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Sailing with Telecommunications



by Terry Crooks

Last year the *Eagle*, a U.S. Coast Guard "tall ship" vessel, went on a training journey. It stopped at various ports in the West Indies, Central and South America along a trek to its final destination in Australia. Updates on its movements and activities were available on the SAILING forum that can be accessed through a telecommunications network. The students had access to information about the *Eagle* as well as to other students and databases through the teacher's Compuserve account. The topic was timely and of interest to students and many related learning experiences were possible. Thus fifth graders were launched into a study that involved many subject areas and included the computer as an integral part of the curriculum. Reading and writing activities pervaded the unit.

Several activities were centered on finding out more about the *Eagle* and the Coast Guard. What is the function of the Coast Guard? What goes on at the base in Grand Haven, Michigan? What is a "tall ship" and why should training take place on such a vessel if they are no longer used? Through telecommunications, the fifth graders learned that schools in Connecticut were conducting a seabag exchange of items of local interest with students in Sydney. They also learned that Australia was celebrating its bicentennial and used this as an opportunity to make comparisons with the U.S. bicentennial that occurred about the time that they were born. To personalize the study, the students adopted a sailor or cadet with

whom they exchanged letters and pictures; each response was eagerly anticipated and excitedly shared. **Mutiny on the Bounty** (Nordoff and Hall, 1932) was a good selection to read aloud to the students because the *Eagle* was following a similar route to Captain Cook's voyage.

Many social studies activities, which included reading and language arts components, were carried out. Log sheets were kept of the weekly updates received by computer and mail. The coordinates of the ship's location were rounded off and plotted on an overhead transparency, individual maps and a large wall map which was followed with interest by the whole school. The journey introduced students to the concept of time zones of the United States and the world as well as to the international date line. The students also had a little contest as to who could predict the date and time the *Eagle* would cross the equator, based on considerations of knots, wind and other factors. Reading of the weekly reports, which were reproduced from the mailed copy, led to discussions of vocabulary, word origins, geography, customs of the people at the ports of call, and cadet studies, training, activities and responsibilities.

A bulletin board was developed around a poster of the *Eagle* and a large map. A series of 2-4 questions or directions on various topics were put on 5x7 cards: types of map projections, ocean currents, special latitude

lines (Cancer, Capricorn, Arctic Circle, Antarctic Circle), equator, international date line crossing ceremonies, compass directions and compass rose. Individuals or pairs of students chose a card, answered the questions, followed directions such as drawing a picture or labeling the large map, and wrote a paragraph or so using their notes. This activity provided an opportunity to teach students how to take and use notes without copying from an encyclopedia. Two more activities on gathering and reporting information were included in the unit, as explained below.

During the Eagle's movements through the West Indies, Central America and South America, map skills were practiced. In addition, each student chose a country in the area and compiled a note sheet of information about its size, location, climate, flora, fauna, natural resources, industry, agricultural products, population, type of government and major cities. This note sheet, along with an overhead projector, was used to guide an oral report.

A meaningful study of the Eagle's final destination, Australia, was carried out. The colonization of Australia was compared to that of the United States and American words and phrases were compared to Australian and British English. Map study skills were of more interest to the students as they located the provinces, landforms and climate areas of Australia. Students used library skills to find information sources other than encyclopedias from which to gather information about an Australian animal. After taking notes about the animal's description, scientific classification, habitat, its young and other items of interest, they planned, organized, revised and edited a written report. When they saw National Geographic videotapes on Australian animals, they were delighted to recognize their own and others' animals and share information about them. Math/graphing activities included making a life-size bar graph of the height of each animal. Individual scaled graphs were also made of the animals as well as of comparisons of the lengths of various famous ships.

The culmination of this phase of the unit was a class-constructed laminated, cloth-taped book on "Australia's Unusual Animals." Each student's animal report and a picture was included. One map and graph chosen from the class was added. The function of a title page and the organization of a table of contents became important as they added these features to their book. Fortunately a word processor was being used because they printed and changed these features several times until they liked how it looked. And they did like the book, as evidenced by the pleasure they took in reading it.

Studies of other related topics involved more discussion, reading and writing. Signal flags, for example, are of interest to fifth graders. To solve the problem of where to get information about them, the students consulted the phone book under U.S. Government, from which source they obtained a booklet which contained parts of the Coast Guard manual. With the help of this material and the encyclopedia, they constructed actual size signal flags and coded and decoded messages in the classroom (e.g., "math quiz Monday").

The study of signal flags spurred the students' interest in other types of codes. The Holt basal reader story, "Alvin and the Secret Code" by Clifford B. Hicks (in **Freedom's Ground**, 1983), was read. Since computers are operated through codes, the ASCII binary code was investigated, which led to a consideration of our base 10 number system and a brief look at bases other than 10. The classroom lights were used as signals for binary code activities. Using one bank of lights, "on" means stand up and "off" means sit down. Using two banks of lights: on-off = stand up/hands down, on-on = stand up/hands up, off-on = sit down/hands up. The students were guided to count the possible number of "signals" needed to code a keyboard containing 26 lower case letters, 26 upper case letters, ten numerals, various punctuation marks, return, backspace and other keys. This led naturally to a consideration of how "bits" and "bytes" of code direct the computer's operation. Concepts about electricity from the science textbook were

introduced at this point and led to students experimenting with switches and series and parallel circuits. Using a string of eight Christmas lights on a board, they could show various on-off combinations of codes to represent various letters. The story by Daniel Paul, "on-off-off-on-off-on," in the Holt basal reader (**Freedom's Ground**, 1983) was very appropriate here.

Since telecommunications were being used, many concepts about this media were also studied. Simple worksheets were chosen from the "Computer Communications" unit of TIME, Vol. 2 (Crooks, 1988). The **Information Connection** software (Grolier) is an easy to use way to introduce communications; it provides a simulation, a practice section and then actually runs the modem (phone connection to the national network). Students learned that the school district has a business account with Compuserve and they were able to explore some of the other features that can be reached on the network: games, sports, UPI, and electronic mail. Two other basal reader selections from **Freedom's Ground**, "One for the Computer" by Ethelyn M. Parkinson and "Computers Today and Tomorrow" by Control Data Company, were read in relation to this phase of the unit.

Over the year, a number of meaningful learning experiences grew out of the Eagle's trek. Technology stimulated and supported the study, even though the access to computers was very limited. Hopefully this twentieth century sailing voyage helped these fifth graders as they move toward the twenty-first century in which technology will play an important role and in which they will spend most of their lives.

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