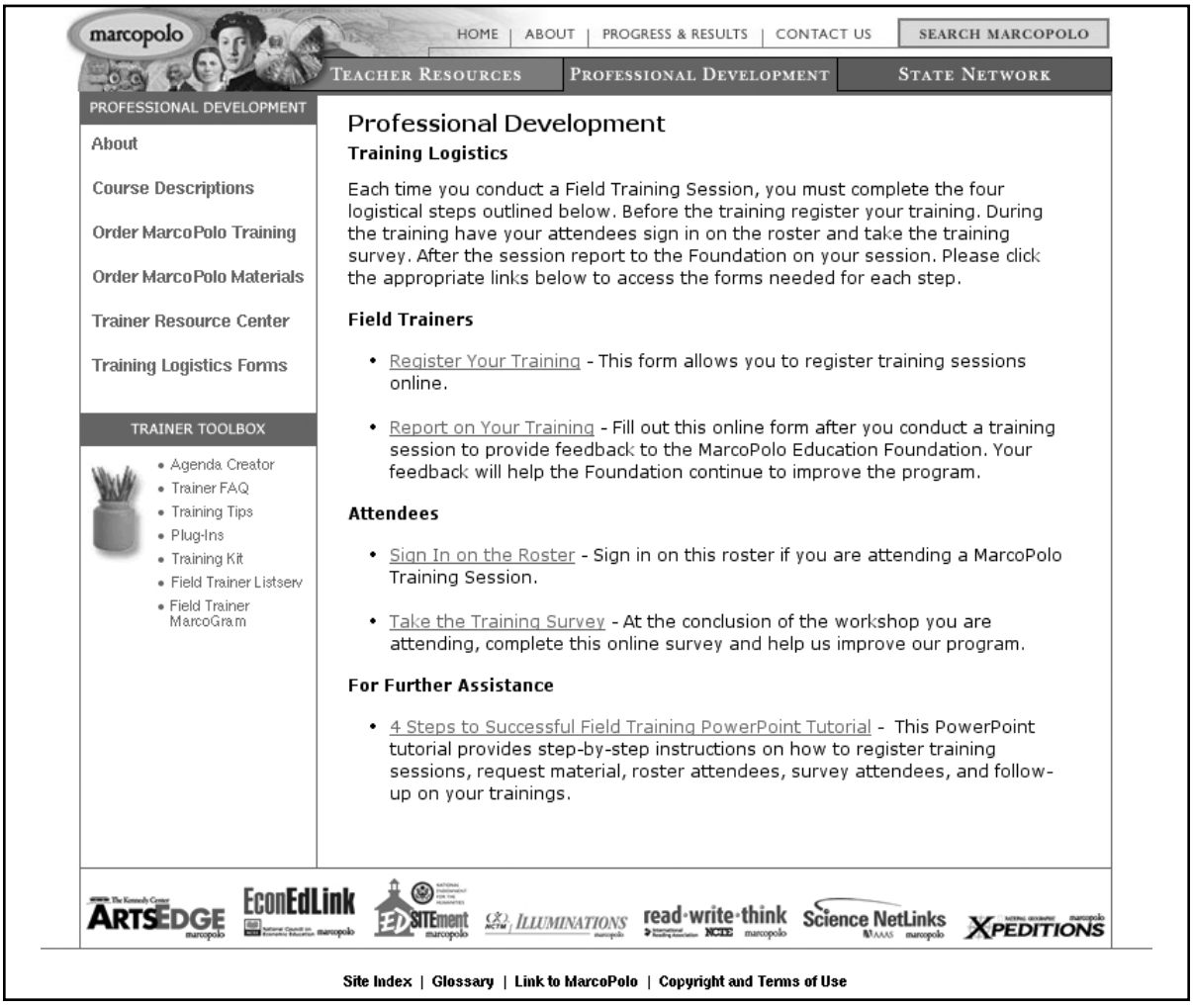
- Click on the Submit button when you have confirmed all information for your upcoming training to be correct and complete.
- To cancel the form and return to the Trainer Resource Center, click on the Cancel button. Click on the Reset button to undo any unsaved information.

You have now successfully registered your training session! If you do not wish to order training materials at this time, click the Done button from the confirmation page to return to the Trainer Resource Center. If you do wish to order training materials, click the appropriate link as indicated by the directions on the confirmation page.

Now you have completed Step 1!

DURING TRAINING

At the beginning of a training session, Field Trainers should direct their attendees to the MarcoPolo Training Logistics Forms page to complete the roster. The Training Logistics Forms page can be accessed by clicking the orange Professional Development bar on the MarcoPolo homepage and then clicking Training Logistics Forms on the subsequent page. Training Logistics Forms can also be accessed directly using the following URL: http://www.marcopolo-education.org/pd/logistics.aspx.



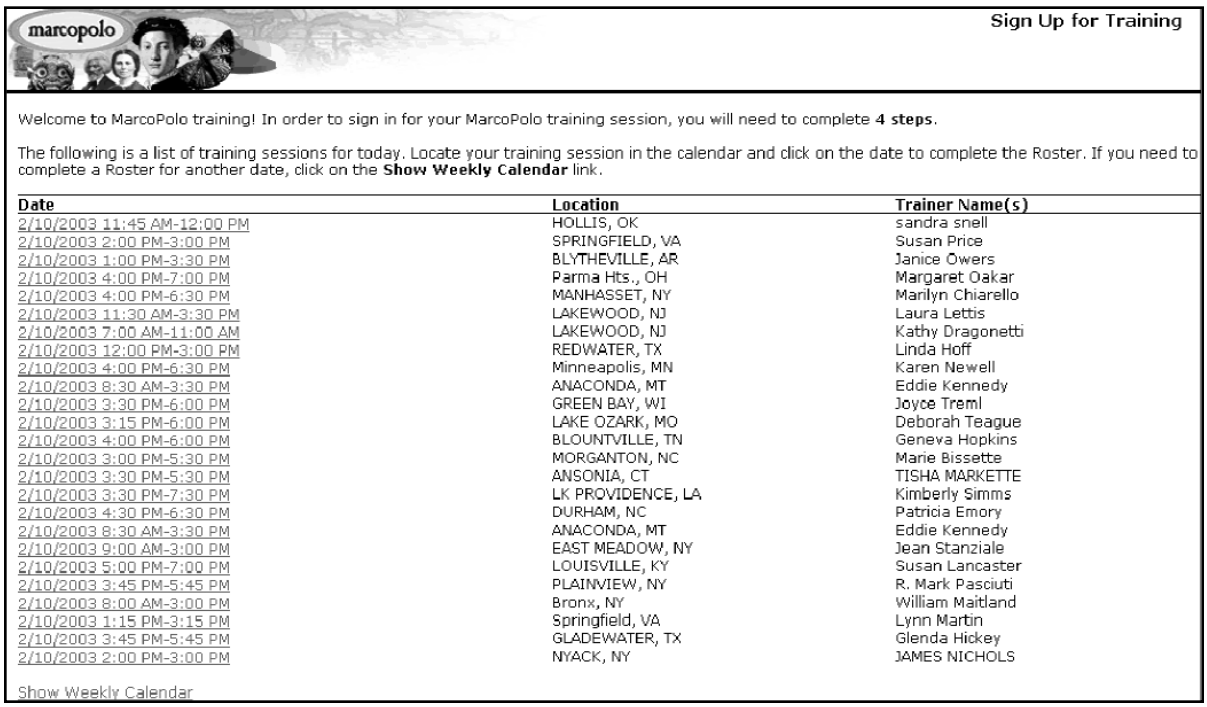
Trainer Resource Center User's Guide (continued)

Through completion of the roster, training attendees provide MarcoPolo with basic identifying information, as well as descriptive information on items such as discipline taught.

