

EARTH TRAILS: MISSISSIPPI RIVER

Your students play a very important role in this program. They have been hired by Earth Trails Productions as assistant producers. They will travel to sixteen locations along the river while they research and complete assignments sent from the executive producer of Earth Trails Productions, Elizabeth Edwards. Assignments drive the student experience. Twenty-two assignments are included, but students are also given the opportunity to create their own “feature productions.” You might also decide to create your own assignments for them to work on.

Assistant producers must research their assignments; collect sounds, images, and video segments; and tie all of the collected information into multimedia projects. Everything they see and hear can be included in their multimedia production. There are several resources embedded in this multimedia program, including interviews, books, movies, posters, and sounds. In addition, there are several other resources available. Classroom activities (*see Activities page 10*) can extend the issues and content presented in the program. Our Web site resources (www.iptv.org/mississippi) also extend the flexibility of this program in your classroom.

This program is designed to provide your students with the opportunity to research content and issues related to the Mississippi River. The CD-ROM and accompanying materials were developed to accommodate a variety of teaching styles, student needs, and classroom situations in use today. *Earth Trails: Mississippi River* can be easily adapted or modified to meet most classroom environments.

Because learner engagement can be a daunting task for even the most creative educator, Iowa Public Television works to create innovative, interactive programs that challenge and motivate users to exercise exploration and problem solving techniques to learn. *Earth Trails: Mississippi River* CD-ROM includes extensive use of a Web site; the World Wide Web; and classroom activities designed for math, language arts, science, and social studies classrooms, all while focusing on nationally recognized standards and benchmarks.

PROGRAM OBJECTIVES

Earth Trails: Mississippi River has four main objectives.

Students will:

- ✦ research, investigate, and study the Mississippi River to understand its important connections to commerce, natural environments, history, and culture in the United States.

- ✦ demonstrate the ability to apply their research and knowledge about the river within the content areas of science, math, social studies, and language arts.
- ✦ creatively use technology to develop communication and content-based skills that can be applied through the rest of their education and career.
- ✦ demonstrate problem-solving skills emphasized in nationally recognized standards and benchmarks.

MATERIALS INCLUDED

Included in the complete *Earth Trails: Mississippi River* package:

1. Teacher Handbook
 - ✦ Assignments
 - ✦ Rubrics
 - ✦ Scavenger Hunt
 - ✦ Content Themes
 - ✦ Activity Summary
2. Producer Handbook
 - ✦ Letter from the Executive Producer
 - ✦ Scenario
 - ✦ Technical Help
 - ✦ Assignments
 - ✦ Scavenger Hunt
 - ✦ Rubrics
 - ✦ Glossary
3. Earth Trails Production Newsletter / Map
4. CD-ROM

CD-ROM Extras

The CD-ROM contains Adobe Acrobat PDF files for viewing and printing additional copies of the materials printed in this package. PDF is a type of document that maintains the formatting we’ve designed regardless of the programs your computer has. You will need Adobe Acrobat Reader to open and print these documents. We have included the Adobe Acrobat installer on the CD-ROM for your convenience.

PDF Files Included on this CD-ROM

- ✦ Classroom Activities
- ✦ Cornerstones of Quality
- ✦ Earth Trails Newsletter
- ✦ Five Steps to Problem Solving
- ✦ Map
- ✦ Producer Handbook
- ✦ Sources
- ✦ Teacher Guide

You can also download the classroom activities from our Web site <www.iptv.org/mississippi>.

JUMP RIGHT IN

You are strongly encouraged to read through this handbook, but if you feel comfortable with the program, this section highlights the important steps you should take to familiarize your students with the *Earth Trails: Mississippi River* CD-ROM before jumping in.

Read Background Material

Have your students read the Welcome Letter from Ms. Edwards (in their Producer Handbook). This letter gives students the scenario. They learn what they were hired to do, what is expected of them, and how to begin.

Demonstrate Navigation

Take a few moments to show students how to navigate through the CD-ROM. Students can get specific information from their handbook, but a quick overview will allow them to get started right way.

