SHELLY CASHMAN SERIES®

Teachers Discovering Computers

Integrating Technology and Digital Media in the Classroom
6th Edition

Chapter 7

Evaluating Educational Technology and Integration Strategies

Chapter Objectives

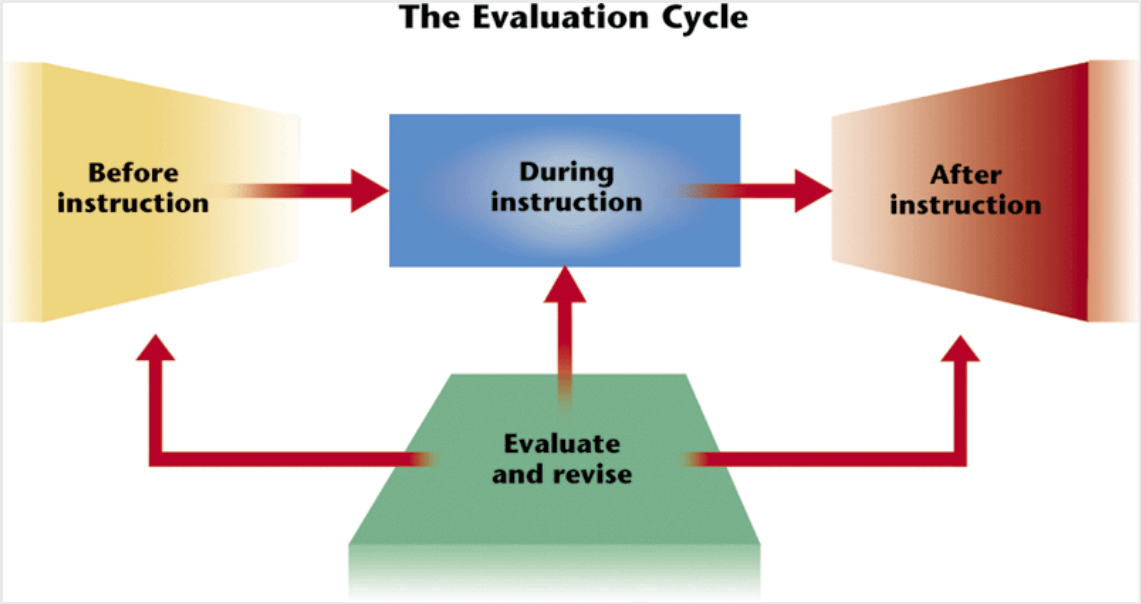
- Identify sources of information for evaluating educational technology and digital media
- Outline the considerations and tools used to evaluate software applications
- Describe and explain the key criteria used to evaluate Web resources
- Describe the tools for evaluating the effectiveness of technology
- Compare and analyze the methods used to evaluate student projects

Chapter Objectives

- Identify different technology integration strategies by classroom layout and design
- Define and describe the value of a curriculum page
- Describe ways to integrate technology into specific curriculum subject areas
- Describe authentic assessment tools for student projects
- Identify and compare possible sources of funding for classroom technology

Evaluating Educational Technology

- Determining if the technology is appropriate and enhances the teaching and learning process
- Evaluate before, during, and after instruction

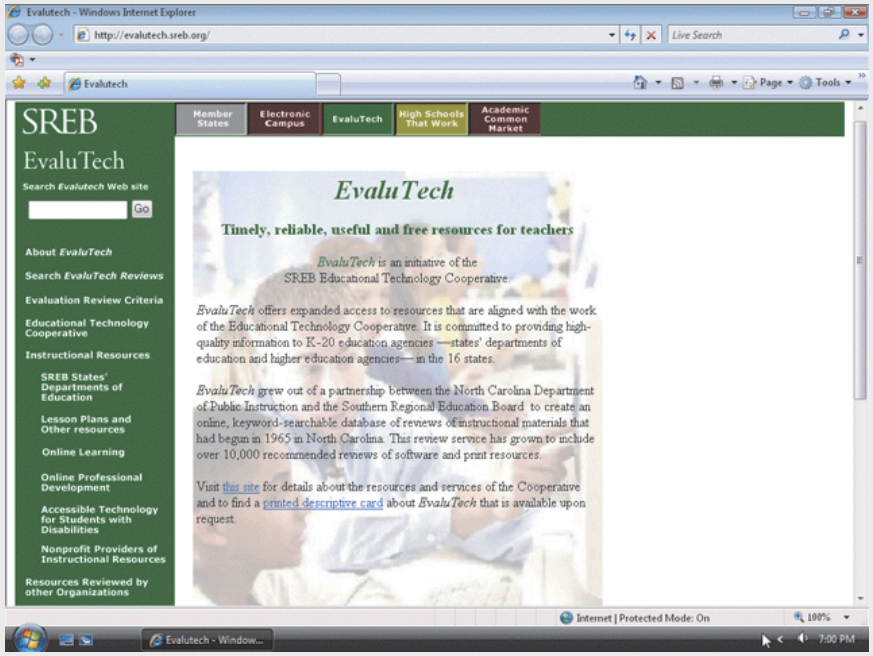


Evaluating Educational Technology

- Sources of Information
  - Numerous resources and technologies to choose from
- School districts and state Departments of Education
  - Lists of recommended software

Evaluating Educational Technology

- Professional educational organizations
  - Local, state, regional, national, and international educational organizations
  - Web sites for organizations



Evaluating Educational Technology

- Catalogs
  - Provide information about products and how to use products
  - Free by calling toll-free numbers or completing an online form
- Colleague Recommendations
  - Discuss issues with other educators
  - Unbiased, first-hand experience

Evaluating Educational Technology

- Published evaluations
  - See company's Web site
  - Educational journals

Evaluating Educational Technology

- Conferences
  - National and state organizations
  - Presentations
  - Meet representative from hardware and software companies