STEP 2: HAVE ATTENDEES FILL OUT THE ROSTER

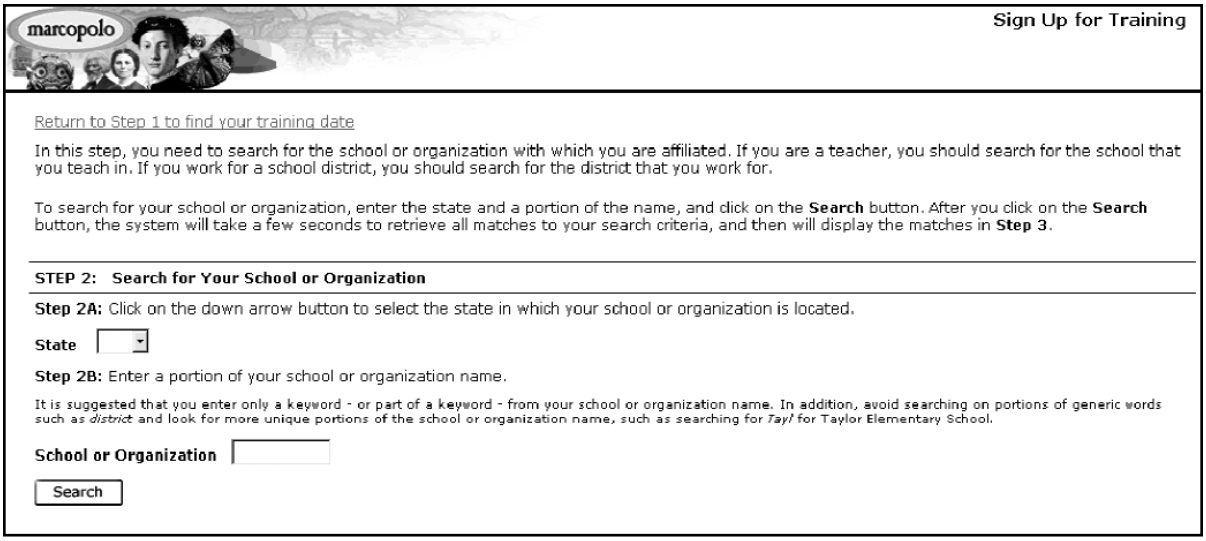
To have attendees fill out the roster from the MarcoPolo Training Logistics Forms page:

- Start on the MarcoPolo homepage (http://www.marcopolo-education.org).
- Click the orange Professional Development bar.
- Once on the Professional Development Overview page, select Training Logistics Forms.
- Next click on the Attendees: Sign In on the Roster link. The Roster pop-up window appears with Step 1 of the roster displayed.
- To complete Step 1 of the process, have attendees locate their training session in the list provided or use the Show Weekly Calendar link and the arrows at the top of the Weekly Calendars screens to access previous or future training sessions.
  - ➤ Please note that, by default, the first page lists only training sessions for that day. Only Field Trainer sessions that have been added into the MarcoPolo system will be available in the list of dates in the Roster pop-up window. Training attendees are able to access the roster by simply knowing the date of training and the name of the trainer.
- Once attendees locate the correct training, they should click on the underlined date and time next to their trainer's name and the training location.



Trainer Resource Center User's Guide (continued)

After a training date is selected, Step 2 of the roster form appears to enable attendees to search for information on their school or organization.



To search for the attendee's school or organization:

- Click on the down arrow to select the state in which the attendee's school or organization is located.
- Enter a portion of the attendee's school or organization name in the School or Organization field.
- To complete Step 2, Click on the Search button to find the school or organization.

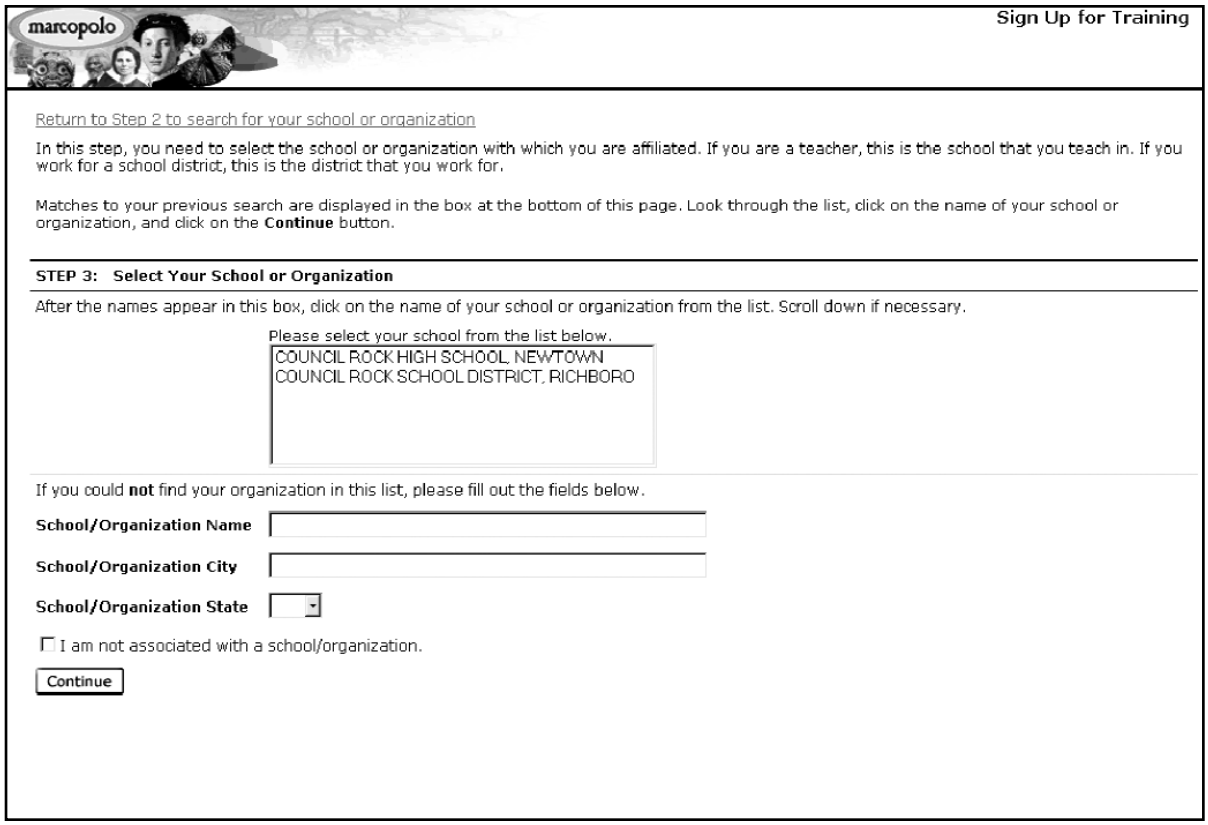
Please note that this search is completed to help identify which schools are being reached by the MarcoPolo program.