Create a User Name and Password

The students need to create a user name and password. You have access to their user names and passwords through the Instructor Mode feature of the program. (See the back of this guide and *Instructor Mode*, page 9.)

Create a Saved Session Folder

All of their session material is saved to a folder. The default location for this folder is the computer's hard drive in a SAVED SESSIONS folder. If you are using an alternate location to store their session, let your students know where to save their sessions.

Practice on a Scavenger Hunt

We suggest starting your students with the Scavenger Hunt located in the Producer Handbook Appendix to help them become familiar with the program. (See the *Appendix for the Scavenger Hunt answer key*.)

While on the scavenger hunt, assistant producers:

- ✎ take pictures
- ✎ record video and sound
- ✎ recognize details
- ✎ check Trail Mail
- ✎ view movies
- ✎ navigate and travel
- ✎ learn many other skills necessary for good problem solving within the program

Visit the Production House

The Production House, the starting point, contains great resources for new assistant producers.

- ✎ Jill, Fritz, and Elizabeth explain the job.
- ✎ A video demonstrates the Amadeus Media Composer and its exciting new features.
- ✎ Sample assignments are loaded on laptops for viewing.
- ✎ The upstairs River Room provides content on a river and its many parts.
- ✎ Posters and pictures motivate students to explore.

Specify Your Requirements

Because of the intentional flexibility of the program, you have the opportunity to choose which rubrics and assignments the students will use. You do not have to give students autonomy over their assignments. We want you to adapt them for your curriculum and classroom needs.

CHART YOUR OWN COURSE

Earth Trails: Mississippi River contains great information that can be used in many different ways. We have pinpointed some areas you will need to consider.

Grouping of Students

Depending on class time, student age and ability, available resources, and other factors, *Earth Trails: Mississippi River* can be used in a variety of grouping situations.

INDIVIDUALS

- ✎ one student per computer
- ✎ individual work on assignments

PARTNERS

- ✎ share computer navigation responsibilities
- ✎ share notetaking
- ✎ cooperate on assignments

COOPERATIVE LEARNING GROUPS

- ✎ share computers
- ✎ create learning groups with each student performing a specific task (notetaker, navigator, coordinator)
- ✎ cooperate on assignments

WHOLE CLASS

- ✎ share computers (break into task specific groups)
- ✎ one student per computer
- ✎ take notes, discuss issues, decide on travel, and problem solve together

Assessment

Every teacher has his or her own preferred method of assessment. This project offers many different tools to teachers and students for tracking improvement. This includes a general assignment rubric, assignment-specific rubrics, and individual classroom activities assessments.

You may choose to use Earth Trails rubrics (assignment specific, general, and problem solving) as a checklist. You could also create a master rubric for all assignments and/or additional rubric components to meet your particular needs. (See *Assignments*, page 6.)

Note

Rubrics are referred to as checklists in the Producer Handbook. We have created student rubrics with check-boxes to help students monitor their work.

GRADING

You may choose to have each level of the rubrics equate to a percent, point, or letter grade.

PEER ASSESSMENT

Using the rubrics, you may want to develop self, peer, and student assessment strategies. Part of this may include letting students repeat assignments in order to improve their skills until the desired level of quality is reached. Blank rubric forms are provided in the appendix and as a PDF file on the CD-ROM.

PORTFOLIOS

If you use student portfolios, you might consider including student projects from *Earth Trails: Mississippi River* as a part of the portfolio.

Ways to use Earth Trails: Mississippi River

Depending on student ability, availability of technology, and your own classroom needs, using this project can take anywhere from a few class periods to several months. It is not our intention for teachers and students to explore and use all of the available materials and CD-ROM at one time, but rather to have you use the materials as needed to suit your needs.

There are many different ways you can use *Earth Trails: Mississippi River*, either by subject matter, computer usage, or a combination of both. The following scenarios show some examples of how you can use the program in your classroom.

