

Lessons from the Bay
Part 5: Tool Kit

Videotaping a Project

Goals

- To explain the role of video as a recordkeeping device
- To document the class's investigation of the schoolyard
- To portray how the project affects the watershed

Materials

- Pen
- Group planning sheet
- Labels
- Videotapes
- Video camera

Directions

The class, or a small group of students, should decide what they want to get as a result of the videotaping process. They should assist the camera operator by developing a plan that addresses the following:

Deciding what to document

Taping a lesson is a complex process. What kinds of things should be captured in the videotape? To answer this question, imagine being the observer. You walk into the classroom (whether it is inside or outside) to see what is going on. What do you look at? The camera operator cannot look at everything; he or she must make decisions from moment to moment about what to include and what to leave out. When taping a live lesson, the camera operator must focus attention on three things: the teacher, the students, and the tasks. These are the three things that may be documented on tape. (See "Behind the Scenes Plan" worksheet, below.)

Taping the teacher.

During the lesson, teachers are involved in many activities. For example, they explain concepts and procedures, pose problems, assign tasks, ask questions, write information on the chalkboard, demonstrate actions, orient students to

environmental features, point out safety hazards, walk around among students, and assist individual children. It is important to document the teacher's activities carefully and thoroughly during the lesson. The camera operator must make sure what the teacher is doing, saying, and presenting to the class is captured on video.

Taping students.

It is important to capture the students' participation—what they are doing and saying during the whole-class interaction, what they are working on in groups, and what they are doing on their own. The camera should focus mainly on the activities and behaviors of the students who are interacting with the teacher or other supervising adults, but it should turn to other students as well from time to time because students might be doing different things when the teacher is not with them. Of course, one person cannot document everything that every student says and does. The goal is to record student and teacher interaction throughout the lesson, unit, or project.

Focusing on tasks.

- During lessons, teachers assign various tasks to students. During the tasks, the camera may need to be moved several times to achieve the desired shots. A specific group of students may be recorded performing an experiment or specific groups may be recorded based on their ability to perform specific tasks.
- A clear view of the tasks is essential. Avoid having students sitting directly in front of the camera, because they may block the lens. If the camera operator finds a good position but a student is in the way, he or she should consider asking the student to move.

Taping outdoors and indoors

Outdoor settings.

- Because the purpose is to record the teacher and/or student actions as they perform their tasks, shifting the camera's position may be especially necessary in an outdoor setting.

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- In addition, the outdoor camera operator may need to incorporate some footage of the site itself, by panning the whole area as well as taking close-ups of litter, plants, animals, or other details.
- “Before and after” shots may serve to emphasize the effect the project has had on the environment.

The indoor classroom.

- Placing the camera along the side of the room, 1/3- to 1/2-way back, works best in most classrooms. This position allows good views of the board in medium and close-up shots, as well as good shots of the teacher and students’ faces in a wide shot. This position also allows for quick panning to the front and rear of the room, as well as an ideal view of the opposite side of the room especially if there is an additional chalkboard or map in that location.
- The camera operator should take into account the audiovisual materials that will be used (overhead projectors, slides, digital images, multimedia presentations), so that the camera will be positioned at the vantage point that best captures the presenter.

Behind the Scenes Plan

Project Name _____ Class _____

Questions: Brainstorm the answers to the following questions.

	Handheld (Independent work, teacher's movement around classroom, student's work, close-up shot of teacher and student interaction)	Tripod (Whole-class work, independent work less than 2–3 minutes, teacher during presentation, interview close-ups)
<p>Teacher</p> <p>What should be recorded?</p> <p>What should not be recorded?</p>		
<p>Students</p> <p>What should be recorded?</p> <p>What should not be recorded?</p>		
<p>Tasks</p> <p>What should be recorded?</p> <p>What should not be recorded?</p>		

Resources for Using Videotaping in Environmental Projects

How to Videotape like a Professional.

http://www.allsands.com/HowTo/videotapingcame_p_gn.htm>. *Written for parents, this guide can be helpful to teachers and inexperienced camera operators who may be involved in videotaping students involved in an environmental project.*

A Poetic Tour of Pittsburgh's Environment. Oliver High School, Pittsburgh, PA.

http://www.chatham.edu/PTI/Pgh_Env_History/Tolliver_01.htm>. *This eight-week unit, designed for a ninth grade gifted English class, can easily be adapted to any grade and ability level. As part of the project students videotape pertinent locations in their own neighborhoods that speak to environmental concerns. Students also interview family members and friends about facts and details from Pittsburgh history. After videotaping their experiences, students will select specific scenes or subjects to photograph and write about in poems. All student work will be combined into a documentary. A culminating activity is the presentation of the environmental video to a selected audience of students, staff, and parents.*

PPT: How to Videotape a PowerPoint

Presentation. <http://support.microsoft.com/default.aspx?scid=KB;en-us;q167090>>. *Teachers may wish to incorporate all or part of a classroom presentation software show into the project video to give background, outline steps, or list students' accomplishments. This article from Microsoft Product Support Services' "Knowledge Base" gives technical details about videotaping a PowerPoint show.*

Keeping a Journal

Journal writing is a learning tool based on the idea that students write to learn. Students who use journals are actively engaged in their own learning and have the opportunity to clarify and reflect upon their thinking. When students write in journals, they can describe ideas and feelings, special words and expressions they have heard, interesting things that have happened to them, or information about interesting people. Journal writing offers students opportunities to write without the fear often associated with grading. Every journal entry is individualized. Students should feel that a journal is like a good friend who is never too busy to listen.

Goals

- To explain the role of the journal as a recordkeeping device
- To have students write about topics of personal interest, to note their observations, to imagine, to wonder, and to connect new information with things they already know
- To encourage students to view their journals as an ongoing source of ideas for school-related and personal writing

Materials

- Pen/pencil
- Loose-leaf notebooks, spiral binders, and/or computer disks

Directions

Considerations for journal use

Journals can be used throughout the day, at different times of the day, and for different purposes. Teachers may wish to consider the following process as they prepare their students for journal writing:

- *Decide what type of journal best suits the purpose in your classroom.* Think about the purpose(s) of the journal and how the students will use it.
- *Prepare materials.* Student journals can be kept in loose-leaf notebooks, in spiral binders, or on computer disks. The format of the journal must allow the student to bring the journal to and from school. If the journals will be used as a student reference for test taking, computer disks may be impractical.
- *Model initial entries.* Using an overhead projector or classroom chart, work together to write a sample entry. The students can copy the class entry into their own journals or write one of their own.
- *Schedule time for regular journal use.* Students are all engaged in the act of writing

and this enables individuals to generate ideas, observations, and emotions.