After search criteria are submitted, Step 3 of the roster form appears to enable attendees to select the matching school or organization.

To select the school or organization:

- Scroll through the list of schools and organizations and click on the name of the attendee's school or organization.

Trainer Resource Center User's Guide (continued)



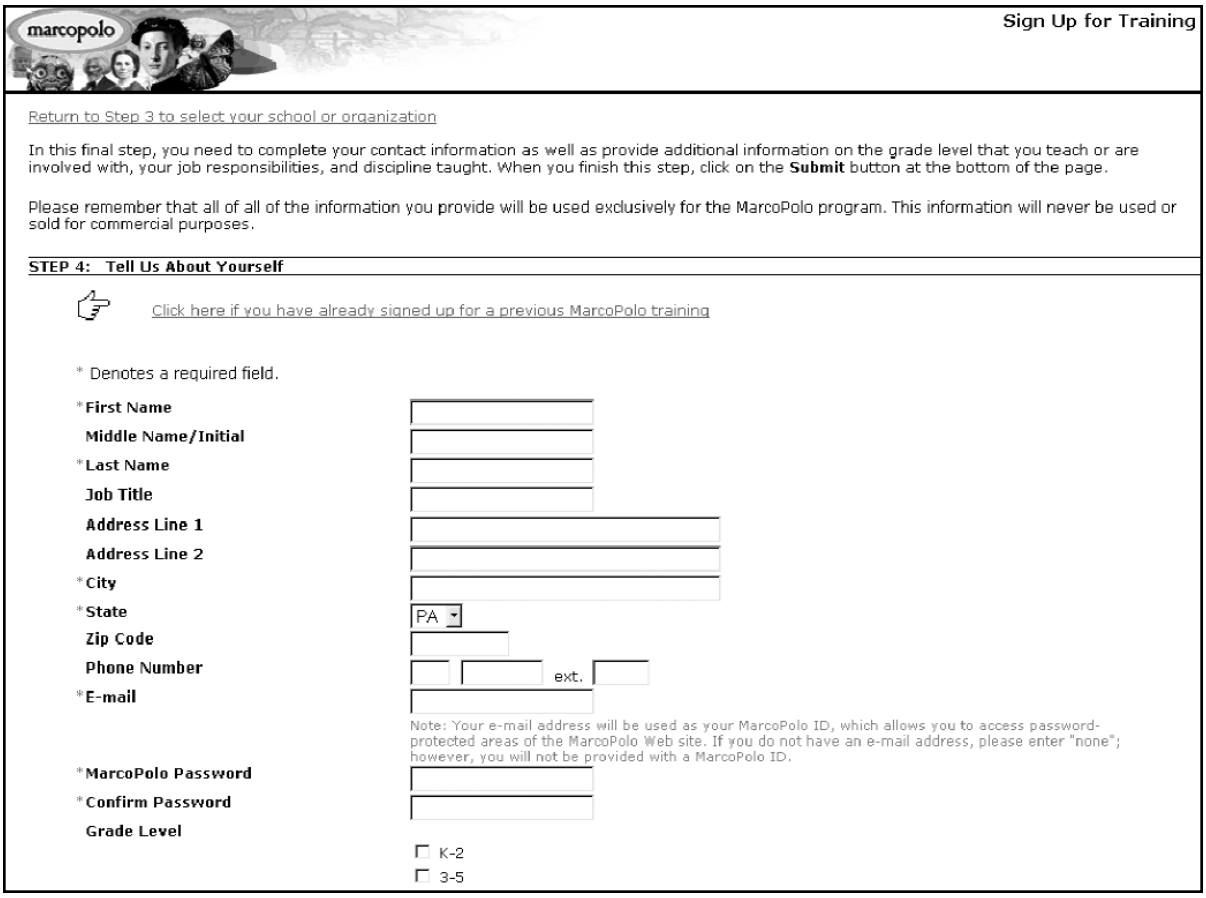
If the school or organization is not in the list, follow the instructions below:

- ***Important!*** Many school and organization names selected through this tool are truncated. For this reason, it may be helpful to search for school or organization names using only a partial name. For example, because many departments of education are listed in the database as "DEPT OF EDUC," a search for "department" would not yield these organization names. To locate such truncated names, search for partial words such as "dept" or "educ."
- It is suggested, therefore, that the search be performed again, by entering a different part of the school or organization name and following the directions above. If after performing several searches for the school or organization the information is still not located, please have the attendees complete the fields below the list of organizations with appropriate information.

• To complete Step 3, click on the Continue button. To cancel the form and return to the Training Logistics Forms page, click on the Cancel button.

After the school or organization is selected, Step 4 of the roster form appears to allow attendees to provide information regarding themselves.

Trainer Resource Center User's Guide (continued)



To complete Step 4 of the Roster:

- Enter all requested information. For attendees of Train-the-Trainer sessions, this includes the two questions at the top of the page regarding their intention to conduct future MarcoPolo training sessions and their willingness to be contacted.
- Click on the Submit button after confirmation that the information entered is correct and complete.
- To cancel the form and return to the Training Logistics Forms page, click on the Cancel button. Click on the Reset button to undo any unsaved information.

After submission of the roster, a confirmation message appears.

- Click the Done button to close the pop-up window. This will return the user to the Trainer Resource Center main page.

After each attendee has signed in on the roster, you can redirect attendees to the MarcoPolo homepage to begin your session.

Now you have completed Step 2!

PLEASE NOTE: If, due to equipment constraints, you are not able to have attendees sign in on the roster during your training session, please ask them to sign in on their own after the session is complete. For information on this process, please see page VII.30.