BY SUBJECT MATTER

Language Arts Example

A sixth grade language arts teacher concludes a poetry unit by using the CD-ROM as a resource for writing haiku, cinquain, limerick, and other short poetic forms. Each student selects a Mississippi-related topic such as slavery, bridges, steamboats, Indians, Mississippi flyway, blues, jazz, ragtime, rock and roll, Mardi Gras, or Mississippian culture for exploration. Using the CD, along with Internet and library resources, students learn about their topics and create content-rich poems. After completing the task, students are able to generate a new list of topics for more poems from their science, math, and social studies courses to add to their collections for an end-of-the-year poetry reading entitled "Poems Across the Curriculum."

Social Studies Example

A grades 6–8 social studies teacher in a small middle school uses the CD-ROM assignments and activities as a way to connect social studies to other curricular areas for all three grades. Sixth graders in the Ancient History course focus on the geological history of the river and Mississippian culture. Students in grade seven World Geography determine relative and absolute location; and latitude and longitude of various cities and sites within the program. Finally, eighth graders pick up the program's application as it applies to U.S. history, focusing their studies on exploration, American Indians, and the Civil War. All

three grade levels are given a list of assignments to complete that relate to their curricular area. Many students use examples of their work for their graduation project to document their growth throughout middle school.

Science Example

An eighth grade science teacher kicks off a year of interdisciplinary study with a unit entitled "The World's Longest Rivers." Students complete most of the assignments and activities in the *Earth Trails: Mississippi River* package in time for the school's open house. Students present their multimedia presentations and other products to visitors, and later devise their own multimedia presentations as evidence of their studies of the Nile, Amazon, Mississippi, Irtysh, and Yangtze Rivers. For enrichment, students cooperate to publish their own World Record Book, completing research to compile interesting and surprising facts about the world around them.

Math Example

A seventh grade math class is studying basic problem solving. The math teacher uses a few of the problem solving math activities in order to get the students thinking about relevant issues. The students are directed to use the CD-ROM as a resource for specific information regarding transportation. Students work in groups of four to five. One group is assigned the task of researching locks and dams. Group two looks at how durable goods are shipped up and down the river. Group three explores the different types of transportation for getting goods to export markets. Group four acquires content regarding difficulties in shipping goods. And group five explores the types of goods that travel up and down the river. As a class, the students use all of the information they have collected to determine the best way to ship 300,000 bushels of grain from La Crosse to Dubuque and then from Dubuque to New Orleans.

BY COMPUTER AVAILABILITY

Low Usage

A seventh grade science teacher, who is developing a short unit on food webs, selects *Earth Trails: Mississippi River* as a motivational way to introduce the topic. The teacher spends one class period introducing the CD-ROM program to the students and gives them class time to explore. Through the next three class periods, the students are divided into five small groups. Students are told to work on an assignment which requires them to study several different habitats; and, identify animals and plants unique to each area, and explore how they interact in a food web. Based on the given assignment, each group develops a presentation on a food web found in one unique habitat on the Mississippi River.

Medium Usage

A sixth grade classroom uses the CD-ROM for their study of U.S. Geography. They utilize the school's computer lab one hour each morning for two weeks. The instructor divides the class into ten small

groups of two or three students, with each group being responsible for one of the locations that border the Mississippi River. After exploring the program for three days, each group completes one assignment that relates to their location, and uses their geography journals to note what they learn under the Five Themes of Geography. The students import their slide shows into a Powerpoint presentation, and present these in a program for the school board called "The Great River from North to South."

Medium to High Usage

Four middle school teachers in the areas of math, social studies, language arts, and science join forces to create an entire interdisciplinary unit hinging on the program. Students spend two class periods each day for two weeks completing the program's assignments and activities to learn about how each discipline connects to the Mississippi River. Students and teachers use the provided rubrics for feedback, workshopping, and self-assessment to monitor their progress and improve their presentations. The students complete a number of assignments in small groups, rotating responsibilities to make the best use of time. The participating teachers then develop their own interdisciplinary topics for the students to research based on the district standards and the content of the project. Using the CD-ROM, Internet searches, library resources, and primary sources, students research and develop plans to address the complex problems or issues presented to them. As a wrap-up activity, all of the participating students and teachers request, budget, and plan a trip to a nearby river town to study its environment, history, and culture.