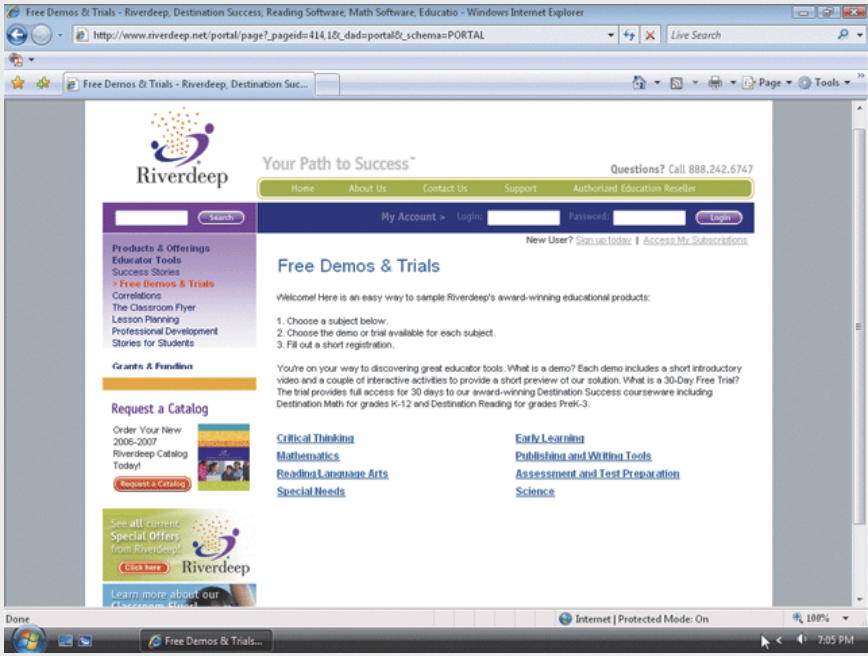
Evaluating Educational Technology

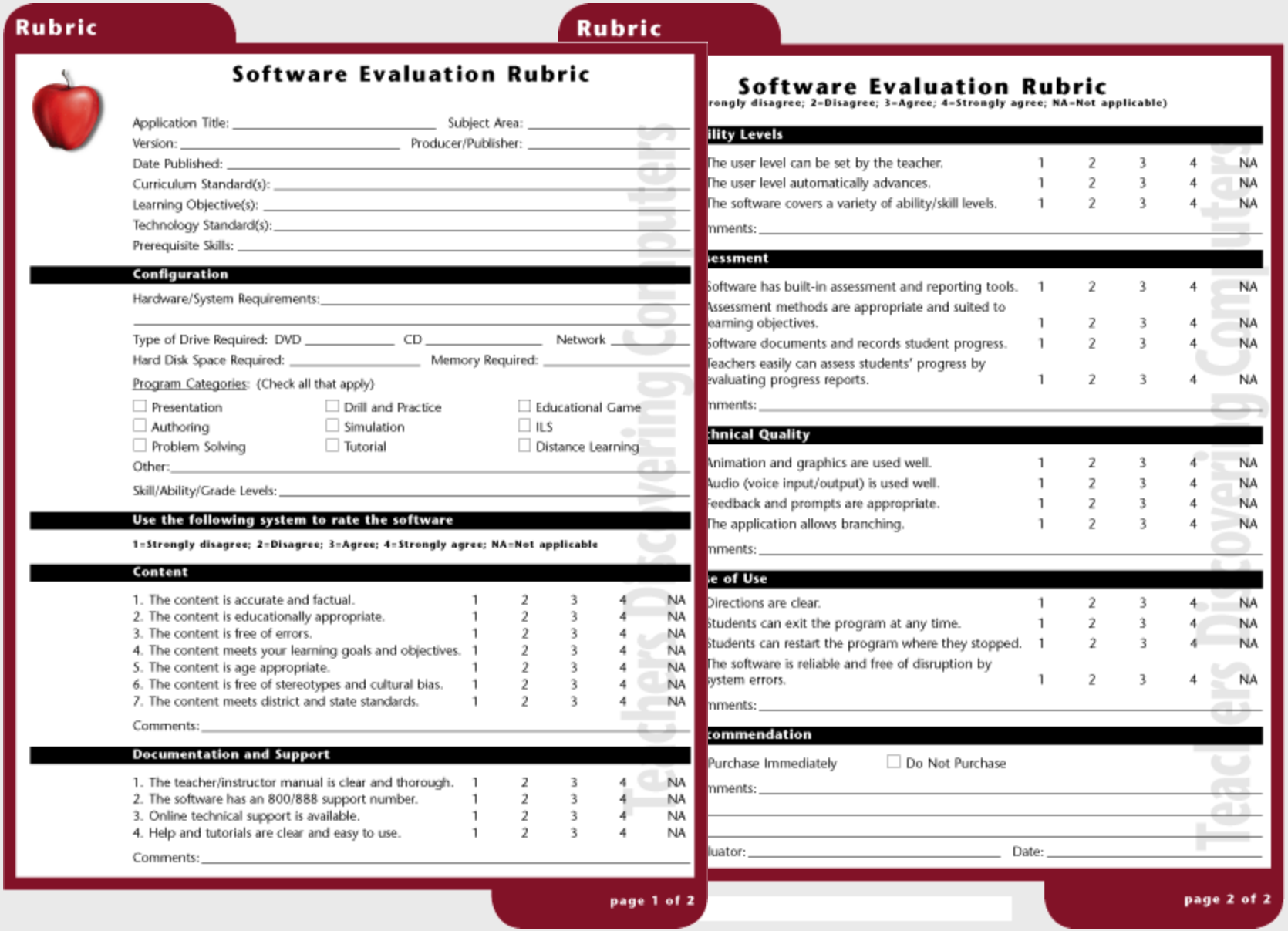
- The Web
  - Mailing lists
    - EDTECH
  - Forums
  - Newsgroups
  - Discussion groups
  - Listservs
  - Wikis
  - Blogs
  - Webinars

Shelly Cashman Series.