STEP 3: HAVE ATTENDEES COMPLETE THE TRAINING SURVEY

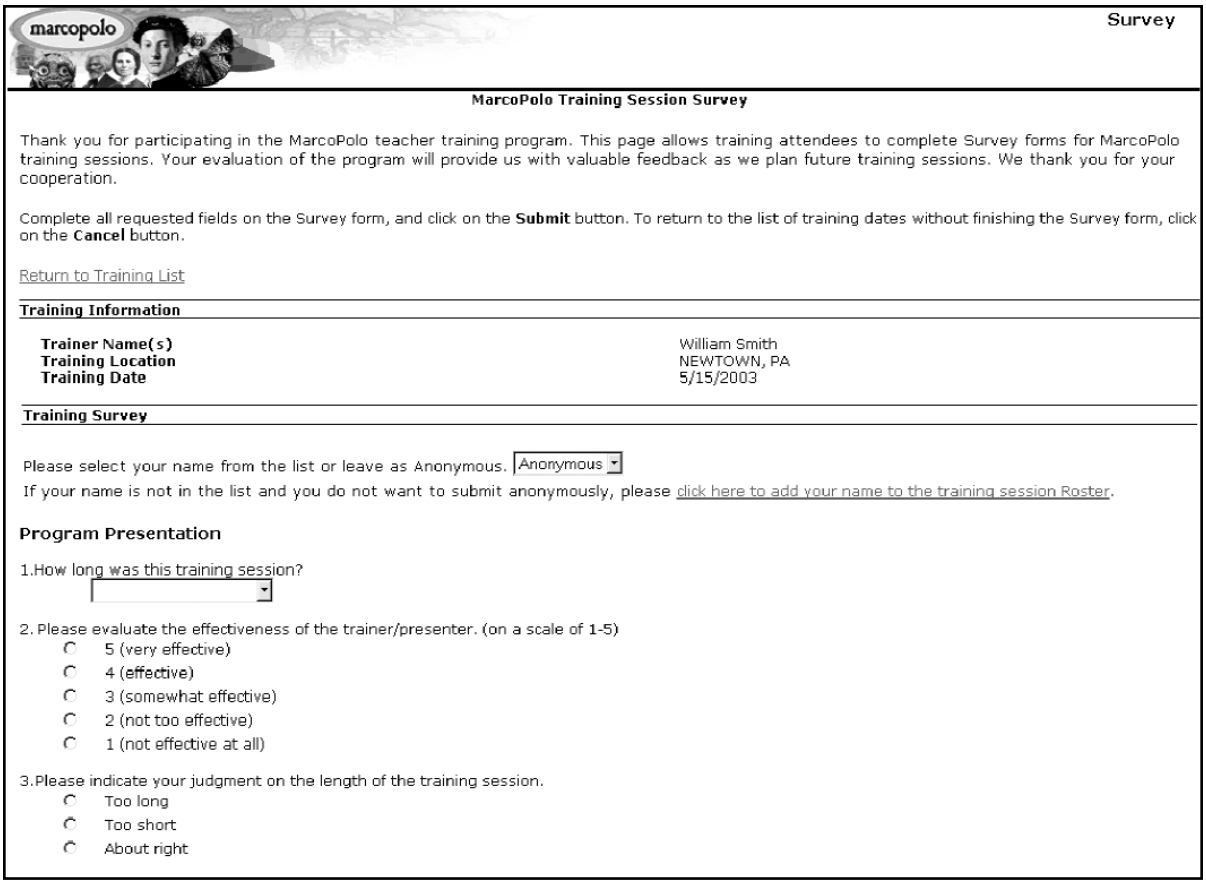
Attendees are asked to complete a survey to provide MarcoPolo with feedback on the training session and the MarcoPolo program generally.

To complete the survey from the MarcoPolo Training Logistics Forms page:

- Start on the MarcoPolo homepage (http://www.marcopolo-education.org).
- Click on Overview in the "Professional Development" section.
- Once on the Professional Development Overview page, select Training Logistics Forms.
- Click on the Attendees: Take the Training Survey link. A pop-up window appears and displays the MarcoPolo Training Session Survey page.
- Locate the training date in the list from the first page of dates or use the Show Weekly Calendar link and the arrows at the top of the Weekly Calendars pages to access previous or future training sessions.
- Please note that, by default, the first page lists only training sessions for that day. Only Field Training sessions that have been added into the MarcoPolo system will be available in the list of dates in the Survey pop-up window. Training attendees are able to access the Survey simply by knowing the date of training and the name of the trainer.

After a training date is selected, the appropriate MarcoPolo training session survey form appears.

Trainer Resource Center User's Guide (continued)



To complete the form:

- Have attendees select their name or Anonymous from the drop-down list. Attendees who do not wish to submit anonymously and whose names do not appear in the drop-down list can click on the link to sign in on the roster.
- Complete the survey form. For attendees of Train-the-Trainer sessions, this includes the two questions at the top of the page regarding their intention to conduct future MarcoPolo training sessions and their willingness to be contacted.
- Click on the Submit button. To cancel the form and return to the Training Logistics Forms page, click the Cancel button.

Now you have completed Step 3!

PLEASE NOTE: If, due to equipment constraints, you are not able to have attendees take the survey during your training session, please ask them to complete the survey on their own after the session. For information on this process, please see page VII.30.

Trainer Resource Center User's Guide (continued)

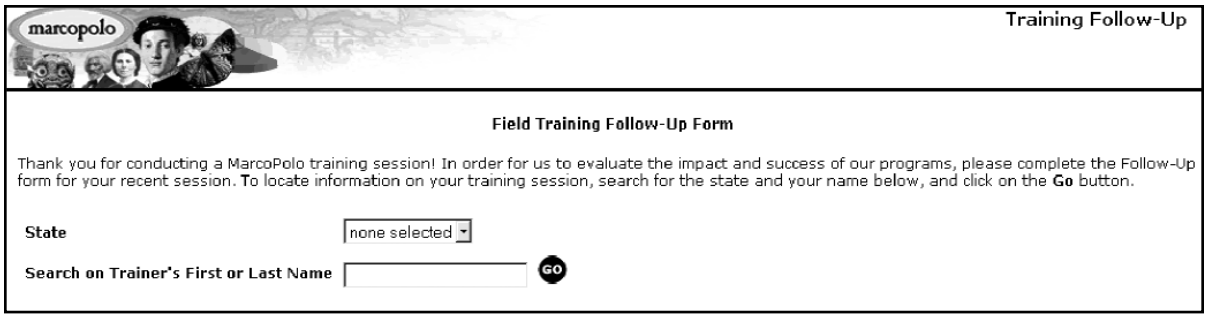
AFTER TRAINING

After the training session, the Field Trainer should complete a follow-up form to share comments and provide feedback on the MarcoPolo program as well as the training session.