Challenges

One of the biggest challenges with writing journals is that some students use them simply as a way to record the day's events. They slip into the routine of writing diary entries without reflection or real purpose. This may be reduced by encouraging students to write about a variety of topics, then take what they feel are the better entries and develop them into finished pieces. Another way to overcome the problem is to use a split page method: one column for a record of the day's events and the other for personal reflection, questions, or elaboration. In this way the expectation for higher-level thinking is established. Modeling some journal entries helps students understand what is expected of them.

A second concern of some teachers is whether their students are too young to begin journal writing. Students should begin developing science journaling and writing skills early. They can develop their organizational skills, their questioning skills, and their writing skills through journaling. Teachers can move toward inquiry teaching and learning scenarios as they see the questions their students write in their journals.

Classroom strategies

Standard features of the journal may emerge and could then be consistent with each unit studied. The scientific method should offer a basis for consistency. Teachers may wish to vary the approach of writing in the journal with some of the units studied. Students may grow in their writing and organization skills as they try new approaches. Teachers may wish to

- have students include drawings and diagrams
- encourage students to write questions about process or outcomes of explorations. (Brainstorm with them how to develop and identify good questions. Take time to share the questions and decide if some of their questions

should be explored together further. Encourage students to investigate some of their questions independently.)

- have students add graphs or data charts as they collect data
- as an interdisciplinary correlation, suggest the lab report be written as a letter
- suggest that students may enjoy writing a dream report. (In their dream, they should devise a plan to solve a problem.)
- have students rewrite a group or independent interdisciplinary project lab report in the form of a newspaper or magazine article written to the layman.

Evaluation and assessment

While student work does not necessarily need to be graded for correctness, each student should receive feedback on the writings. The journal can be used as a reference file to help the teacher monitor individual development and progress. The teacher should not evaluate individual entries as finished products. Instead, teachers should offer suggestions, constructive remarks, questions, and encouragement whenever possible. Often students will respond to the teacher's comments.

Only finished pieces should be used for grading. The evaluation of journals should emphasize the content. While each journal is unique, good journals share the following characteristics:

- personal observations
- questions
- speculations and predictions
- evidence of developing self-awareness
- connections between personal experience and new information

Resources for Environmental Journal Writing

ABQ journal: Draw on Nature for Outdoors Journaling. Albuquerque Journal.
<<http://www.abqjournal.com/paperboy/link/go/389764go07-19-01.htm>>.

Dean, Bruce Robert. *Electronic Field Guide for Your School Yard.*
<<http://world.std.com/~brd/fg.gt.html>>.
(Published also in *Green Teacher: Education for Planet Earth*. Transforming School Grounds. Issue 47 April – May, 1996.)

“Diamonds in the Rough.” *Missouri Conservationist Online.*
<<http://www.conservation.state.mo.us/conmag/1997/07/3.html>>.

Field Sketching. GeoExplorer - Geography Portal Web Forum.
<http://www.geoexplorer.co.uk/sections/skills/field_sketching.htm>.

Helpful Hints for Field Sketching. American Museum of Natural History.
<http://www.amnh.org/learn/biodiversity_counts/read_select/ht/sketching.htm>.

Nature/Awareness Journaling - Ideas and Topics. Jack Mountain Bushcraft and Guide Service.
<<http://www.jackmountainbushcraft.com/njournal.html>>.

Nature Journaling Bibliography. California Academy of Sciences Library.
<<http://www.calacademy.org/research/library/biodiv/biblio/natjour.htm>>.

Using Maps

A map may show a small area like a neighborhood or a large area like a continent. A map can also record many types of information about people, places, and things.

- Physical maps *show natural features such as mountains, rivers, oceans, and islands.*
- Cultural maps *include people-made features such as political boundaries, highways, towns, dams, and oil wells. Map makers, or cartographers, will often use symbols to stand for different features on a map.*

Goals

- To explain the importance of map use to watershed projects
- To locate maps related to a project
- To read maps to locate places and features
- To measure distances using a map
- Try a large university's library. Many universities have extensive map collections. Be sure to speak with the map librarian to help locate the map.
- The Virginia Department of Mines, Minerals, and Energy provides some maps online as well as maps that may be purchased. (See "Resources for Teaching Maps," below.)
- State highway welcome centers and visitor centers in cities and towns often distribute free maps of the area.
- Book stores can also order a wide variety of maps from different publishers.

Materials

- Internet-accessible computer(s)
- Current atlas of Virginia
- Map or atlas of locality or other relevant areas
- Ruler
- String
- Paper
- Pencil

Directions

*Because of the importance of geology and geography to watershed mapping, the teacher may wish to read **About the Watershed: Instructional Framework**, especially parts II and IV.*

Finding a Map

There are far more maps available in paper than online. If an online map is not available, it is a good idea to look for a paper map as an alternative. Teachers may wish to consider the following:

- Start with an atlas. An atlas is a book of maps and may contain other related information. Visit the school or local public library to examine atlases and other tools in their map collection.
- Browse the school media center or library shelves. Books about a place will often include maps of that place.
- The school media center or local library might be able to obtain a particular map from another library through Inter-Library Loan. Ask a reference librarian.

Reading a map

To be able to use maps, it is essential to know how to read them. The language of a map is really quite simple. A good map will include instructions. Some tips about map reading are listed below:

- Following is a list of map terms and explanations. Students should become familiar with common map features by finding these parts of a map:

Map title. This heading indicates what the map has to offer.

Map symbols. These representations may stand for people-made features (such as a triangle for a rest area or a circled "H" for a hospital). Often the symbols will look like what they represent (such as the outline of an airplane to show where the airport is located, a tipi for a First American reservation, or a mortarboard cap for a college or university). Colors, lettering, and lines are other common map symbols. Natural features are sometimes indicated by color. For example, water is typically represented using the color blue, and green sometimes indicates a protected forest or a scenic stretch of road.

Map key (or map legend). The meanings for the symbols are usually shown in a box

called the *map key*, or *map legend*. The symbols and other information in the key may help in understanding the map. Since not all map symbols are the same, it is important to check the key on each map.

Distance scale. This scale can be used to measure the distance between two points.

Compass rose. This drawing shows N, S, E, W. The four main directions (north, south, east, and west) are called cardinal directions.

- One of the most basic uses of maps is to help one find specific places. All location is relative. All directions begin with a starting point. Everything else is described as being a certain distance and direction from that point. Teachers might have students find the location of the school on the map and determine the distance from the school to the place where the watershed drains (for example, the Chesapeake Bay).
- To find the distance between two cities on a map with a graphic scale, students may mark the distance between the two on a piece of paper or a ruler, then place the paper or the ruler along the graphic scale and read the distance. To measure distance along waterways or other curved places, students may use a piece of string to follow the contour of the waterway. They would measure the length of the string and compare it to the scale to determine the distance. Students may enjoy determining the distance a drop of water would travel to get from the school to where the watershed drains.