Implementation Recommendations

Remember that *Earth Trails Mississippi River* is flexible. It will adapt to your classroom environment. Read through each assignment first. Familiarize yourself with the possible connections to your classroom needs.

- Limit the group of assignments from which your students may choose.
- Work with one or more teachers on an interdisciplinary unit.
- Utilize the project to meet a building, district, or state educational goal (e.g., problem solving, technology standards, becoming a quality producer).
- Use it as an enrichment unit for local curriculum in any area or for students who have tested out of other course material.
- Discourage students from jumping right into assignments. They need to explore the Mississippi's geography. They need to make connections between commerce, environments, traditions, and landscapes in order to come up with the best multimedia productions.
- Encourage students to review the sample assignments found in the Production House. Create one yourself and share it with your class.

- Acquire a student volunteer or two from each class to preview the program before you start with the whole class. They can help you assist their classmates with the program.
- Group students with varying computer abilities together so they can learn from one another.
- Print out assessment rubrics for your students so they can see what they are evaluated on.

Share Student Achievements

- Organize an end of class presentation or slide show. Develop an award show; recognize your students for a job well done (best use of graphics, best use of sound, best of show).
- Import media and text from assignments into a presentation software package (Powerpoint, Mpower, Hyperstudio) for presentation to other classes, parents, and your community.
- Print out of storyboards for self, peer, and teacher feedback.
- Have your students write letters that bring up the issues they researched to newspapers and public officials
- Develop a student or school electronic portfolio.

HELP STUDENTS WITH ASSIGNMENTS

The appendix contains a list of content. This *theme grid* contains most of the content of the program, the form it is viewed in (i.e., book, movie, poster, person), and where it can be found. You can use it to help your students locate content.

NOTE

As an extended learning opportunity for the students, the assignments include a "feature production." After students have completed and submitted three assignments, they are promoted to feature producer. A feature producer can create a feature production. This assignment is created entirely by the student. Students should look on their Amadeus Media Composer, under CHOOSE, for *Feature Production*.

ASSIGNMENTS

The twenty-two assignments selected for this CD-ROM program represent several themes related to the Mississippi River:

- ↳ business
- ↳ environment/biology
- ↳ military history
- ↳ music, arts, literature
- ↳ people
- ↳ river formation
- ↳ river management
- ↳ transportation

The assignments were developed and selected with the following goals in mind:

- ↳ use of higher-order thinking skills
- ↳ cross-curricular
- ↳ supportive of collaborative, cooperative, and individualized learning
- ↳ ease of assessment
- ↳ based on national standards
- ↳ consistent with all curricular elements of the project
- ↳ compatible with multiple levels of teacher involvement
- ↳ fun, challenging, and interesting

STANDARDS AND BENCHMARKS

Earth Trails: Mississippi River program fulfills several of the MCREL standards and benchmarks. Each assignment and accompanying materials may meet many other standards and benchmarks.

THINKING AND REASONING

Standard: 1

Understands and applies the basic principles of presenting an argument

Standard: 5

Applies basic trouble-shooting and problem-solving techniques

Standard: 6

Applies decision-making techniques

TECHNOLOGY

Standard: 1

Knows the characteristics and uses of computer hardware and operating systems

LANGUAGE ARTS STANDARDS

Standard: 1.