Evaluating Educational Technology

- Evaluating Software Applications
  - Free trial versions
  - Software evaluation rubrics
    - Detailed assessment tool





Rubric

Software Evaluation Rubric

Application Title: _____ Subject Area: _____
Version: _____ Producer/Publisher: _____
Date Published: _____
Curriculum Standard(s): _____
Learning Objective(s): _____
Technology Standard(s): _____
Prerequisite Skills: _____

Configuration

Hardware/System Requirements: _____

Type of Drive Required: DVD _____ CD _____ Network _____
Hard Disk Space Required: _____ Memory Required: _____

Program Categories: (Check all that apply)

- ☐ Presentation
- ☐ Drill and Practice
- ☐ Educational Game
- ☐ Authoring
- ☐ Simulation
- ☐ ILS
- ☐ Problem Solving
- ☐ Tutorial
- ☐ Distance Learning

Other: _____

Skill/Ability/Grade Levels: _____

Use the following system to rate the software

1=Strongly disagree; 2=Disagree; 3=Agree; 4=Strongly agree; NA=Not applicable

Content

1. The content is accurate and factual.	1	2	3	4	NA
2. The content is educationally appropriate.	1	2	3	4	NA
3. The content is free of errors.	1	2	3	4	NA
4. The content meets your learning goals and objectives.	1	2	3	4	NA
5. The content is age appropriate.	1	2	3	4	NA
6. The content is free of stereotypes and cultural bias.	1	2	3	4	NA
7. The content meets district and state standards.	1	2	3	4	NA

Comments: _____

Documentation and Support

1. The teacher/instructor manual is clear and thorough.	1	2	3	4	NA
2. The software has an 800/888 support number.	1	2	3	4	NA
3. Online technical support is available.	1	2	3	4	NA
4. Help and tutorials are clear and easy to use.	1	2	3	4	NA

Comments: _____

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Rubric

Software Evaluation Rubric

rongly disagree; 2=Disagree; 3=Agree; 4=Strongly agree; NA=Not applicable)

ility Levels

The user level can be set by the teacher.	1	2	3	4	NA
The user level automatically advances.	1	2	3	4	NA
The software covers a variety of ability/skill levels.	1	2	3	4	NA

nments: _____

sessment

Software has built-in assessment and reporting tools.	1	2	3	4	NA
Assessment methods are appropriate and suited to earning objectives.	1	2	3	4	NA
Software documents and records student progress.	1	2	3	4	NA
Teachers easily can assess students' progress by evaluating progress reports.	1	2	3	4	NA

nments: _____

hnical Quality

Animation and graphics are used well.	1	2	3	4	NA
Audio (voice input/output) is used well.	1	2	3	4	NA
Feedback and prompts are appropriate.	1	2	3	4	NA
The application allows branching.	1	2	3	4	NA

nments: _____

e of Use

Directions are clear.	1	2	3	4	NA
Students can exit the program at any time.	1	2	3	4	NA
Students can restart the program where they stopped.	1	2	3	4	NA
The software is reliable and free of disruption by system errors.	1	2	3	4	NA

nments: _____

commendation

☐ Purchase Immediately ☐ Do Not Purchase

nments: _____

luator: _____ Date: _____

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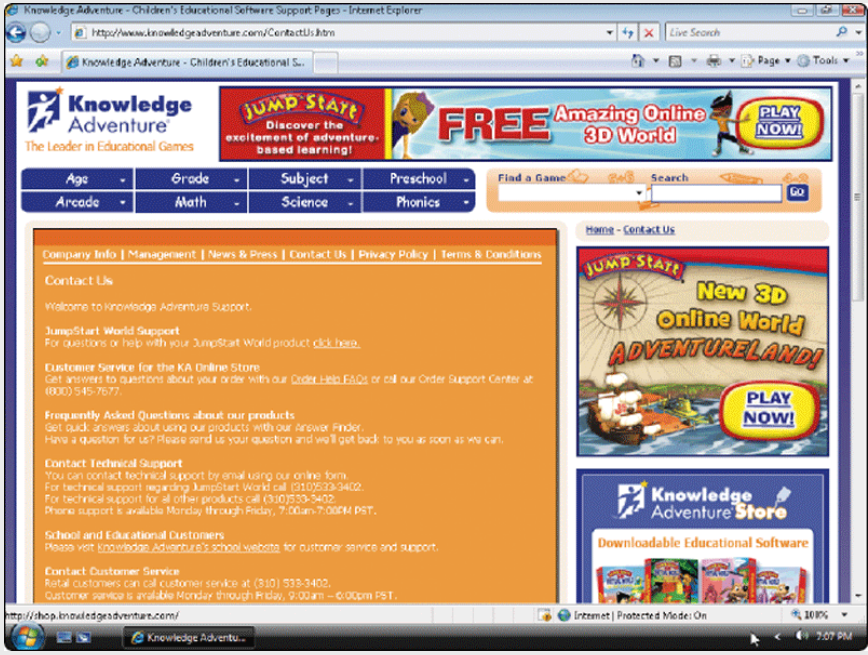
Teachers Discovering Computers

Evaluating Educational Technology

- Evaluating Software Applications
  - Content
    - Is the software valid?
    - Relate content to school's and state's specific curriculum standards and related benchmarks

Evaluating Educational Technology

- Evaluating Software Applications
  - Documentation and technical support
    - Documentation
      - Printed or online information
    - Technical support
      - Telephone or Web support



Evaluating Educational Technology

- Evaluating Software Applications
  - Ability levels and assessment
    - Can software be used with various ability and academic levels?
    - Can software adjust the academic level and students move through the skills

Evaluating Educational Technology

- Evaluating Software Applications
  - Technical quality and ease of use
    - Technical quality
      - How well the software presents itself and how well it works
    - Ease of use
      - User friendliness
    - Student opinion is important in these criteria

Evaluating Educational Technology

- Evaluating Web Resources
  - Authority
    - Is the author clearly identified?
    - Examine the credentials of the author or organization of the Web site
    - Has the author or organization listed experience, position, education, or other credentials?