Surf Your Watershed. U.S. Environmental Protection Agency. <<http://www.epa.gov/surf2/>>. Surf Your Watershed is a service of the U.S. EPA to help site visitors locate, use, and share environmental information about their state and watershed.

Virginia Department of Mines, Minerals, and Energy. <http://www.mme.state.va.us/DMR/DOCS/MapPub/map_pub.html>. This state agency offers maps online as well as maps that may be purchased.

Traffic and Travel: 2002-2004 Virginia Official State Transportation Map. Virginia Department of Transportation. <<http://www.virginiadot.org/comtravel/maps-state.asp>>. From this site, visitors can print a full state map, as well as zoom in and print a map of smaller sectors of the state or metropolitan areas.

Virginia Places. <<http://www.virginiaplaces.org/>>. Virginia Places is a Web site of maps and other geographical information related to the commonwealth, including the Chesapeake Bay watershed.

Resources for Teaching Maps

Geostat: Geospatial and Statistical Data Center. Univ. of Virginia Library, Charlottesville, VA. <<http://fisher.lib.virginia.edu/tiger/1994/browse2.html>>. This section of the Geostat site allows visitors to map Virginia counties using 1994 Version TIGER Data. Students may select the types of detail they wish to appear on their map (e.g., primary or secondary roads, rivers, train stations, schools, and many other features). Another section of the Geostat site, at <http://fisher.lib.virginia.edu/genmaps/natmaps.html> features the National Digital Map Library, which allows map generation at the state level, with the option of choosing state boundaries, county boundaries, major cities, hydrography, or national parks and forests.

Mapping the Schoolyard

A good way to teach mapping skills is to have students draw a map of their schoolyard. The map(s) that they draw may become a useful starting tool in a local watershed project.

Goals

- To explain the importance of map use to watershed projects
- To draw the major features of the schoolyard and describe observations of the schoolyard

Materials

- Paper
- Markers
- Pencils
- Compass
- Clipboards

Directions

To lead students in mapping the schoolyard, the teacher may wish to follow the steps below:

1. For safety purposes, walk schoolyard before lesson and scout for possible hazards.
2. Gather necessary materials. Organize students in a circle and explain that they are going to create maps of the schoolyard. Ask students to determine the types of things they should be including on their maps, such as
 - major plant areas (trees, lawn, shrubs)
 - terrain (hills, creeks, ponds)
 - structures (buildings, fences, gates, parking lots, drains).
3. Sketch your own map of the schoolyard including structures, terrain, plants, and signs of habitats. Include a map title, map symbols, distance scale, compass rose.
4. Ask the students to imagine that they are flying over their schoolyard when they are making their maps. This is called a *map view*. Review safety with students and ask them to identify some safety issues.
5. Split the class into groups of two. Have students work together to draw a map that represents all of the elements outlined in step 2.
6. Conclude the project by having students share their maps. They can explain some of the major features they found as they explored. Do

students have any questions about what is around their schoolyard? Do they notice anything about where certain plants are located? Leading students may help them to make connections about plant habitats, including

- willows next to the creek
- oak trees on the hill
- lawn around the buildings.

Resources for Mapping Local Terrain

U.S. Community Atlas. ESRI (founded as Environmental Systems Research Institute in 1969). <<http://www.esri.com/industries/k-12/atlas/index.html>>. *Community Atlas is a project in which “teachers and students across the country define the nature of their community and post descriptions and maps about it.” This site contains ideas about student mapping as well as model projects that could serve as inspiration for an extended activity for a class or school.*

Wildlife Mapping in Virginia. Virginia Department of Game and Inland Fisheries. <<http://www.dgif.state.va.us/wildlifemapping/>>. *The program provides an opportunity for students and volunteers to perform field studies that contribute to the state’s biological databases.*

Using the Library Media Center for Project Research

Students should learn basic skills for using a library, giving credit for resources they use, and obeying copyright law. They should understand that basic library skills are tools that can be used in school media centers, public libraries, and college or university libraries.

Goals

- To find answers to questions by using the school media center or local library
- To learn the basics of copyright law

Materials

- Paper
 - Pencil
 - Borrower's card
 - Photocopier, and payment, if necessary (optional)
-

Directions

Searching for printed information

Once the students have brainstormed ideas and settled on one or more large questions to investigate, they may profit from a visit to the school media center or local library. Students may need a step-by-step review of how to use the resources there. Enlist the media center specialist or librarian for guidance in teaching students to do library research. When students are ready to begin research, the teacher may wish to have them follow the procedure below:

- List on paper the main words that describe or have something to do with the question or topic.
- Look up the selected words in the catalog (searching by subject and/or keyword) to discover which books may contain useful information and where to find them in the center. Write down the call numbers of the books that might be useful.
- Look on each end of the stack to find the call numbers for books contained on that stack. Each book has a call number on its spine.
- Also check other books nearby in the stacks that are about the same or similar subjects, and read the table of contents and index of these books to decide if they are useful or not. If the research question is simple and you find a specific answer, just write down the answer. If your answer requires more complex material,

then photocopy the needed information or check out the book that has the information.

- Use the *Reader's Guide to Periodical Literature* or other magazine indexes or online databases to find magazine article titles. The media specialist or librarian can help with the indexes and with finding the actual magazine articles. Read your chosen articles in the library and take notes, or photocopy the article. Media centers and libraries often do not lend magazines or journals. There may be a fee for copying. Taking notes is sometimes a better choice because it saves time, money, and paper.

Giving credit for borrowed resources

Students should learn early that authors of borrowed information from books or other resources must be given proper credit through documentation, such as footnotes and bibliographies. Students may not need to develop sophisticated documentation skills at this point, but they should learn to copy down basic information such as the following and include it in their journal, report, or other writing in which they refer to the borrowed information:

- author of printed book or source of Web site
- title of book, magazine, newspaper, or Web site
- date of publication of book
- title, date, and pages of magazine or newspaper article
- URL of Web site

Learning about copyright

Because students may be using information and graphics that they locate in printed materials or on the Internet, they need to learn about U.S. copyright law. The media center or library is an ideal setting for this instruction.

- Have students look through books, magazines, and Web sites to locate the copyright symbol.
- Have them think of instances when they may need to know whether material is copyrighted.

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- Have students examine ways to use copyrighted materials (e.g., abiding by “fair use” legal guidelines, writing publishers or authors for permission to use copyrighted information or pictures, summarizing information in their own words and incorporating their own ideas, referring or linking the reader/viewer to copyrighted materials without quoting the text itself).

Resources for Researching an Environmental Project Using a Library or Media Center

The Educator’s Guide to Copyright and Fair Use. <http://www.techlearning.com/db_area/archives/TL/2002/10/copyright.html>. This site provides the basics for educational “fair use” and offers links to other copyright resources.

Internet Public Library. <<http://www.ipl.org>>. Teachers can use this site to teach library research within the classroom. It can serve as a portal for initial student research for their environmental projects.