Demonstrates competence in the general skills and strategies of the writing process

Standard: 2

Demonstrates competence in the stylistic and rhetorical aspects of writing

Standard: 3

Uses grammatical and mechanical conventions in written compositions

Standard: 4

Gathers and uses information for research purposes

Standard: 5

Demonstrates competence in the general skills and strategies of the reading process

Standard: 6

Demonstrates competence in the general skills and strategies for reading a variety of literary texts

Standard: 7

Demonstrates competence in the general skills and strategies for reading a variety of informational texts

Standard: 8

Demonstrates competence in speaking and listening as tools for learning

HISTORICAL UNDERSTANDING STANDARDS

Standard: 1

Understands and knows how to analyze chronological relationships and patterns

Standard: 2

Understands the historical perspective

THE PURPOSE OF ASSIGNMENTS

Assignments are the vehicle (product) for student learning within the CD-ROM program. They are performed as part of the scenario—the student is an assistant producer for Earth Trails Productions. Each assignment is passed along from Earth Trails Productions' Executive Producer, Elizabeth Edwards. Each assignment presents an issue or task for students to investigate. In order to complete each assignment, students must explore the program, searching for and synthesizing information while also collecting media elements. After compiling all of their resources, students are directed to create multimedia presentations with varying combinations of images, sounds, video, and text.

HOW ASSIGNMENTS ARE ORGANIZED

Each assignment is organized and presented to the assistant producer (student) in three sections: Topic, Information, and Requirements. The teacher assignment versions (*see Appendix*) contain two extra sections: Overview and Trail Mail. Amazing Engineering, an assignment included on the program, is used here to demonstrate the organization of the assignments.

Overview

This sections provides a list of outcomes specific to the assignment.

Students will:

- ✎ identify an example of engineering found along the Mississippi River.
- ✎ identify criteria on which to judge the importance of this invention.
- ✎ create a presentation that justifies the selection based upon their criteria.

Topic

Topics briefly introduce a subject, an issue, or a situation using an informal approach and conversational tone. Topics identify an audience and purpose for the outcome—a multimedia presentation.

The Mississippi River Valley Association of Engineers has asked us to produce a program for a new campaign they are starting in order to increase public awareness of engineering. The program, Engineering Wonders of the Mississippi, will be devoted to exploring the engineering highlights of the Mississippi River and will be broadcast nationwide. Because of the nature of your job, you are in a perfect position to spot an example of the genius of engineering. Find one and produce a feature on it for our client.

Information

This section provides necessary background information, contextual clues, or suggestions for determining a direction or focus. This section may also incorporate overt strategies for learning, providing a framework or scaffolding for students to use as they work. It is intended to convey the impression that either the producer or a coworker is passing along whatever information they already know about the subject.

By definition, engineering is the application of scientific and mathematical principles to practical ends such as the design, manufacture, and operation of efficient and economical structures, machines, processes, and systems.

Requirements

This section states what needs to be included within the assignment. Specific production requirements and expectations for the multimedia presentation are spelled out.

Your multimedia presentation should tell the story of just one amazing feat of engineering that you discover along the river. What makes it special? Who was the engineer behind it? Before you begin, select two or more criteria you think are important for your selection, such as complexity, aesthetics (attractiveness), economic benefits, historical importance, etc....Make sure that your presentation clearly presents this criteria and that you provide supporting details to justify the criteria's importance.

Trail Mail

These are messages sent from the Earth Trails Production office to the assistant producer's Amadeus Media Composer. These messages provide extra information about a topic and strategies for completing assignments.

There are plenty of amazing engineering marvels all along the river. For example, the Gateway Arch in St. Louis was designed to fit together exactly. And don't forget the bridges. Eads Bridge, built by 1874, still exists and had many engineering firsts. My favorite work of engineering is Monks Mound. Even though they probably had no "formal" training, the Mississippians at Cahokia had to be aware of engineering concepts in order to build this mound and most of their city.

ASSIGNMENT ASSESSMENT

Every teacher has his or her own preferred method of assessment. This program offers many different tools for teachers and students to use for tracking improvement. Assessment tools include a general assignment rubric, assignment specific rubrics, and a rubric for assessing problem solving aptitude.