STEP 4: COMPLETE YOUR FOLLOW-UP FORM

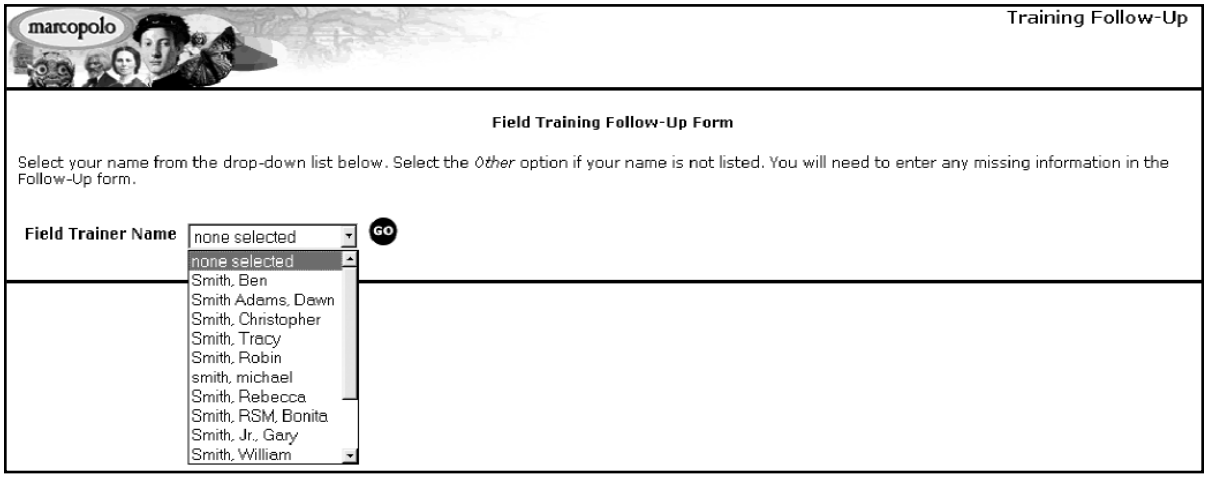
To access the Field Training Follow-Up Form:

- Go to the Trainer Resource Center at http://www.marcopolo-education.org/pd/ftrc.aspx.
- Click on the Field Trainers: Report on Your Training link. The Field Training Follow-Up Form pop-up window appears.



After opening the Field Training Follow-Up Form pop-up window, Field Trainers will have to complete a search on their state and on their name. To complete this:

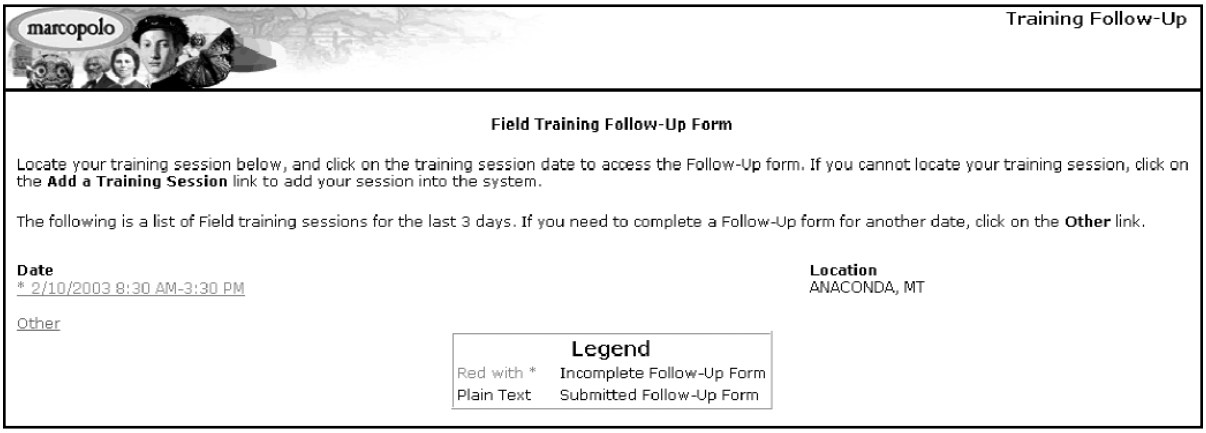
- Select your home state from the drop-down list.
- Then, type your first *or* last name in the Search on Trainer's First or Last Name field, and click the Go button. The page refreshes and displays the Field Training Follow-Up Form page, with a drop-down list of names of Field Trainers in that state.
- Select your name from the drop-down list and click the Go button. You will be brought to a list of train-



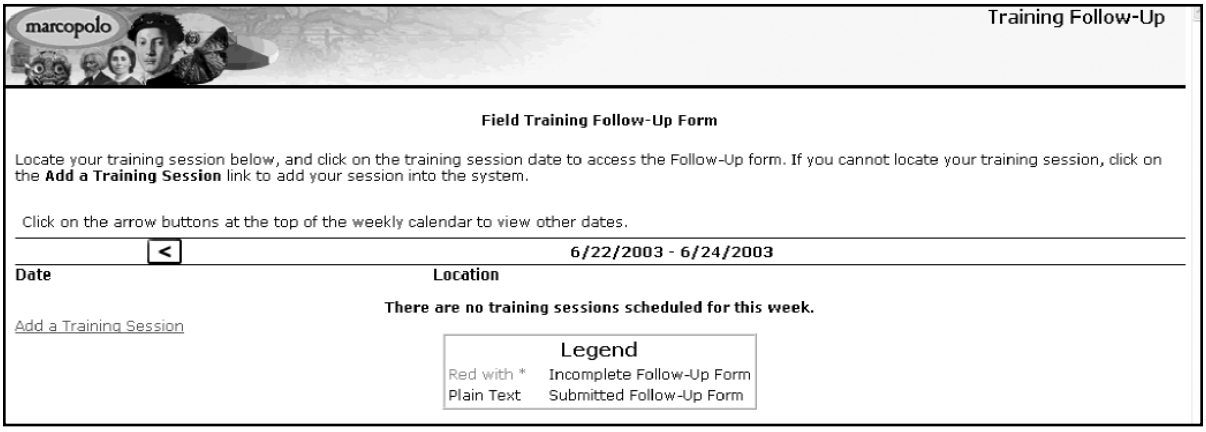
Trainer Resource Center User's Guide (continued)

ing sessions for the last three days.

➤ Please note: If your name does not appear in the list after searching for your state and name, try inputting only *part* of your last name. If this does not work, please e-mail mpfieldtraining@lists.mci.com for assistance.