Metronet. <<http://www.metronet.lib.mn.us/lc/list1.cfm?statex=Virginia>>. This site lists many public and academic libraries in Virginia. Most have catalogs that are searchable online. Some may offer online reference service. Students may enjoy seeing what is available at a nearby public or college library concerning their research questions.

Powerful Partnership: Your School Librarian and You. <<http://www.pen.k12.va.us/VDOE/Technology/powerfulpartnerships.pdf>>. This downloadable brochure describes ways that the school librarian or media specialist can work in partnership with teachers to help students learn in all subject areas. It lists specific resources addressing the Virginia Standards of Learning.

Virginia School Library Web Pages. <<http://www.pen.k12.va.us/VDOE/Technology/cwebpages.pdf>>. Visit this link to access over 50 school library media sites for students and faculty from across Virginia.

Using the World Wide Web for Project Research

As is evident from all the resources listed in this guide, the Internet is an extremely valuable resource for students searching for information about the environment.

Goals

- To use organized search strategies for locating information on the Web
- To evaluate the validity of Web sites as authoritative sources for research
- To locate a wide range of environmental information related to learning about environmental concepts, activities, and projects

Materials

- Internet-accessible computer(s)
- Paper/pencil or word processing software for taking notes

Directions

Developing Web strategies

Although students can find much valuable information through quick keyword searching and surfing from one site's links to others, it is important for students to learn at an early age that organized, efficient searching is an important and useful research skill. Many resources are available to help teachers introduce search skills or fine-tune those skills in students with more advanced search experience. Some teaching possibilities are listed below:

- Review with students the school policies related to Web use.
- Have students research a given topic using a variety of search engines.
- Have students research the same topic using a variety of search strategies, such as searching from a topical directory such as Yahoo, searching an engine like Google by means of Boolean logic, searching from a general Web site such as the Internet Public Library, searching from a subject-specific site like the U.S. Environmental Protection Agency, and other ways.
- Have students compare the results of their various search strategies.
- Have students keep a list of the interesting environmental Web sites that they find in this exercise.

Evaluating Web sites

Students need to learn early that some sites are reputable research resources, but many are not. Environmental projects offer an excellent context for addressing this issue in the classroom or library media center. Many sites offer guidelines for evaluating Web sites. Some other sites can serve as examples of inappropriate research sources.

- Discuss with students some of the clues for identifying sources appropriate for school research (e.g., URL suffixes; the tilde symbol “~”).
- Give students a list of URLs and have them predict whether the sites will be valid for research; then have them visit the sites to check whether their predictions were correct.
- Have students develop a list of the categories of sites that are likely to have reliable information on the environment (government, academic, professional organization or association, museums, libraries).
- Have them follow up by visiting sites in each category and keeping a list of those they will want to revisit as the project develops.

Keeping track of relevant Web sites

Students should learn how to keep a record of the sites they find valuable so that they can return to them easily.

- Have students use bookmarks/favorites to keep an electronic record of useful environmental sites.
- Have students keep written records of useful sites, including the URL, author/sponsor, and a brief annotation for each site. These records could be in a word processing document, in a notebook, or on index cards. The records could be kept by each individual student or by group, based on the needs of their environmental activity or project.

Resources for Using the Web for Environmental Research

75 Ways to Search the Internet. Ontario Institute for Studies in Education, University of Toronto. <<http://www.oise.utoronto.ca/search.html>>. This site distinguishes among search engines, search directories, metasearch sites, search portals, search guides, people finders, and other search tools, giving numerous examples of each.

Bridge. Sea Grant, National Marine Educators Association, and Virginia Institute of Marine Science. <<http://www.marine-ed.org/bridge/>>. Created for teachers, this site contains more than 1000 resources that have been screened for educational usefulness.

ChesSIE: Chesapeake Science on the Internet for Educators. Virginia Institute of Marine Science and Chesapeake Bay Program. <<http://www.bayeducation.net/>>. ChesSIE provides quick access to a collection of the best Bay education resources available online.

Ecology and Environment Resources. Arlington, WA, Public Schools, Learning Central Pioneer. <<http://www.asd.wednet.edu/pioneer/barnard/resources/index.htm>>. A long list of environment-related resources collected here to be used for educational purposes. The teacher may wish to use one or more of these sites in teaching students to research environmental information on the Web.

Environmental Education Directory. Virginia Naturally, Virginia Dept. of Environmental Quality. <<http://www.deq.state.va.us/eed>>. This is an online, searchable directory of environmental education materials, programs, and services in Virginia.

Kids' Search Tools. <<http://www.kidsclick.org/ksearch2.html>>. This search site allows students to click on several different search tools at once for information related to their research topic.

Selection Criteria for Web Sites. American Library Association. <<http://www.ala.org/parentspage/greatsites/criteria.html>>. Created for parents, this site is a useful resource for teachers planning a classroom session on how to evaluate Web sites.

Student Page. Virginia Institute of Marine Science. <<http://www.vims.edu/adv/ed/stu.html>>. Includes links to Web resources for marine projects and reports.

Using the Internet for School Reports—Kids' Page. Boston Public Library. <<http://www.bpl.org/KIDS/Evaluate.htm>>. In question/answer format, this site introduces students to the importance of analyzing and evaluating Web pages before using them as resources in school papers.

Web Searching. Internet Public Library. <<http://www.ipl.org/div/websearching>>. This site offers suggestions for various search strategies and compares the features of the most popular search engines.

Writing Business Letters

During the instructional planning stages, the teacher may wish to read *About the Watershed: Instructional Framework*, especially parts VI and VII.

Goal

- To explain the contributions of business experts to a school project
- To write a letter asking for help with a watershed-related project (The help could be for advice, information, permission, loan of equipment or materials, money, time, talent, or public support of a project.)
- why it is wanted
- what will be done with it
- when it is needed
- how doing what is requested could benefit the person you are writing
- statement that you appreciate any help you might receive
- contact information

Materials

- Business-size envelope
- Paper, 8 1/2 inches x 11 inches
- Pencil or pen and/or computer(s) and printer
- Dictionary
- Postage stamps

Directions

The teacher may wish to invite an office professional or a business or English teacher to talk to the class about business letter content and format. Or students may simply follow the steps below as preparation to write a business letter related to their watershed project:

- Decide and then write down exactly the intended results of the letter. Consider the following questions:
 - *What do I want this person to do for us?*
 - *When do I want him/her to do it?*
 - *Why do I want him/her to do it?*
- Find out the name and address of a person who could provide what is needed. If you have a name, but need an address, try looking in the telephone book. If you know a company or organization's name and address but need the correct person's name, try telephoning their office to ask.
- Look at the sample letter provided (see below).
- Outline the letter supplying the information below:
 - teacher's name and grade of students
 - what is wanted
- Write a clear, short, polite letter in correct business format. It should contain a heading, inside address, greeting, body, and closing. In the body of the letter, include all the information from your outline.
- Proofread the letter for completeness of information, correctness, neatness, and proper format. Check the accuracy of facts. Check for correct spelling, punctuation, and grammar. Check to be sure that the letter is in active voice and that the writing communicates the message clearly. Also check for even margins, paragraph indenting or spacing, and overall neatness of appearance. Make necessary revisions.
- Type the final copy of the letter and print it on 8 1/2 x 11 white paper. Ask someone to double-check spelling, punctuation, grammar, and wording. The finished letter should be no more than one page. Revise if necessary.
- Sign and fold it and any enclosures together neatly into three equal sections. Fold the bottom third up, and then fold the top third over that. Type the name and address on a business size envelope (same as inside address). Type your return address in the upper left. Put the postage stamp on the upper right of the envelope. Seal it and mail it.

