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Nontraditional Marine Education Activities:

a planning guide

by
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Virginia Sea Grant
at the
Virginia Institute of Marine Science
College of William and Mary

Educational Series Number 32

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Introduction

Field trips should be integral “learning from life” interactive experiences which are much more than accessory enrichment activities or frills. Field trips illustrate, expand upon and extend concepts and skills learned in the classroom and laboratory. For younger students, field trips may be ends in themselves, while in older students, the trip may be a means to an end. Older students benefit from the stimulation of a nontraditional experience such as a field trip in learning new concepts and practicing techniques (Falk & Balling, 1980; Falk, Martin and Balling, 1978).

A marine education field trip can range from exploring a pond on the school grounds to a weeklong canoe trip through an estuary and its tributaries. Where you go and what you do depends on the age and maturity of your students, subject matter and school policy.

To a classroom teacher, the rising cost of gasoline often means few or no field trips. If trips are still permitted, restrictions on distance may be imposed and justification required. Therefore, teachers must make any enrichment trip or alternative experience demonstrably accomplish objectives not readily achieved in the classroom. The information contained in this booklet provides guidelines to getting the most from research field trips, museum visits, resource speakers and other nontraditional experiences.

I. Planning A Field Trip Checklist

Make a list of resource people and places within reasonable distance of your school that are germane to topics you will be teaching. Helpful publications include "Guide to Virginia's Museums of Art, History and Science," "A Look at the Most Popular Field Trips Among Virginia Schools," "Field Trip Sites in Virginia for the Marine Educator," and publications by the Division of State Parks and Virginia's Travel Council. Many publications of this sort are free.

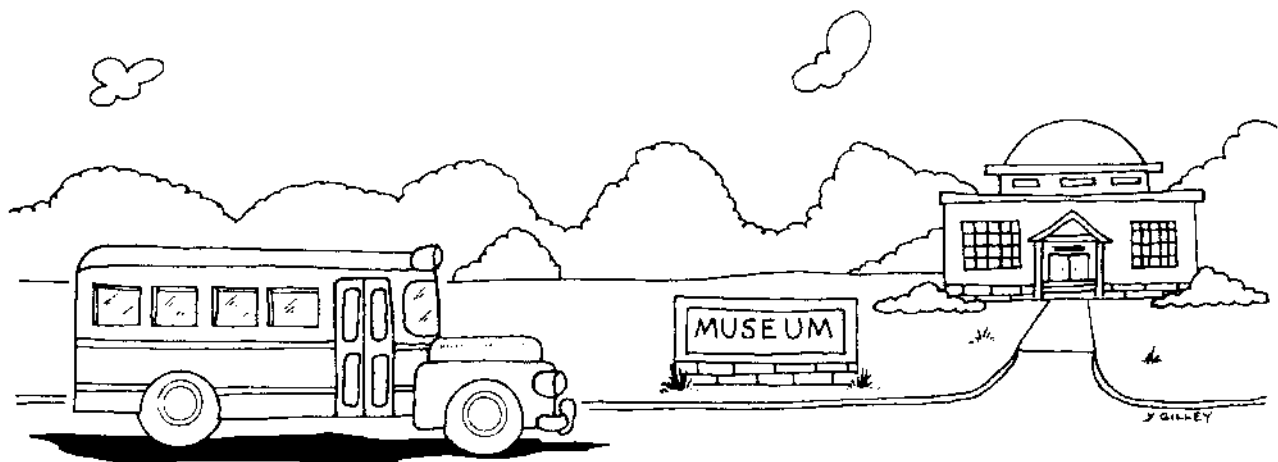
List your major objectives for the class. Compare this list to your list of field trip possibilities. Be sure your field trip destination is compatible with your objectives.

Your school system may have objectives and requirements that your field trip plan must satisfy. Find out about all of these now to prevent frustration later.

Contact resources by letter or telephone. Determine what kinds of experiences the facility provides and whether or not these seem to match your objectives (e.g., participatory versus nonparticipatory activities, subject matter which dovetails with classroom studies). Some resource personnel will tailor presentations and experiences to the specific needs of the visiting students.

Visit the site in person if at all possible. Note the features or landmarks to be observed during the bus trip. Trace the route your trip will follow, selecting activity sites and checking for safety hazards. Plan the details of the field trip with the resource person(s) at your destination. Exactly what packaged programs or experiences are available?

Consider a teacher-led field trip. Teacher-designed and led field trips can provide incompar-



able learning experiences, perfectly tailored to both objectives and students. Some sites and facilities have resource persons who are willing to brief teachers, lend equipment (e.g., nets, chemicals, buckets) and provide educational materials possibly free of charge. If equipment is not provided, ask for a list of what you might need or want to bring along. Provided you do your homework, your teacher-guided trip may be as valuable or more valuable than a prepackaged one.