TIP

Assignment rubrics cannot be viewed from within the program. We encourage you to have the students refer to their Producer Handbook for printed versions of the assignments. Every assignment contains a checklist, which is a slightly modified version of the rubric, and lets your students self-check their progress on the assignments. Print copies as needed.

General Rubric

The *Cornerstones of Quality Rubric* has been created for the assessment of all assignments with categories including mechanics, content organization, content accuracy, and media selection. Students are rated amateur, apprentice, practitioner, authority, or expert. (See Appendix.)

Assignment Specific Rubrics

Each assignment includes a rubric component specific to its content and requirements. This rubric and the Cornerstones of Quality are designed to be used together. The student version varies slightly in wording from the rubric included on the teacher copy. (See Table 1, page 8.)

Problem Solving Rubric

Problem solving can also be assessed by using the Five Steps to Problem Solving, a systematic method of problem solving. A rubric is provided that works in conjunction with the general and assignment specific rubrics, or, if you choose, it can stand alone. (See Table 2, page 8 and in the Documents folder on the CD-ROM.)

Assignment-Specific Rubric

Amazing Engineering

Table 1

Amateur	Apprentice	Practitioner	Authority	Expert
<p><input type="checkbox"/> You have selected one example of engineering and identified one criterion, but have not provided supporting details to explain the criterion.</p>	<p><input type="checkbox"/> You have selected one example of engineering, identified one criterion, and provided at least one supporting detail to explain the criterion.</p>	<p><input type="checkbox"/> You have satisfactorily selected on example of engineering, identified at least two criteria, and provided at least one supporting detail each to explain the criteria.</p>	<p><input type="checkbox"/> You have successfully chosen one example of engineering and identified at least two criteria with two convincing supporting details each.</p>	<p><input type="checkbox"/> You have masterfully chosen an example of engineering and identified at least two criteria with more than two superior supporting details each.</p> <p><input type="checkbox"/> Your feature is a fitting tribute to a masterful application of science and math principles.</p>

Five Steps to Problem Solving

Table 2

Amateur	Apprentice	Practitioner	Authority	Expert
<p><input type="checkbox"/> While the problem is evaluated, it has not been clearly identified.</p> <p><input type="checkbox"/> Zero in on the true root of the problem and express it as a statement.</p>	<p><input type="checkbox"/> The problem has been evaluated and identified; however, a plausible solution is not expressed.</p>	<p><input type="checkbox"/> The problem has been identified, evaluated, and a plausible solution has been presented with some evidence.</p> <p><input type="checkbox"/> You are well on your way to becoming a problem solver.</p>	<p><input type="checkbox"/> The problem has been identified, evaluated, and a plausible solution has been presented with convincing evidence.</p> <p><input type="checkbox"/> You show strong problem solving skills.</p>	<p><input type="checkbox"/> The problem has been identified, evaluated, and a solution has been presented with compelling evidence.</p> <p><input type="checkbox"/> Your information displays extensive analysis and awareness of many facets of the issue.</p> <p><input type="checkbox"/> You are a keen problem solver.</p>

INSTRUCTOR MODE

Instructor Mode is a setting that allows you complete access to student files. You can view anything your students have saved, but you cannot make any changes to their files.

- ✦ View assignments.
- ✦ Access forgotten passwords.
- ✦ Read received Trail Mail. (Helpful for determining where a student has traveled.)
- ✦ Print out a list of notes, captured media, or current assignment.

NOTE

In order to use Instructor Mode, you will need a copy of the CD-ROM and access to the students' saved files.

GETTING STARTED

Install the *Earth Trails: Mississippi River* program onto your computer if you haven't already done so. (See the back cover of this guide.)

1. In the Options menu, click on SETTINGS.
2. Select INSTRUCTOR MODE from the list.
You will be asked if you want to save your session. Skip this step if you don't want to save your work.
3. Enter the instructor mode password: MOZART.
4. Close out of the SETTINGS option. You are now in Instructor Mode

REMEMBER

The Instructor Mode password is MOZART. Don't forget to close out of Instructor Mode if a student will be using your computer after you finish viewing saved sessions.