The sample letter that follows can serve as a model for students who need an introduction or review for writing a business letter.

Allstars Elementary School
1435 Victory Street
Hometown, VA 12345

February 1, 2003

Ms. Important Person
Assistant to the Director
Super Soccer Stadium Drive
Hometown, VA 12345

Dear Ms. Person:

Our 4th-grade class wants to help our community reduce the large volume of recyclable materials that unnecessarily take up space in our landfills. We want to provide four neat, clean containers for empty aluminum beverage cans at the Super Soccer Stadium. We can arrange to collect the cans, and transport them to the recycling center each Saturday during September 2003. We have enclosed a copy of our project plan.

We would like for you to give your permission for placing these containers inside the soccer stadium and to suggest convenient collection times.

This project could benefit the stadium in several ways. It would reduce your trash disposal burden, and the stadium would become a very visible partner in the popular community recycling program.

Please write to us at the address above by April 1, 2003, to let us know if we may supply the containers to the stadium. If we may, then please inform us of convenient times on Saturdays when we may come to empty the containers. If you have any questions for our teacher, Mr. Ed U. Cation, please contact him at 222-3456.

Thank you for any help you can provide to our class.

Yours truly,

[signature]

Jane Doah, Secretary.
Recycling Project Work Group
Mr. Ed U. Cation's 4th Grade Class

Enclosure

Getting Help from Guest Speakers

Students should learn at an early age that experts can be an invaluable and engaging source of information.

Goals

- To select an interesting speaker who has had experiences that relate to the project
- To invite that person to speak to the group

Materials

- Telephone
- Stationery for thank-you notes
- Scratch paper

Directions

As groups plan projects, they should be identifying the knowledge they will need to carry out their work. The teacher may wish to suggest some possible speakers and have students research them in the context of the activity or project at hand. The teacher may wish to follow procedures such as those listed below:

Select and invite the speaker.

- Consider information about the experiences, knowledge, and speaking skills of each person under consideration. Then shorten the list to your group's first, second, and third choices.
- Choose several acceptable dates for having a guest speaker. Be sure the dates allow plenty of time to prepare.
- Decide who will contact the first-choice speaker to offer the invitation and how to contact the person. If by telephone, see "Making Business Telephone Calls" (p. 63). If by letter, see "Writing Business Letters" (p. 59). E-mail communications should be as carefully prepared as a business letter; however, they do not usually include any addresses at the top, and the sender's contact information is usually included after the typed signature, at the bottom of the e-mail message.
- If your group's first choice of speaker is not available, try your second, then third choice if necessary.
- When a speaker has accepted the invitation, find out how you and this speaker can most easily contact each other between now and the visit. Determine who will keep in touch with the speaker.

Prepare the speaker.

Talk with the speaker and prepare him or her by explaining in detail the context of the classroom visit, characterize the class, and give a brief description of the students' research questions. You may wish to follow the procedure below:

- Discuss with the guest speaker what types of information or experiences would be most helpful for your group. Ask what he or she could share with you.
- Discuss ideas for activities in which all the members of your group could participate. Ask the speaker to bring objects or pictures or give a demonstration, if possible. Find out what kind of space and equipment the group will need to provide.
- Agree on a place, a date, a beginning time, and ending time.
- Tell the speaker about your group. How many students will attend? How old are they? What progress have they already made on the project? What are the next steps? Are there any students with special needs? If so, be prepared to offer the speaker assistance in meeting these needs.
- Confirm plans in writing and give clear directions for the speaker to find the place for the presentation, the place to park, and procedure for finding the classroom.
- A few days before the scheduled visit, call the guest speaker to confirm all the plans. Review the date, time, place, equipment, and activities.

Prepare the students for the speaker.

- Remind the group who their guest speaker is, and explain all the plans.
- Discuss the rules for polite behavior towards guests.
- Prepare nametags to wear so the guest may call students by name. Divide the group into teams if the speaker is planning team activities.

Coordinate the day of the visit.

- Select two or three members of the group to greet the guest and offer help when he or she arrives.

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- Check to see that the room and equipment are ready.
- Introduce the guest speaker to the group. Set a good example by paying close attention. Offer to help if the opportunity arises. Keep your mind open for ideas for follow-up activities or discussion topics.
- Thank the speaker for visiting.

Conduct follow-up activities

- Have students write and send thank-you notes to the guest. The notes might mention what they learned, what they liked most about the presentation, and how they will use what they learned. Drawings or photos are always welcome.
- Decide what follow-up activities to do. There may be an activity from the day of the visit that needs to be completed.
- Share with other people what has been learned. To submit a newspaper article about the presentation, see “Preparing a Press Release” (p. 73).

Making Business Telephone Calls

Goal

- To place a business telephone call to get information, make arrangements, or seek permission

Materials

- Telephone
- Notepad
- Pencil or pen

Directions

To prepare students to make a call, the teacher may wish to consider the procedure outlined below.