About . The Ready To Learn Grant . PBS KIDS Raising Readers - Internet Explorer
http://pbskids.org/read/about/
Live Search
About . The Ready To Learn Grant . PBS KIDS Rais...
Page
Tools
Ready To Learn
En Español
PBS KIDS raising readers
About PBS KIDS Raising Readers
Play Island | Log Out
Home
PBS KIDS Island for Parents & Teachers
Stories & Activities
Parent & Caregiver Resources
Teacher Resources
Research
About PBS KIDS Raising Readers
Stories and Drawings
Help get your child ready to read by asking about drawings.
Making Lists
Practice letters and words by doing grocery lists together.
Rhyme Time
Play rhyming games in the store to make anytime learning time.
Exploring Reading Online
Play games that bring reading to life with PBS KIDS Island.
NEWS: RESEARCH PROVES SUPER WHY! HELPS CHILDREN LEARN TO READ
THE READY TO LEARN INITIATIVE
Kids love to learn. PBS KIDS Raising Readers is a national literacy
Done
Internet | Protected Mode: On
100%
About . The Ready T...
7:07 PM

Evaluating Educational Technology

- Evaluating Web Resources
  - Affiliation
    - Who is the Web site associated with?
    - Examine the URL and domain name

Evaluating Educational Technology

- Evaluating Web Resources
  - Purpose and Objectivity
    - Is the content provided as a service?
    - Is the content unbiased?

Evaluating Educational Technology

- Evaluating Web Resources
  - Content and Learning Process
    - Is the content valid and appropriate?
    - Does the information relate to your needs?
    - What topics are covered?
    - For what level is the information written?
    - Do the links within the site add value?

Evaluating Educational Technology

- Evaluating Web Resources
  - Audience and currency
    - Is the content suitable for your students?
    - Is the content up to date and timely?

Evaluating Educational Technology

- Evaluating Web Resources
  - Design
    - Web effectiveness
    - Web Evaluation Rubric

Evaluating Educational Technology

- Evaluating Web Resources
  - Design
    - Student Web Site Evaluation Form

Evaluating Educational Technology

Rubric

Student Web Site Evaluation Rubric

Student team members: _____

DESIGN			
Users can move easily from page to page.	☺	😐	☹
Use of graphics (pictures and color) is good.	☺	😐	☹
CONTENT			
Information is useful.	☺	😐	☹
Content is as good or better than that of similar sites.	☺	😐	☹
TECHNICAL ELEMENTS			
Pages load quickly (within 15 seconds).	☺	😐	☹
All links work.	☺	😐	☹
CREDIBILITY			
Contact person is stated with his or her e-mail address.	☺	😐	☹
The name of the host school or organization is given.	☺	😐	☹
Date this site was last updated is provided.	☺	😐	☹

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Rubric

Web Site Evaluation Rubric

Title of Web Site: _____

Curriculum Area: _____

URL: _____

Learning Objectives Supported by this Site: _____

	Level 1	Level 2	Level 3	Level 4	Level
Authority	No author is listed and no e-mail contact is provided.	No author is listed but an e-mail contact is provided.	An author is listed with no credentials and you cannot tell if the author is the creator of the material.	An author is listed with appropriate credentials and is the creator of the material.	
Affiliation	It is unclear which institution supports this information.	A commercial Internet provider supports the site, but it is unclear if the author has any connection with a larger institution.	The site is supported by a larger institution, but some bias is apparent in the information from the institution.	The site is supported by a reputable institution without bias in the information.	
Purpose	The purpose is unclear or cannot be determined.	The Web site has more than one purpose but meets only a few of my objectives.	The purpose is somewhat clear and meets most of my objectives.	The purpose of the Web site is clear and meets my objectives.	
Objectivity	The Web page is a virtual soapbox.	The Web site contains some bias and a great deal of advertising.	The Web site contains minimal bias and some advertising.	The Web site is free of bias and contains little advertising.	
Content	The information on the Web site does not relate to my objectives.	The information relates to my objectives, but many of the links do not work.	The information relates to my objectives, links work, but the site is not well organized.	The information relates to my objectives, the links work, and the site is well organized.	
Learning Process	The information will not challenge learners to think, reflect, discuss, compare, or classify.	The information will not challenge learners to think but does provide interesting facts for resource information.	The information at this Web site will provide some challenges for the learner to think but does not relate to my objectives.	The information challenges learners to use higher-order thinking skills, effectively engages the learner, and meets my learning objectives.	
Audience	The Web pages are not appropriate for my audience.	The Web pages are written above the level of my audience, but some of the information is useful.	The Web pages are written at an appropriate level for my audience and some of the information is useful.	The Web pages are written at an appropriate level and the information is suitable for my classroom.	
Currency	Information on the site has not been revised in the last 18 months, or no date can be located.	Information on the site has not been updated in the last year, but the information still is of good quality.	Information has been updated in the last six months and seems to reflect currency.	Information has been updated in the last three months and is accurate.	
Design	The Web site design is inappropriate for my audience.	The Web site loads slowly and the general appearance is poor.	The Web site loads well, but the site is not easy to navigate.	The Web site loads well, is easy to navigate, visually pleasing, and easy to read.	
				Total	

Teacher's Discovering Computers

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Evaluating the Effectiveness of Technology Integration