LOADING A STUDENT SESSION

You will need to specify the location of student's saved files (i.e., computer desktop, hard drive, disc, server). The folder's default location is called *Saved Sessions* and is located within the *Mississippi River* folder on the student's computer hard drive.

1. In the Options menu, click on LOAD SESSION.
2. A window will open. Locate the location of the session you wish to load.
3. Select the session with the student or group's name.
4. Start the program.
5. Repeat to open other saved sessions.

The student's assignment will be listed along with the producer name for easy identification. Submitted assignments will be listed in red type within the Assignment Selector feature on the Amadeus Media Composer.

LOST PASSWORDS

In the event a student forgets his or her password, you can load the student's session and click on SHOW PASSWORD, located in the upper right corner of the screen.



ACTIVITIES

Over thirty classroom activities are included on the CD-ROM. These activities extend the issues and content presented in the CD-ROM to your math, science, language arts, and social studies classroom. Our activities have been created with the help of curriculum designers and middle school teachers and are in accordance with MCREL Standards and Benchmarks and NCTM (math) standards. While all of the activities have multidisciplinary components, they have been divided into the areas of math, science, language arts, and social studies. All activities are designed to support higher-order thinking skills, cooperative learning, cross-curricular studies, and student-centered learning. Above all, the activities are intended to be fun, interesting, and challenging.

The activities may be used in coordination with the *Earth Trails: Mississippi River* CD-ROM, but the components can be used independently of one another. Take time to go through the activities before using them. Some activities require more teacher preparation and class time. One science activity requires a class field trip. Some activities will naturally work better as a culmination project after using the CD-ROM. You are encouraged to use them at your discretion.

Each activity is divided into three main sections: Instructor Notes, Assessment, and Student Activity.

INSTRUCTOR NOTES

Instructor notes help you prepare for the activity. This section identifies grade requirements, topics, keywords, and how long the activity should take. Look to the objectives for a list of learning outcomes. *Teacher Notes for Discussion* gives information on the subject to help generate in-class discussion. This section also offers advice on how to prepare and conduct the activity.

ASSESSMENT

Assessment is a tool for you to communicate to the students specific and immediate feedback. The assessment should be shown to the students prior to beginning the activity so that they know exactly what is expected of them. This helps students become self-reliant, self-directed, self-assessing learners. You may want to tailor the rubrics to fit the requirements of your class.

STUDENT ACTIVITY

The student activity is designed to be photocopied and handed directly to the student. You should read through the student activity because it does vary slightly from the Instructor Notes.

The student activity has several elements: Know Your Mission, Study the Facts, Learn the Lingo, Chart a Course for Exploration, Gather Your Supplies, and Go Beyond

Know Your Mission introduces the topic and includes the purpose of the activity. This statement specifies what students will do in the activity.

Study the Facts gives students information necessary to complete the activity.

Learn the Lingo lists terms relevant to the content that are presented within the activity.

Chart a Course for Exploration is the procedure for completing the activity. Each step describes what to do and asks the students to answer questions and make connections between their task and the overall goal.

Gather Your Supplies lists materials and resources the students need to complete the activity.

Go Beyond provides further activities for the student. It emphasizes skills including research, persuasive presentations, and technology use.

See *Activity Descriptions in the Appendix* for a brief description of the thirty-four activities. The activities are located on the CD-ROM in the Activities folder as PDF files.

SOURCES

Plinske, T. "Center for Problem-Based Learning." Illinois Mathematics and Science Academy. July 1, 1998. <<http://www.imsa.edu/team/cpbl/cpbl.html>> (14 June 1999).

Torp, Linda and Sage, Sara. 1998. Problems as Possibilities. Alexandria, Virginia: Association for Supervision and Curriculum Development.

APPENDIX

Scavenger Hunt with
Answer Key
Assignments
Cornerstones of Quality
Rubric and Assignment
Evaluation Form
Theme Grid
Activity Descriptions