- Make sure students have the name and telephone number of the best person to call.
- Go over with them what needs to be said and in what order, including the following:
 - Give the teacher's name and the grade of the students.
 - State purpose of the call (e.g., request for information, invitation to speak, permission).
 - Say why it is wanted.
 - Tell what will be done with it.
 - Say when it is needed.
 - Explain how doing what is requested could benefit the person being called.
 - Emphasize that the group will appreciate any help they might receive.
 - Provide contact information. (Who should the person call or write when he or she has the information requested? Give contact's name, telephone number, address, and e-mail, as appropriate.)
- Have students practice the call by making a simulated call to somebody in the group, in accordance with the following checklist:
 - Be sure you can pronounce the person's name correctly.
 - Use your notes to organize your call. Let the rest of the group listen.
 - After the practice call, talk about what was right about the call and how the call could have been more effective.
- Revise your notes based on the follow-up discussion.
- Rehearse again. Does the call sound more professional now?
- Have a student make the actual call, in accordance with the following checklist:
 - Find a quiet place where there is little or no chance for interruptions.
 - When someone answers, state your name and ask to speak to a specific person. (Usually in an office a receptionist answers the telephone. You might say, "Hello. My name is _____. May I please speak to Ms. _____?" The receptionist may say, "Just a moment, I'll transfer you to Ms. _____.")
 - If the person is not available, ask what would be a better time or number to reach the person. Write the information, then read it back to be sure you have written it correctly.
 - Thank the person answering the phone for their help. The receptionist may ask what the call is in reference to. Be prepared with a brief statement about the nature of the business. If the receptionist asks for a number to call back, be prepared to answer that question.
 - When the call reaches the person, begin by introducing yourself. Use this format: "My name is _____. I am _____ from _____." (For example, "My name is Sally Goodstudent, I am a Girl Scout from troop #100 here in Norfolk, Virginia.")
 - State the reason for the call. Use notes if necessary. Be brief.
 - After the person responds with the information or permission, show your gratitude. "Thank you very much for _____" or, "We really appreciate your help with this information."
 - If the telephone call involves making arrangements for something, follow up with a business letter confirming the details. Send a thank-you letter to anyone who helped. (See "Writing Business

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Letters,” p. 59, for help with letter writing.)

- If the person cannot help, ask if he or she could refer you to someone else who can. Then ask for that person’s name, title, and telephone number. (*“Would you please suggest someone I might call to request this information?”*) Repeat the information back to be sure it is correct. Thank the person for his or her time and suggestion.

Speaking to Promote a Project

Goals

- To learn the importance of promoting a project
- To use public speaking to inform people about a cause or convince them to take an action

Materials

- Notecards
- Audiovisuals, such as very large pictures, models, video or sound recordings, PowerPoint presentations, computer with projection screen (to show Web sites, digital photographs, charts, graphs, or other visuals)

Directions

Two thoughts may be in the students' way before they begin to plan a speech. One is "I can't do this." The other is "I can do this without thinking or planning." They can speak publicly and do it well, but only through careful thinking, planning, and practice. Teachers may wish to help students follow the steps listed below:

Prepare the speech.

- *Develop a clear and specific purpose for the presentation.* What exactly is wanted from the audience after the speech? If the intention is for the audience to know and use some information, the speaker must know it and know how and why to use it. If the purpose is to convince the audience to do something, the speaker must know exactly what that is. Having a clear purpose in mind helps to leave out unnecessary ideas that could distract from the main point and make the speech too long. Speeches should be shorter than 20 minutes. Five or 10 minutes is plenty for many topics.
- *Learn about the subject.* Use information-gathering skills to add to what you already know about the subject. Beginning with the media center and computer resources, and then, if necessary, consulting experts, attempt to gather more information than is needed for the speech. That extra knowledge will provide added confidence and may help you to answer questions afterwards.
- *Find out about the audience.* What are their interests? How old are they? How much do they already know?
- *Organize the presentation into an outline.* The three main speech parts are *introduction*, *body*,

and *summary*. Write on note cards the important points to make in each of these three parts. The body of the speech will probably require the most note cards.

- *Tell the purpose of the speech in the introduction.* A speaker can connect with the audience by sharing something personal with them. You might relate a brief story that illustrates how you became interested in the topic.
- *Use the body of the speech to instruct, persuade, or inspire.* To persuade the audience, try appealing to wishes you believe they already have. For example, they may wish to help homeless animals, to preserve scenic areas, or to gain acceptance and respect from their community. Explain how participation in your project will help them achieve their goals. In the body you might use visual aids or sound effects to help explain some of your points.
- *Give the audience a sign that the summary is beginning.* A speaker might say, "In summary I'd like to remind you to..." If the goal of the speech was to persuade or inspire, the speaker might say, "I'd like to leave you with this one final thought," repeating, once again, the main point.
- *In the summary restate briefly each of the main points.* Was the speech intended to tell how to provide plants that will feed and shelter migrating birds? Then the speaker should repeat concisely the steps for the audience to follow. "Select appropriate plants, location, and planting season; prepare topsoil; then plant bushes and trees; water and fertilize responsibly."

Practice the speech.

- Practice in front of a friendly audience.
- Memorizing exact words is not necessary, as long as you remember main points. Some people like to memorize just their opening and closing sentence, so they know that they can begin and end confidently and crisply.
- Speak clearly and a little more slowly than in conversations.

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- Check on the meaning and pronunciation of unfamiliar terms.
- Check the timing to see if content needs to be adjusted.

Go live with the speech.

- Wear clothes that are comfortable, neat, and make you feel you look your best.
- Find several people who have friendly expressions on their faces. Look at them frequently, and look at others in the audience too.
- Be enthusiastic and show it.
- Look at note cards if you need to, but do not read the whole speech.
- Make your presentation with confidence.

Writing Publications to Promote a Project

Goal

- To learn the influence a written publication can have in promoting a project
- To produce an article, brochure, or information sheet that communicates a message clearly

Materials

- Plain white paper
- Computer
- Black ink marker or pen for hand-drawn illustrations

Directions

The teacher may wish to have students follow the procedures below:

Compose the article, brochure, or information sheet.

- Consider the audience you are trying to reach, including age, knowledge of the subject, and attitude toward the subject.
- Use an outline to plan your ideas.
- Verify your information. Are all the facts correct?
- Write a message that is complete, short, and clear. The less the audience has to read, the more likely they will read and remember all.
- Include contact information.
- Have your writing checked by someone else for proper spelling, grammar, and punctuation. (An English or journalism teacher should be able to give pointers on clear, well-organized writing.)
- Illustrate your publication. (See “Preparing Graphs and Charts,” p. 69, and “Choosing and Using Clip Art,” p. 71.)

Copy and distribute the publication.

Select a means for copying.

- Preparing the message for publication depends on resources available. The two ways people usually reproduce pages are photocopying and printing. Most schools and offices have photocopy machines. They are a good choice for making a few copies, and sometimes a few photocopies can be made for free. Another possibility is that publications created on a

computer may simply be printed in multiple copies.

- If you need many copies of the publication, take your material to a professional printer. It can be easy and fast and is not necessarily expensive.

Prepare the publication for printing.

- Decide exactly what is to be printed. Determine how many pages there will be.
- Use good quality originals. No matter how the material is to be reproduced, it is important to start with clear, clean originals, including any graphics. The printer can provide information about preparing pages for printing. Usually the printer suggests using plain white paper and black ink. The printer can then print your publication on colored paper and use colored ink if you prefer. Originals may be prepared on a computer, neatly written by hand, or typed. Black-and-white drawings (hand-drawn or computer-generated) can help to explain the message and make the publication look good. If an image is too large for the space on the page, a photocopy machine or the printer can make it smaller. Photographs generally do not photocopy well—especially color photographs—and they can be expensive to reproduce on a printing press.
- Talk to the printer. The printer does not need to know about the subject of the publication, but does need to know
 - how many pages are in the publication
 - if there will be photographs, and if they will be color or black and white
 - if there will be a cover
 - whether to fold, staple, or bind the publication
 - if the publication should be printed on front and back
 - if recycled paper should be used
 - what color(s) of paper to use
 - what color(s) of ink to use
 - how many copies to make.