- Assessment Tools for Evaluating the Effectiveness of Technology Integration
  - Measure student performance
  - Reliable assessment
  - Traditional assessment
    - Testing

Evaluating the Effectiveness of Technology Integration

- Assessment Tools for Evaluating the Effectiveness of Technology Integration
  - Alternative assessment
    - Authentic assessment (performance based assessment)
    - Project-based assessment
    - Portfolio assessment
    - Checklist
    - Rating scale
    - Rubric

Evaluating the Effectiveness of Technology Integration

- Tools for Evaluating the Effectiveness of Technology Integration
  - Teacher observation
    - Observe motivation
    - Observe how long students work on an objective

Evaluating the Effectiveness of Technology Integration

- Evaluating Technology-Based Student Projects
  - Integrated learning systems (ILS)
    - Automatically track student progress
  - Assessment rubric

Rubric

Student/Group Project Evaluation Rubric

Team Leader: _____

Team Member(s): _____

Project Title: _____

	Beginning	Developing	Accomplished	Exemplary
Development Process				
Student(s) used quality reference materials and timely Web sites in gathering information.	0 1 2	3 4 5	6 7 8	9 10
Student(s) completed project outline/storyboard.	0 1 2	3 4 5	6 7 8	9 10
Student(s) obtained permission to use copyrighted materials.	0 1 2	3 4 5	6 7 8	9 10
Content				
Understanding of topic is evident.	0 1 2	3 4 5	6 7 8	9 10
Information is presented in a clear manner.	0 1 2	3 4 5	6 7 8	9 10
Information is appropriate and accurate.	0 1 2	3 4 5	6 7 8	9 10
Content shows understanding of the learning objectives.	0 1 2	3 4 5	6 7 8	9 10
Student(s) used higher-order thinking skills when analyzing and synthesizing information.	0 1 2	3 4 5	6 7 8	9 10
Important ideas related to topic are included and an understanding of important relationships is evident.	0 1 2	3 4 5	6 7 8	9 10
Includes properly cited sources.	0 1 2	3 4 5	6 7 8	9 10
Design and Integration of Technology				
The content is presented in a logical, interesting sequence.	0 1 2	3 4 5	6 7 8	9 10
Video, 3D, and all enhancements are used appropriately.	0 1 2	3 4 5	6 7 8	9 10
Colors, images, animation, and sound enrich the content.	0 1 2	3 4 5	6 7 8	9 10
The project works and is technically sound.	0 1 2	3 4 5	6 7 8	9 10
Text is easy to read and students have followed rules of good screen design.	0 1 2	3 4 5	6 7 8	9 10
Accurate spelling and grammar are used throughout.	0 1 2	3 4 5	6 7 8	9 10
Presentation				
The student(s) maintains eye contact with class.	0 1 2	3 4 5	6 7 8	9 10
The student(s) speaks clearly and is easily heard.	0 1 2	3 4 5	6 7 8	9 10
The presentation is an appropriate length.	0 1 2	3 4 5	6 7 8	9 10
Technology is used well while presenting.	0 1 2	3 4 5	6 7 8	9 10

Total Possible 200 **Total** _____

Teacher Discovery

Evaluating the Effectiveness of Technology Integration

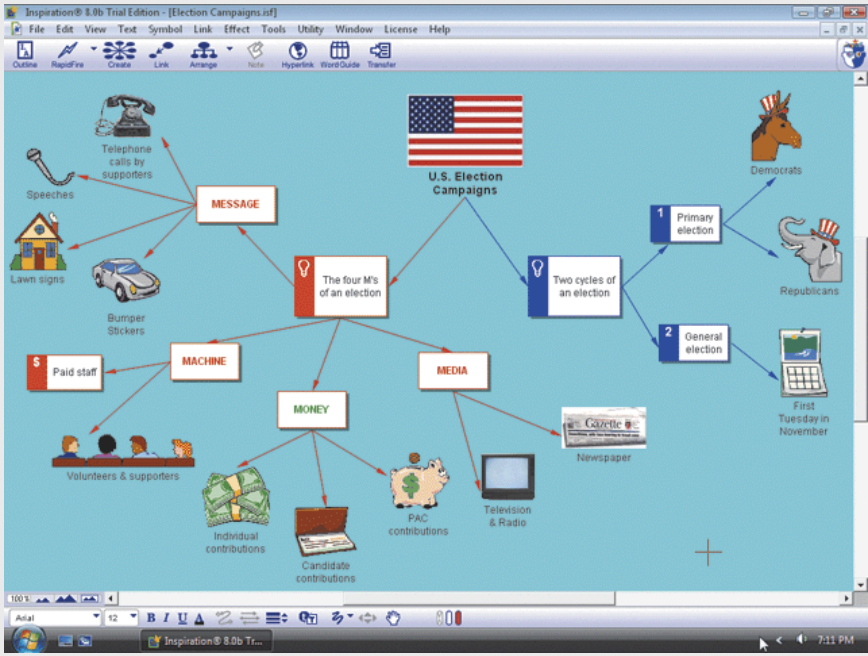
- Evaluating Technology-Based Student Projects
  - Evaluating content
    - Based on your standards and benchmarks
    - Review punctuation, grammar, spelling, coverage of material, presentation of the material in a logical order, and specific information about the author

Evaluating the Effectiveness of Technology Integration

- Evaluating Technology-Based Student Projects
  - Evaluating planning
    - How do you want your students to plan?
    - What tools will the students use?
    - Software tools (Inspiration)
    - Visual learning techniques

Evaluating the Effectiveness of Technology Integration

- Evaluating Technology-Based Student Projects
  - Evaluating planning
    - Flowcharts
    - Concept map or story web
    - Storyboard