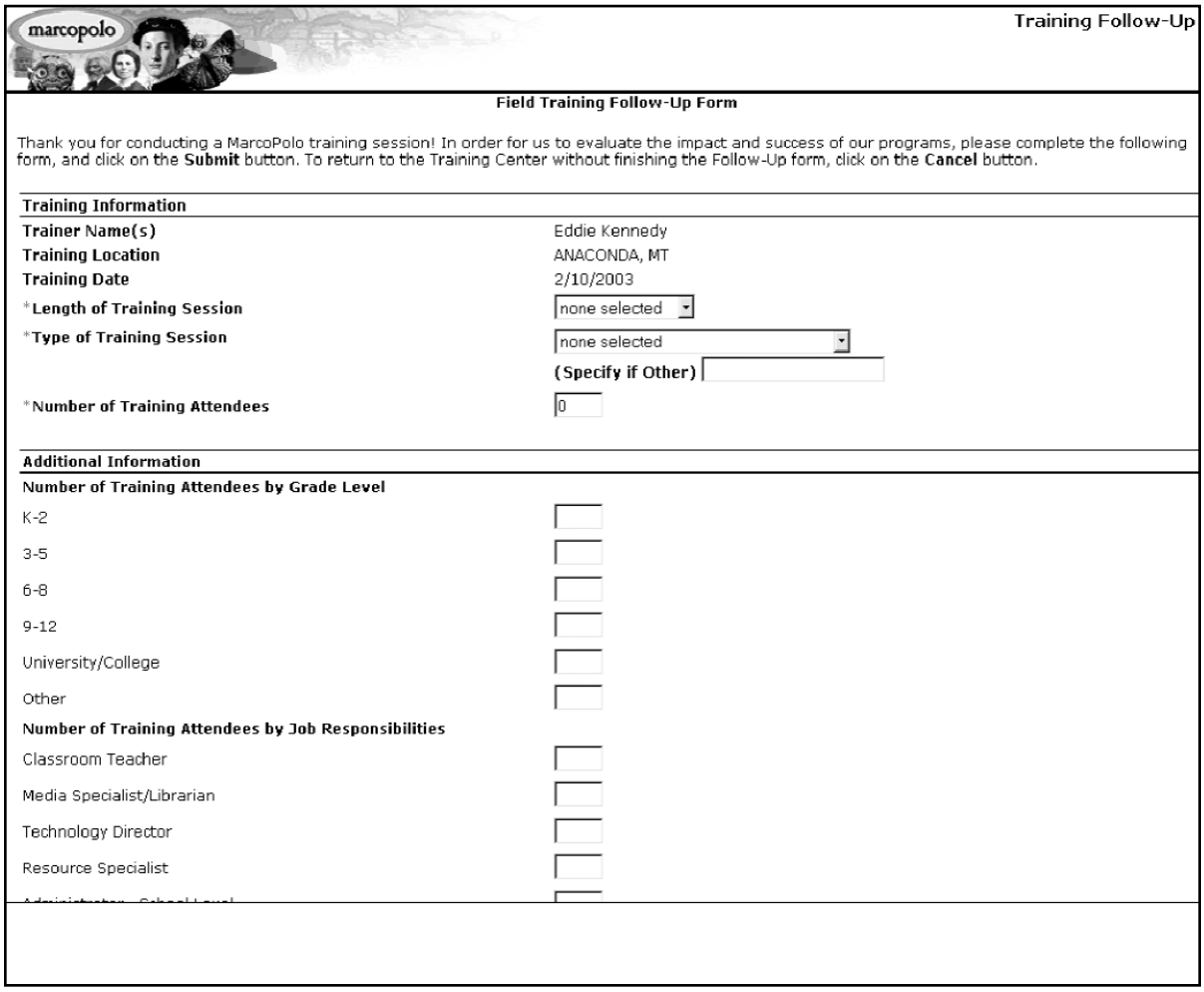
- As stated, once you have selected your name from the list, you will see a screen that lists the training sessions you have registered and conducted within the last three days. If your training session took place more than three days in the past, please click the Other link at the bottom of the page to view training by week. You can then click the black left-hand arrow at the top of the list and access previous weeks.



Trainer Resource Center User's Guide (continued)

Completing the Field Training Follow-Up Form

After a training date is selected, the page refreshes and displays the Field Training Follow-Up Form for the selected session.



- Complete all requested fields in the Field Training Follow-Up Form, and click the Submit button.
- To cancel the Field Training Follow-Up Form and return to the Trainer Resource Center, click the Cancel button. Click the Reset button to undo any unsaved information.

After you submit the Field Training Follow-Up Form, a confirmation message appears.

- Click the Done button to close the pop-up window and return to the Trainer Resource Center.

Now you have completed Step 4. Thank you for your help in rolling out MarcoPolo and helping us and your state measure our success!

Trainer Resource Center User's Guide (continued)

SUBMITTING ROSTERS AND SURVEYS FOR PAST TRAINING SESSIONS

If, due to equipment constraints, you are not able to have attendees sign in on the roster or take a survey during your training session, please ask them to complete the roster and survey on their own after the session. The instructions for doing so may be found below; please feel free to distribute these instructions to attendees should the need arise. Also, these instructions are accessible online in the Trainer Resource Center in the During section. (Please note that a session must be registered in order for attendees to sign a roster or take a survey. See page VII.13 of this Teacher Training Kit for information on registering Field Training sessions.)

Instructions for Attendees Completing the Roster after a Training Session

- Go to the Professional Development page of the MarcoPolo Web site (http://www.marcopolo-education.org/pd/pd_index.aspx) and click on Training Logistics Forms in the left navigation bar.
- Click on Sign In on the Roster under the Attendee steps.
- A new browser will appear listing the training for that day—this is Step 1, where you will begin to search for the correct session for which to sign the roster.
- To access previous or future days/weeks, scroll to the bottom of the training list and click on Show Weekly Calendar. Then use the black arrows at the top of the list to access other weeks' training.
- Locate the correct training session in the list, based on the training date, location and times. Then click on the hyperlinked date and time next to your trainer's name and location.
- The browser will then refresh to Step 2, where you will search for your school or organization.
- Select your home state from the drop-down list in 2A. In 2B, type three or four letters of a key word in your organization or school name—such as "Tayl" for Taylor Elementary School. This search is conducted to help MarcoPolo identify which schools are being reached by the program; therefore, please be specific when selecting your school or organization (i.e., if you teach in an elementary school, search for that school, not the school district). Also, please use your own organization affiliation and not your trainer's.
- In Step 3, you will select your organization from the list in the box. To select an organization, click on the correct name in the box so it is highlighted, and then click on the Continue button at the bottom of the page; you may need to scroll down a bit. (If you cannot find your organization in the list, note that many school and organization names selected through this tool are truncated. For this reason, it may be helpful to search using only a partial school name. For example, because many departments of education are listed in the database as "DEPT OF EDUC," a search for "department" would not yield these organizations' names. To locate such truncated names, be sure to search on partial words such as "dept" or "educ." If you have exhausted all other options and are still unable to locate your training, please complete the fields located under the search results list box.

Trainer Resource Center User's Guide (continued)

- Once an organization is selected, the page will refresh to the last step, Step 4: Tell Us About Yourself. Enter all requested information; for attendees of Train the Trainer sessions, this will include the two questions at the top of the page regarding intention to conduct future MarcoPolo training sessions and their willingness to be contacted to conduct training sessions.
- Once all information has been entered, click the Submit button at the bottom.
- Please note: The information collected by the roster is for use by the state Partners and the MarcoPolo program only and is used to track the progress of MarcoPolo rollout in the states.