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With this information, the printer should be able to provide an estimate of costs and, if necessary, suggest ways to reduce costs. The printer will probably be glad to answer questions. He or she may even explain to the group how the printing process works, if asked.

Preparing Graphs and Charts

Goals

- To select a type of graph or chart that strongly supports the project
- To prepare the graph or chart

Materials

- Math and science books
- For bar or line graph: graph paper, pencil, pen, eraser, ruler, or computer
- Additional materials for pictograph: construction paper, photographs, drawings, magazine pictures, glue, scissors
- For pie chart: compass, protractor, paper, pencil, and pen

Directions

Understanding graphs and charts

The teacher will want to introduce the purposes and types of graphs and charts. A graph sends a powerful visual message. There are many kinds of graphs, including pictographs, bar graphs, line graphs, and pie charts.

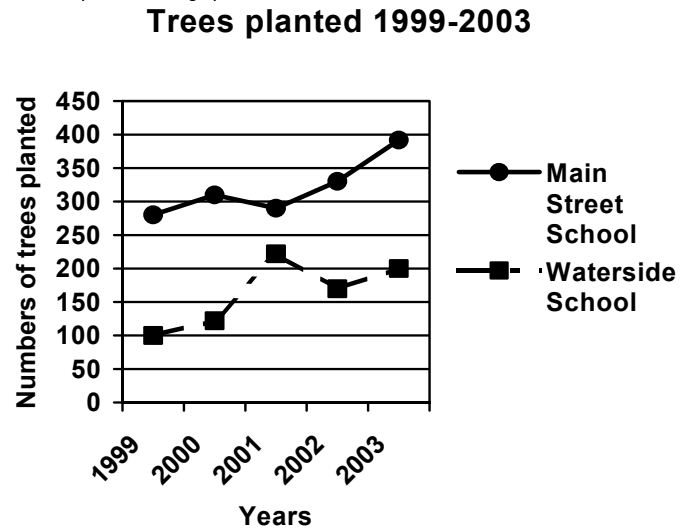
- Talk with students about the features and purposes of each type of graph/chart.
- Show examples, and have the students tell what each communicates to the reader.
- Discuss what is appealing about pictographs, about bar graphs, about line graphs, and about pie charts.
- Explain the rules that apply to all graphs and charts:
 - Always include a title that clearly states what the graph illustrates.
 - Label the graph or chart so what is represented by each axis or segment is clear.
 - State on the graph what real measurement each vertical and each horizontal unit represents.
- Have students draw each type of graph/chart. Depending on the grade level and experience of the class, students may be able to create graphs or charts using computer software.

Selecting which type of graph or chart to use

Line graphs.

- Some messages are shown more clearly with one kind of graph than with others. To show change over time, one might choose to use a line graph. The sample line graph shows a change each year in the number of trees planted by two schools between 1999 and 2003. A bar graph could also show this increase, but a line graph may show this change over time more clearly.
- Graphs sometimes make us think about information in new ways. Imagine a line graph showing two different changes during the same period and in the same place. We wonder if one change might have caused the other.

Example of a line graph:



Bar graphs and pictographs.

- Bar graphs and pictographs can be effective to show how one measured value (or number fact) compares to another. For example, the purpose might be to show the number of trees the fourth grade planted on Arbor Day in 2002 and 2003 and how that value compares with the number of trees students from other grades planted.
- On the bar graph, the tallest bar represents the most trees. In the sample bar graph, the reader can tell which grade planted the most trees in

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both 2002 and 2003. The label under the tallest bar shows it.

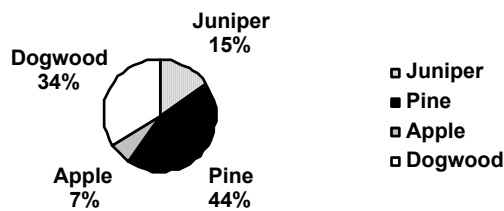
- On a pictograph for the same data, instead of drawing different sized bars, students might draw different sized trees. They could even cut pieces of green construction paper, or magazine pictures, or photos, then glue them to form a collage illustration of different sized trees. The tallest tree picture, of course, would represent the most trees planted. The label under the tallest tree would tell which grade planted the most trees.

Pie charts.

- A pie chart type graph illustrates parts of a whole. A pie chart might describe kinds of trees planted. It could show what part (fraction or percent) of all the trees were pines, apple trees, dogwoods, and junipers.
- When planning the budget for a project, a pie chart could be helpful to show what part of project money would be used for each expense. Also, a class could make a pie chart to show the plan for budgeting time.
- Students can look in mathematics books and ask mathematics teachers for guidance if they have questions about how to make graphs.

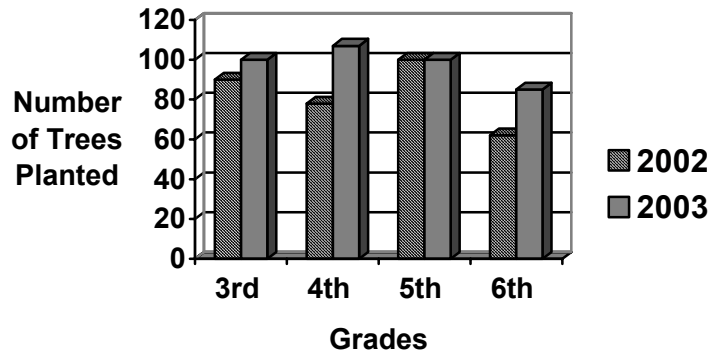
Example of a pie chart:

Kinds of Trees Planted in 2003



Example of a bar graph:

Grades 3-6 Trees Planted '02-'03



Choosing and Using Clip Art

Students may like to use electronic art when they design brochures, fliers, graphs, or other items to promote their projects.

Goals

- To locate environment-related clip art on the Web
- To understand the difference between copyrighted and copyright-free clip art
- To incorporate clip art into project publication or other promotional item

Watershed-related Clip Art. U.S. Environmental Protection Agency. <<http://www.epa.gov/owow/watershed/outreach/outpixnonjs.html>>.

Materials

- Internet-accessible computer
- Paper

Directions

- Have students locate and explore clip art sites provided by the teacher.
- Have students use a search engine such as Altavista (<http://www.altavista.com>) to find sites that contain clip art related to their topic.
- Have students explore the copyright status of clip art that they find.
- Have students copy free clip art from the Web and use it in a classroom publication.

Resources for Environment-related Clip Art Available on the Web

Many general clip art sites have nature- and environment-related images. The sites below are more specific to clip art related to watersheds.