Evaluating the Effectiveness of Technology Integration

- Evaluating Technology-Based Student Projects
  - Evaluating creativity
    - Evaluate originality, imaginative and innovative approach, and artistic abilities
    - Color, clip art, and artwork should strengthen content

Evaluating the Effectiveness of Technology Integration

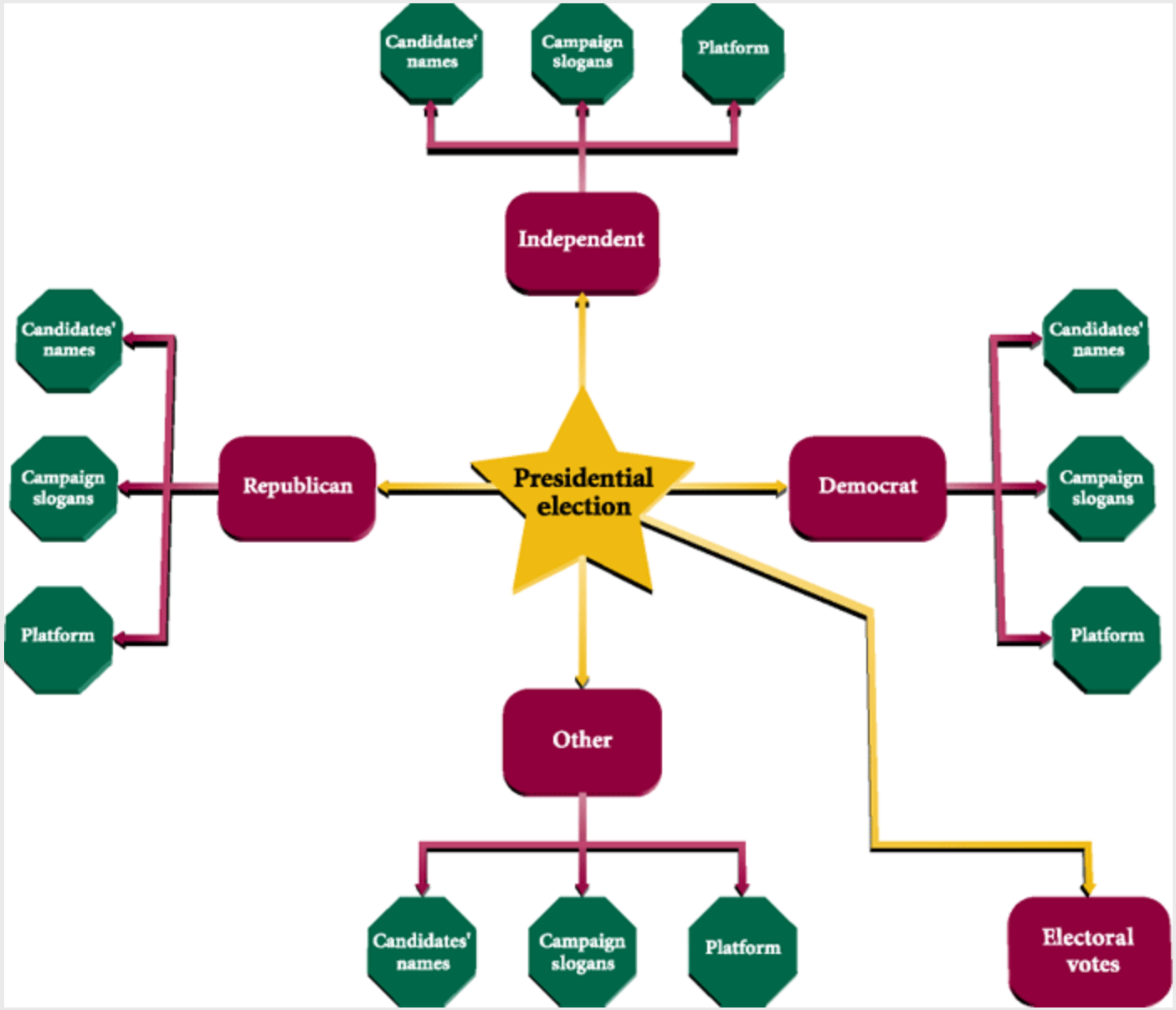
- Putting it All Together - Evaluating Technology Integration
  - Ms. Vicki Osborne's classroom
    - One computer and 26 students
    - Block schedule

Evaluating the Effectiveness of Technology Integration

- Putting it All Together - Evaluating Technology Integration
  - Ms. Vicki Osborne's goals for the lesson
    - Students work in groups
    - Use reference materials and Web resources
    - Identify three major campaign issues
    - Provide personal facts about the candidate
    - Create a group digital media presentation
    - Use correct grammar, spelling, and punctuation

Evaluating the Effectiveness of Technology Integration

- Putting it All Together - Evaluating Technology Integration
  - Ms. Vicki Osborne's lesson
    - Brainstorm to develop a concept map


Candidates' names
Campaign slogans
Platform
Independent
Candidates' names
Campaign slogans
Platform
Republican
Presidential election
Democrat
Candidates' names
Campaign slogans
Platform
Other
Candidates' names
Campaign slogans
Platform
Electoral votes

Evaluating the Effectiveness of Technology Integration

- Putting it All Together - Evaluating Technology Integration
  - Ms. Vicki Osborne's lesson
    - Evaluation rubric
    - Flowchart or storyboard
    - Work in groups in 40-minute blocks
    - Each group presents their project in the media center

Integration Strategies

- Teachers must become facilitators of learning
- Use technology to enhance learning environment
- Put technology at point of instruction
- Many mixtures of technology

Integration Strategies

- One-Computer Classroom
  - Use the computer for classroom presentations and demonstrations
  - Introduce new concepts
  - Students use to present assignments, projects, and research activities to the entire class
  - Maintain class records, create presentations and projects, do research, and communicate with other teachers