Instructions for Attendees Completing a Survey after a Training Session

- Go to the Professional Development page of the MarcoPolo Web site (http://www.marcopolo-education.org/pd/pd_index.aspx) and click the Training Logistics Forms link in the left navigation bar.
- Click on Attendees—Take the Training Survey under the Attendee steps.
- A new browser will appear with a list of training sessions for that day. This is Step 1, where you will begin to search for the correct session for which to complete a survey.
- To access previous days or weeks, scroll to the bottom of the list and click on the Show Weekly Calendar link. You can then use the black arrows at the top of the list to access other weeks' sessions.
- Locate the correct training in the list based on the training date, location and times. Then click on the hyperlinked date and time next to your trainer's name and location.
- The page will refresh to the MarcoPolo Training Session Survey page, where we ask that you answer the questions to the best of your ability. Please note that you can complete the survey anonymously or you can select your name from the drop-down list.

Training Logistics Forms—MarcoPolo Printable Roster (single form)

Please note: This online form is to be completed by your attendees during each training you conduct. This is a hard copy of the online form. Please have your attendees complete this form online at http://www.marcopolo-education.org/pd/logistics.aspx.

In this final step, you need to complete your contact information as well as provide additional information on the grade level that you teach or are involved with, your job responsibilities and the discipline you teach. Remember that all of the information you provide will be used exclusively for the MarcoPolo program. This information will never be used or sold for commercial purposes.

* Denotes Required Information

* Do you intend to conduct MarcoPolo training in your school, district or state after receiving this training?
___Yes ___No

* Are you willing to be contacted to conduct a MarcoPolo training session?
___Yes ___No

* First Name _____

Middle Name/Initial _____

* Last Name _____

Job Title _____

Address 1 _____

Address 2 _____

* City _____

* State _____

ZIP Code _____

Phone Number _____

* E-Mail _____

NOTE: PLEASE ENTER **NONE** IF YOU DO NOT HAVE AN E-MAIL ADDRESS.

Grade Level:	**Job Responsibilities:**	**Discipline Taught:**
___ K–12	___ Classroom Teacher	___ Arts
___ 3–5	___ Media Specialist/Librarian	___ Economics
___ 6–8	___ Technology Director	___ Foreign Language
___ 9–12	___ Resource Specialist	___ Geography
___ University/College	___ Administrator—School Level	___ Language Arts
___ Other:	___ Administrator—District/State Level	___ Mathematics
_____	___ Staff Development Specialist	___ Philosophy & Religion
	___ University Faculty/Staff	___ Science
	___ Other:	___ Social Studies
	_____	___ Other:
		_____

Training Logistics Forms—MarcoPolo Printable Roster (group form)

Please note: This online form is to be completed by your attendees during each training you conduct. This is a hard copy of the online form. Please have your attendees complete this form online at http://www.marcopolo-education.org/pd/logistics.aspx.

* Training Session Date _____
* Training Session City, State _____
* Name of Field Trainer _____

Training Session Attendees

Please complete the information below. Your e-mail address is optional; however, it will enable MarcoPolo to contact you with updates and additional information during the rollout phase of your state's MarcoPolo training. (NOTE: All of the information you provide will be used exclusively for the MarcoPolo program. This information will never be used or sold for commercial purposes.)

	Name	E-Mail Address	Organization	City, State
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Training Logistics Forms—MarcoPolo Training of End Users Survey

Please note: This online form is to be completed by your attendees during each training you conduct. This is a hard copy of the online form. Have your attendees complete this form online at http://www.marcopolo-education.org/pd/logistics.aspx.

Training Information

Trainer Name(s) _____

Training Location _____

Training Date _____

Your Name _____

LEAVE YOUR NAME BLANK IF ANONYMOUS

Program Presentation

1. How long was the training session?

___0–2 hours
___2–4 hours
___4–6 hours
___6–8 hours
___2-day workshop

2. Please evaluate the effectiveness of the trainer/presenter (on a scale of 1 to 5).

___5 (very effective)
___4 (effective)
___3 (somewhat effective)
___2 (not too effective)
___1 (not effective at all)

3. Please indicate your judgment on the length of the training session.

___Too long
___Too short
___Just about right

4. Please comment on how well you feel the trainer presented the MarcoPolo Web site and materials.

_____
_____
_____
_____
_____

Training Logistics Forms—MarcoPolo Training of End Users Survey

Program Effectiveness

5. How appropriate was the training to your level of experience with the Internet?

___Too elementary

___Too advanced

___Just about right

6. Please indicate which of the following best describes your professional responsibilities within the school system.

___Classroom teacher

___Media specialist/librarian

___Technology specialist/coordinator

___Curriculum coordinator

___School administrator

___Staff development specialist

___University faculty/staff

___Resource specialist

7. How effective was the MarcoPolo training session in addressing your professional responsibilities (on a scale of 1 to 5)?

___5 (very effective)

___4 (effective)

___3 (somewhat effective)

___2 (not too effective)

___1 (not effective at all)

8. After receiving the training, how prepared do you feel to use MarcoPolo in your teaching (on a scale of 1 to 5)?

___5 (very prepared)

___4 (prepared)

___3 (somewhat prepared)

___2 (not too prepared)

___1 (not prepared)

Training Logistics Forms—MarcoPolo Training of End Users Survey

9. Please rate the overall training session.

___5 (excellent)

___4 (good)

___3 (average)

___2 (fair)

___1 (poor)

10. Please provide any additional comments, suggestions or criticism related to the training you just received.

_____

_____

_____

_____

_____

11. How relevant and useful is the MarcoPolo content (lesson plans, links and other resources) to the K–12 curriculum and standards of learning (on a scale of 1 to 5)?

___5 (very relevant and useful)

___4 (relevant and useful)

___3 (somewhat relevant and useful)

___2 (not too relevant and useful)

___1 (not relevant and useful)

12. How would you rate the quality of the content (lesson plans, links and other resources) on the MarcoPolo Web sites (on a scale of 1 to 5)?

___5 (excellent)

___4 (good)

___3 (average)

___2 (fair)

___1 (poor)

13. How helpful is the MarcoPolo Search Engine in helping you find quality Internet content for your classroom (on a scale of 1 to 5)?

___5 (very helpful)

___4 (helpful)

___3 (somewhat helpful)

___2 (not too helpful)

___1 (not helpful)

Training Logistics Forms—MarcoPolo Training of End Users Survey

14. Will you use MarcoPolo in the future?

___Occasionally

___Monthly

___Weekly

___Never

15. Will you recommend MarcoPolo to colleagues?

___Unlikely

___Possibly

___Absolutely

16. Please provide any additional comments related to the quality and usefulness of the MarcoPolo Web site.

_____

_____

_____

_____

_____

17. How important are the following features of Internet content to your teaching (5 = most important, 1 = least important)?

1	2	3	4	5	
_____	_____	_____	_____	_____	Correlation to National Standards
_____	_____	_____	_____	_____	Correlation to State Standards
_____	_____	_____	_____	_____	Detailed Lesson Plans
_____	_____	_____	_____	_____	Student Reproducibles or Handouts
_____	_____	_____	_____	_____	Interactive Activities for Students
_____	_____	_____	_____	_____	Assessment Tools
_____	_____	_____	_____	_____	Links to Other Web-Based Content

Training Logistics Forms—MarcoPolo Training of Trainers Survey

Please note: This online form is to be completed by your attendees during each training you conduct. This is a hard copy of the online form. Please have your attendees complete this form online at http://www.marcopolo-education.org/pd/logistics.aspx.