Altavista. <<http://www.altavista.com>>. *To locate images through Altavista, click on Advanced Search, then click on Image in the top menu bar. Type in the subject of the image you are seeking, such as “watershed,” then click on Find.*

“Environment & Nature Clip Art.” *Green Nature.* <<http://greennature.com/clipart.php>>. *Samples of animals, birds, marine life, miscellaneous nature, endangered species, and recycling clip art appear on this site.*

Recycling. Texas Cooperative Extension, Texas A&M University. <<http://agpublications.tamu.edu/clipart/clip3/index.html>>. *This site contains clip art related to recycling.*

Preparing a Press Release

Goal

- To write a press release telling people about the project your group is doing or what your project has accomplished

Materials

- Paper
- Pencil
- Computer
- Newspaper
- Photograph (optional)
- Sample press release(s)

Directions

Understanding the purpose and parts of a press release

- A press release is a specially formatted article submitted to a newspaper in the hope that the article will be published in part or in full. A press release has several standard parts:
 - date of submission
 - release date
 - brief heading
 - body of article (answering *who*, *what*, *when*, *where*, and *why* about the news story)
 - contact information
- A press release should be designed as an inverted pyramid, in which the most important facts are presented first in the article, with lesser and lesser important facts added as the press release continues. The purpose of the pyramid format is to allow editors to cut an article from the bottom up in order to fit a space in the newspaper without having to rewrite the article. The teacher may wish to bring sample press releases for the class to analyze in terms of the inverted pyramid.
- Sometimes a press release will be the basis of a news article (which contains facts only) and other times, as a feature article (a human interest story, usually longer than a news article, containing background about participants, anecdotes, quotations, and other interesting aspects to draw in the reader).

Planning a press release

- Before beginning to write the release, have students look at some newspaper articles to locate the *who*, *what*, *where*, *when*, and *why* answers in them.
- Have students select the main or most important points to make. In the brainstorming session, which one or two of the answers made those points? These answers or main points will give the information for the first one or two sentences, completing the first paragraph. The sample press release in the box below answers the *who* and *what* questions first.
- In the remaining paragraphs have students answer the rest of the questions from your brainstorming session, as concisely as possible. Can students find answers to *where*, *when*, and *why* in the sample press release? *In which paragraph are they?*
- In a brainstorming session have students answer and record the following questions about the project:
 - *What is being done?*
 - *Who is doing it?*
 - *Where is it being done?*
 - *When is it being done?*
 - *Why is it being done?*

Writing a press release

Students should follow standard procedures for journalistic writing:

- Use simple, direct language.
- Avoid long sentences.
- Use action verbs, and avoid adjectives.
- Stick to the facts; avoid judgments and opinions, except in direct quotations.
- Use complete words, not abbreviations.
- Check for correct spelling, punctuation, and grammar.
- Ask someone else to read the release to make sure it is clear.
- Revise it if necessary.

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- At the top of the page, type the date of submission and the release date. If the article can be published right away, type “FOR IMMEDIATE RELEASE”; if the information is time-specific, include the date, as in “FOR RELEASE APRIL 15, 2003.”
 - At the top or the bottom, include the name and telephone number (and e-mail, if appropriate) of someone who can answer questions about the project. *Do not provide students’ home telephone numbers or e-mail addresses.*
 - Double-space the article. (This extra space allows the newspaper staff to edit directly on the release.)
 - Consider including a photograph. Sometimes newspapers like to have a picture to go along with a story. The picture should be a clear, black-and-white photograph that illustrates the subject of the story. Label it with one or two sentences telling who is in the picture and what they are doing. Remember that students’ photographs should not be released to the media without written parental permission.
 - When the press release is completed, put it in an envelope large enough so the picture fits without folding.
 - Write “Attention: Managing Editor,” the name of the newspaper, and its address on the envelope.
 - It is a good idea to send copies also to school newspapers and community education newsletters.
 - Remember that newspaper editors seldom use a whole press release exactly as it is written. Sometimes they rewrite it or only use the picture.
- If a newspaper publishes the article, your students deserve congratulations! Be sure to show it to parents and principal.

Sample Press Release

April 9, 2003

For Immediate Release

Contact: Suzie Goodstudent 642-0000
or Ms. Very Goodteacher 692-0000

Page Middle School Students Sponsor “Clean the Creek” Event

Sixth-grade students from Page Middle School in Gloucester County, Virginia, have sponsored a very successful “Clean the Creek” event.

On Saturday, April 9, sixty students, nine teachers, and fourteen parents removed fifty pounds of trash between 9 a.m. and noon. Participants found glass, plastic, iron, and aluminum along twenty-five yards of the south shore of Timberneck Creek next to the county public boat landing.

The students conducted this “Clean the Creek” event as part of coordinated class environmental projects they designed to reduce solid waste pollution in local waterways. They are concerned about valuable Chesapeake Bay animals becoming entangled in debris such as discarded fishing line, plastic six pack rings, nets, and bags. According to the project leader, Ms. Very Goodteacher, “Projects like this help students learn important and useful skills. They also learn faster than in the classroom and have a clearer understanding.”

Some classes will continue their projects by sorting out recyclable materials. Then they will transport them to the county recycling collection area.

Designing a Web Page

Goals

- To publicize a successful student project on the Web
- To attract volunteers for further watershed projects through a student Web page

Web Genies. <<http://www.webgenies.co.uk/indexnoflash.htm>>. This site contains lots of material to help children (age 5 and up) learn to design Web sites. It includes lessons, games, projects, tips, a glossary, resources, and more.

Materials

- Internet-accessible computer(s)
- Web-development software
- Pencil and paper for brainstorming design and content

Web Monkey for Kids. <<http://hotwired.lycos.com/webmonkey/kids/lessons/index.html>>. Through a series of lesson links, this site helps children learn how to design a Web site.

Directions

- Talk with school officials to get permission to post one or more pages on the school's Web site.
- Arrange with school officials to get technical assistance for you and the class.
- Have students brainstorm the content and design of the page.
- Have students view sample sites on the Web.
- Have students prepare text, take or select digital photographs, and gather other content such as clip art.
- Have students view the draft page in a browser to proofread, critique, and revise their work.
- Get school approval to launch the page.
- Go live.
- Publicize the site within the school and through local news media.
- Use the site as a visual aid when making presentations about the project.

Resources for Designing a Class Web Page

Recycling Projects. Mrs. Townsley's Fifth Grade, Wilburn Elementary School, Raleigh, NC. <<http://wilburnes.wcpss.net/townsley/recycle/recycleindex.html>>. After studying why recycling is important, each student completed and documented a recycling project at home. At school they entered their data into a spreadsheet and created a graph. Then the students created Web pages to show what they learned about recycling. This site offers links to the students' Web pages.