Integration Strategies

- One-Computer Classroom
  - Internet access
  - Educational application software
  - Enhance lectures and presentations
  - Use the computer as a teaching assistant
  - Foster group and cooperative learning
  - Write an ongoing story
  - Create a class blog
  - Start a class newsletter

Integration Strategies

- One-Computer Classroom
  - Maintain a student database
  - Teacher productivity tool
  - Optimize computer lab time
  - New emerging technologies

Integration Strategies

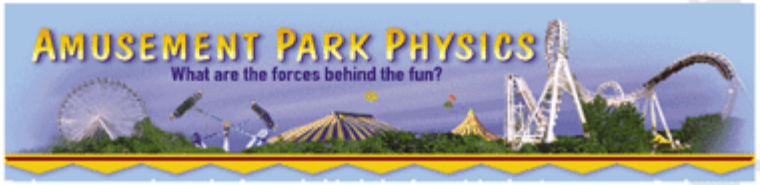
- Multicomputer Classroom
  - Multiple learning centers
  - Integrate other technologies
  - Miss Julie Davis' classroom
    - Digital camera
    - Web research centers
    - Develop presentations
    - Microsoft Publisher

Integration Strategies

- Computer Labs
  - All students have hands-on experience
  - Often used to teach technology skills or subject-specific skills
  - Integrate computer-related skills into subject-directed curriculum areas
  - Example: Web scavenger hunt

Exercise

Roller Coaster Scavenger Hunt



www.learner.org/exhibits/parkphysics

1. Do roller coasters have engines? _____
2. What drives a roller coaster? _____
3. What is the difference between running wheels and friction wheels? _____

_____

4. How do roller coasters stop? _____
5. What is centripetal force? _____
6. What is gravitational force? _____
7. Name and explain three physics terms that relate to roller coasters. _____

the questions that follow.

8. What hill height did you choose? Why? _____
9. What hill shape did you choose? Why? _____
10. Which exit path did you choose? Why? _____
11. What did you choose for the height of your second hill? Why? _____

_____

12. What type of loop did you add? Why? _____
13. Did your roller coaster design succeed or fail? Why? _____

_____

_____

On the back of this paper, list four additional facts that you learned.

Good Luck!

Teachers Discovering Com

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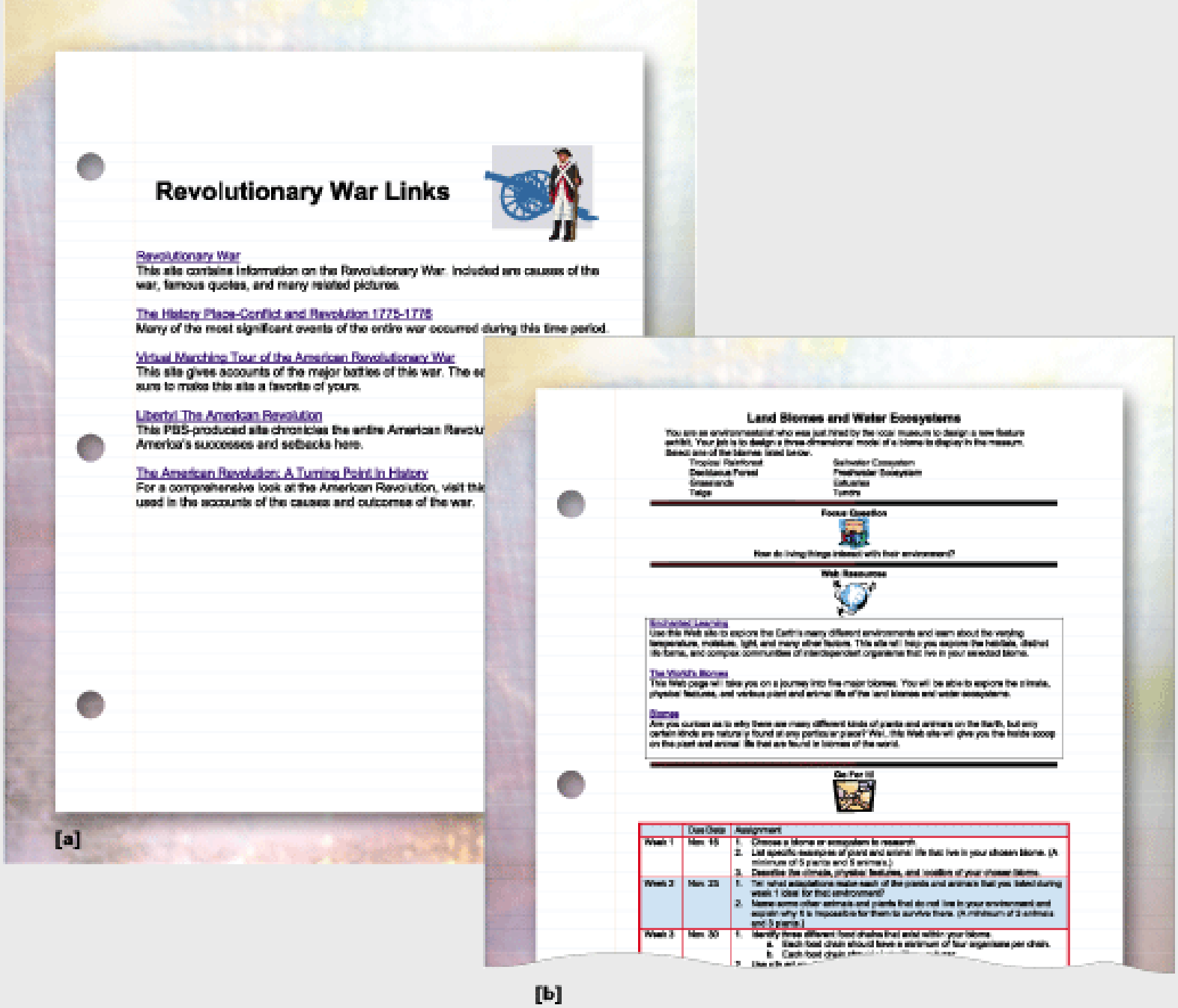
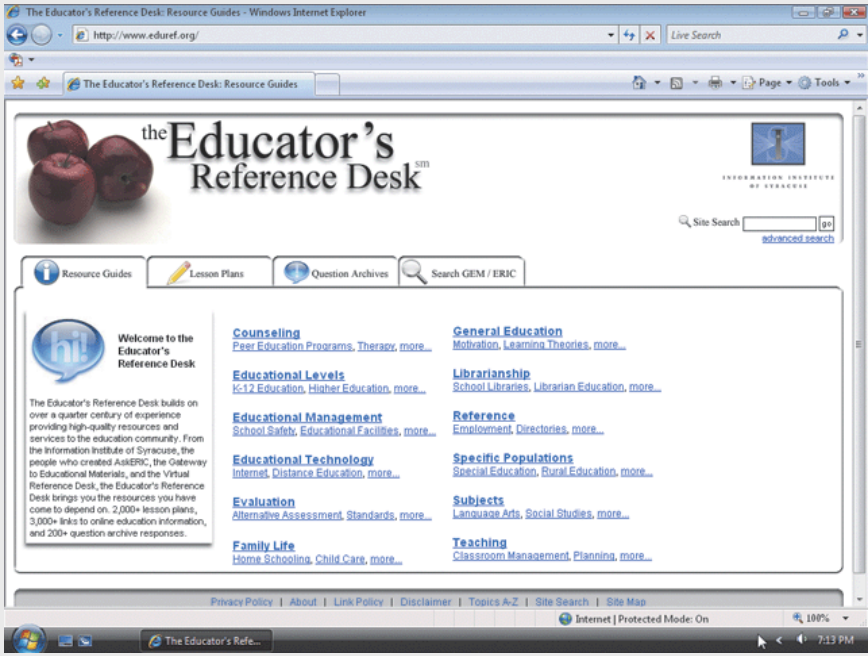
Curriculum Integration Activities