First Name _____

Middle Name/Initial _____

Last Name _____

Job Title _____

Address 1 _____

Address 2 _____

City _____

State _____

ZIP Code _____

Phone Number _____

E-Mail _____

Do you intend to conduct MarcoPolo training in your school, district or state after receiving this training?

___Yes ___No

Are you willing to be contacted to conduct a MarcoPolo training session?

___Yes ___No

Program Presentation

1. How long was the training session?

___0–2 hours

___2–4 hours

___4–6 hours

___6–8 hours

___2-day workshop

2. Did the facilities (i.e., computers, Internet connection speed, setting) allow for successful training?

___Yes

___No

___Somewhat

Training Logistics Forms—MarcoPolo Training of Trainers Survey

3. Please comment on any problems you might have had with the training site.

_____

_____

_____

_____

_____

4. Please evaluate the effectiveness of the trainer/presenter (on a scale of 1 to 5).

___5 (very effective)

___4 (effective)

___3 (somewhat effective)

___2 (not too effective)

___1 (not effective at all)

5. Please indicate your judgment on the length of the training session.

___Too long

___Too short

___Just about right

6. Please comment on how well you feel the trainer presented the MarcoPolo Web sites and materials.

_____

_____

_____

_____

_____

7. Please evaluate the length of time given to each section of your training.

Too much time	**Just enough time**	**Not enough time**	
_____	_____	_____	Sample Lesson
_____	_____	_____	Discussion of the Internet in Relation to Teaching
_____	_____	_____	Description of MarcoPolo Web Sites
_____	_____	_____	Discussion of Teacher Training Kit and Preparation for Training
_____	_____	_____	Curriculum Development

Training Logistics Forms—MarcoPolo Training of Trainers Survey

Program Effectiveness

8. How appropriate was the training to your level of experience with the Internet?

___Too elementary

___Too advanced

___Just about right

9. Please indicate which of the following best describes your professional responsibilities within the school system.

___Classroom teacher

___Media specialist/librarian

___Technology specialist/coordinator

___Curriculum coordinator

___School administrator

___Staff development specialist

___University faculty/staff

___Resource specialist

10. How effective was the MarcoPolo training session in addressing your professional responsibilities (on a scale of 1 to 5)?

___5 (very effective)

___4 (effective)

___3 (somewhat effective)

___2 (not too effective)

___1 (not effective at all)

11. After receiving this training, how prepared do you feel to use MarcoPolo in your teaching (on a scale of 1 to 5)?

___5 (very prepared)

___4 (prepared)

___3 (somewhat prepared)

___2 (not too prepared)

___1 (not prepared)

Training Logistics Forms—MarcoPolo Training of Trainers Survey

12. After receiving the training, how prepared do you feel to go back to your schools and conduct training sessions for teachers in your state or district (on a scale of 1 to 5)?

___5 (very prepared)

___4 (prepared)

___3 (somewhat prepared)

___2 (not too prepared)

___1 (not prepared)

13. How effective was the MarcoPolo training session in providing ideas for integrating the Internet into the school curriculum (on a scale of 1 to 5)?

___5 (very effective)

___4 (effective)

___3 (somewhat effective)

___2 (not too effective)

___1 (not effective at all)

14. Please rate the overall training session.

___5 (excellent)

___4 (good)

___3 (average)

___2 (fair)

___1 (poor)

15. Please provide any additional comments, suggestions or criticism related to the training you just received.

_____

_____

_____

_____

_____

Training Logistics Forms—MarcoPolo Training of Trainers Survey

MarcoPolo Web Sites

16. How relevant and useful is the MarcoPolo content (lesson plans, links and other resources) to the K–12 curriculum and standards of learning (on a scale of 1 to 5)?

___5 (very relevant and useful)

___4 (relevant and useful)

___3 (somewhat relevant and useful)

___2 (not too relevant and useful)

___1 (not relevant and useful)

17. How would you rate the quality of the content (lesson plans, links and other resources) on the MarcoPolo Web sites (on a scale of 1 to 5)?

___5 (excellent)

___4 (good)

___3 (average)

___2 (fair)

___1 (poor)

18. How helpful is the MarcoPolo Search Engine in helping you find quality Internet content for your classroom (on a scale of 1 to 5)?

___5 (very helpful)

___4 (helpful)

___3 (somewhat helpful)

___2 (not too helpful)

___1 (not helpful)

19. Will you use MarcoPolo in the future?

___Occasionally

___Monthly

___Weekly

___Never

20. Will you recommend MarcoPolo to colleagues?

___Unlikely

___Possibly

___Absolutely

Training Logistics Forms—MarcoPolo Training of Trainers Survey

21. Please provide any additional comments related to the quality and usefulness of the MarcoPolo Web sites.

_____

_____

_____

_____

_____

22. How important are the following features of Internet content to your teaching (5 = most important, 1 = least important)?

1	2	3	4	5	
_____	_____	_____	_____	_____	Correlation to National Standards
_____	_____	_____	_____	_____	Correlation to State Standards
_____	_____	_____	_____	_____	Detailed Lesson Plans
_____	_____	_____	_____	_____	Student Reproducibles or Handouts
_____	_____	_____	_____	_____	Interactive Activities for Students
_____	_____	_____	_____	_____	Assessment Tools
_____	_____	_____	_____	_____	Links to Other Web-Based Content

Training Logistics Forms—Field Training Follow-Up Form

Please note: This online form is to be completed by you following each training you conduct. This is a hard copy of the online form. Please complete this form online at http://www.marcopolo-education.org/pd/ftrc.aspx.

* Denotes Required Information

* Trainer Name(s) _____

* Training Location _____

* Training Date _____

* Length of Training Session:

___0–2 hours
___2–4 hours
___4–6 hours
___6–8 hours
___2-day workshop

* Type of Training Session:

___Awareness Session
___Field Training of Teachers/End Users
___Field Training of Trainers
___Other (specify) _____

Additional Information

Number of Training Attendees by Grade Level:

K–2 _____
3–5 _____
6–8 _____
9–12 _____
University/College _____
Other _____

Training Logistics Forms—Field Training Follow-Up Form

Number of Training Attendees by Job Responsibilities:

Classroom Teacher _____
Media Specialist/Librarian _____
Technology Director _____
Resource Specialist _____
Administrator—School Level _____
Administrator—District/State Level _____
Staff Development Specialist _____
University Faculty/Staff _____
Other _____

Number of Training Attendees by Discipline Taught:

Arts _____
Economics _____
Foreign Language _____
Geography _____
Language Arts _____
Mathematics _____
Philosophy & Religion _____
Science _____
Social Studies _____
Other _____

Did you receive any feedback from teachers about MarcoPolo, the MarcoPolo Web site or the MarcoPolo teacher training program? If so, elaborate below:

_____

_____

_____

_____

_____