- Curriculum Pages
  - Strategy for implementing the Internet into the classroom
  - Teacher created document that contains hyperlinks to teacher-selected-and-evaluated sites that are content and age appropriate


Revolutionary War Links
Revolutionary War
This site contains information on the Revolutionary War. Included are causes of the war, famous quotes, and many related pictures.
The History Place-Conflict and Revolution 1775-1778
Many of the most significant events of the entire war occurred during this time period.
Virtual Marching Tour of the American Revolutionary War
This site gives accounts of the major battles of this war. The
sure to make this site a favorite of yours.
Liberty! The American Revolution
This PBS-produced site chronicles the entire American Revolu
America's successes and setbacks here.
The American Revolution: A Turning Point in History
For a comprehensive look at the American Revolution, visit th
used in the accounts of the causes and outcomes of the war.
[a]
Land Biomes and Water Ecosystems
Focus Question
Web Resources
Assignment
[b]

Curriculum Integration Activities

- Creating Lesson and Project Plans
  - Must integrate technology into lesson plans and activities
  - Educator's Reference Desk
  - Lesson plans and activities can be found on the Web



Curriculum Integration Activities

- Creating Lesson Plans
  - Language arts integration
    - Reading, writing, listening, viewing, speaking, and literature
    - *Extra! Extra! Know All About It.*

Curriculum Integration Activities

- Creating Lesson Plans
  - Social studies integration
    - History, geography, civics, and economics
    - *What Wonderful Webs We Weave*

Curriculum Integration Activities

- Creating Lesson Plans
  - Mathematics integration
    - Basic number concepts, measurements, geometry, algebra, calculus, and data analysis
    - *The Business of Professional Sports*

Curriculum Integration Activities

- Creating Lesson Plans
  - Science integration
    - Physical sciences, earth and space sciences, and life sciences
    - *Let's Think as a Scientist*

Curriculum Integration Activities

- Creating Lesson Plans
  - Physical education and health integration
    - Basic health and physical education literacy
    - *Eating Healthy!*

Curriculum Integration Activities

- Creating Lesson Plans
  - Arts integration
    - Visual and performing arts including drawing, painting, dance, music, and theater
    - *The Theory of Color*

Curriculum Integration Activities

- Creating Lesson Plans
  - Exceptional education integration
    - All curriculum areas with adaptations made for students with special characteristics or special needs
    - *Rain Forests Are in Trouble*

Curriculum Integration Activities

- Creating Lesson Plans
  - Interdisciplinary Integration
    - Includes two or more academic disciplines or curriculum areas to form a cross-discipline or subject-integrated lesson
    - *Natural Disasters Occur Everywhere*

Finding Funds to Support Classroom Technology Integration

- Many school districts do not have sufficient funding for technology
- If school cannot provide funds, turn to the public, industry, and the government

Finding Funds to Support Classroom Technology Integration

- Fund-raising Drives and Contests
  - Partner with local businesses
  - Small amounts of money can go a long way
  - Enter contests to win equipment
  - Involve parents and community
    - Showcase students' use of technology
  - Volunteers

Finding Funds to Support Classroom Technology Integration

- Grants
  - Funds provided by a funding source that transfers money, equipment, or services to the grantee
  - Grantee is the teacher, school, or organization
  - Sources: Department of Education, federal sources, foundations, and corporations

Finding Funds to Support Classroom Technology Integration

- Grants
  - Request for proposal (RFP)
  - Grant proposal
  - Look for opportunities on the Web

Chapter Summary

- Identify sources of information for evaluating educational technology and digital media
- Outline the considerations and tools used to evaluate software applications
- Describe and explain the key criteria used to evaluate Web resources
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Chapter 7 Complete

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