Set a date, an arrival time and length of visit. Determine the number of students who can be accommodated, the costs, dining facilities, suggested dress (e.g., will the students get wet and need a change of clothes?) and what expectations the facility might have for a group (i.e., conduct, liability releases, required number of chaperones. Many facilities suggest at least one chaperone for every ten students). Will students be allowed to collect specimens? Settle details of transportation, insurance and expenses. Confirm everything in writing.

Send notices to parents explaining trip purpose, schedule and costs. Obtain written permission for the trip from parents.

Get your students involved in planning and preparation for the trip; e.g., studying maps, compiling resource materials and even such basics as the planning of meals. Students can list and collect equipment and materials needed for collecting specimens if specimen collection is specifically allowed by site personnel. Do not plan to take live aquatic animals home unless you have the proper support systems to maintain them (e.g., portable, battery-operated pumps for the trip and an aquarium in the classroom). Do not plan to randomly preserve specimens without a specific teaching objective.

With your students, formulate specific objectives, worksheets and study guides for the trip. Be certain students, adult chaperones and the "in-charge" person at the place you are visiting have copies of all educational materials.

Construct a division-of-labor timetable which places students in work groups with specific tasks assigned to them. Go over all field guides and worksheets prior to the trip. Teach and pra-

tice specific laboratory techniques to be used during the trip. Do not try to teach new techniques in the field. Go over ways in which notes are to be taken and data recorded. Assign equipment taken into the field to specific monitors who will take responsibility for its whereabouts at all times. Assign equipment to students whose morale most likely would benefit from added responsibility and distinction.

Many facilities provide teacher resource kits which contain information and/or pre- and post-visit activities. You may wish to utilize the suggestions, vocabulary lists and worksheets provided, or you may wish to tailor-make your own. Facility educators appreciate prepared students. In any case, most expect students to be active participants and learners rather than passive observers waiting for entertainment. Encourage your students to compile questions they would like answered.

Take a camera and film if possible. Photographs make good bulletin board displays and they may be useful in follow-up activities. Be sure to include photos of "problem students" being successful in order to provide an improved self-concept and boost morale.

Talk about the trip afterwards with the class and decide together whether the objectives were met. Integrate the trip into the semester's studies by following up with appropriate activities; e.g., discuss the data collected and compare it with material in texts.

Be sure to send a class "Thank You" to your area host. If you felt the instructor at the facility did a good job, send a letter of commendation to his/her superior. If you took any black and white photos, you might consider sending one with a short press release to the local newspaper (with your principal's approval); it constitutes good public relations, both for the school and for the resource you visited. Individuals and facilities need to know they are appreciated.

Even if not required, send a brief report stating the objectives accomplished by the field trip to your principal with a carbon copy to your district director of instruction. Share your photographs with administrators. Remember, they must clear your next field trip.

II. Planning: In-Class Nontraditional Activities

Rarely can a classroom activity substitute directly for visiting a new and stimulating place which contains more objects and exciting sensory experiences than you can take back or duplicate in school. However, given a fixed "no field trip" rule, it is up to you to try to bring a museum, beach, aquarium or marsh into the classroom as a substitution for the trip.

This is not to suggest that nontraditional in-class activities need to be second-rate educational experiences. Since there are no complicated and time-consuming logistical problems, teachers who conduct in-class special activities have available to them ample time and energy for instructional planning. The field-tripping teacher, on the other hand, must expend time on details with no direct learning benefits. Further, the in-class educational experience is free of extraneous distractions so prevalent on field trips. Within the familiar classroom environment, students do not have to worry about location of restrooms, change for soft drink machines or who sits by whom on the bus.

Even though your class may not be traveling somewhere for a field trip, reviewing the procedure in Section I for applicable portions will keep the in-class activities in perspective and on track.

Nontraditional in-class activities give the students special, valuable experiences in a familiar sit-



uation. There are several types of nontraditional in-class activities, each with special advantages.

Direct Substitution. This type of activity substitutes for a field trip. For example, an alternative to visiting a large public aquarium would be setting up your own aquarium in the classroom. Students who keep fish and invertebrates as pets could contribute some organisms and knowledge for the class's benefit.

To make the experience correspond as closely as possible to a field trip aquarium visit, prepare a list of instructional objectives for an aquarium field trip, then transfer the essence of those objectives to experiences possible with a classroom aquarium. Objectives based on observational and inferential skills should transfer easily and directly, although the specimens involved may differ. You may wish to use pictures or other supplemental resources to meet your objectives. The class that sets up an aquarium gets an extra bonus: Students learn to create and manage a functional aquatic support system.

Site-specific Materials. Traditional science lessons make heavy use of textbooks and representational materials. An inexpensive alternative to this type of lesson is for you to visit a nearby site or resource alone or with a small group of students (for whom the proper permission has been obtained) and return with sample collections; e.g., shells and objects from the beach, and science kits or sets of specimens from a museum or laboratory. Funds may be available from your school system or PTA for such supplies. Start a class museum based on collections which endure and grow year after year.

Design your lesson(s) to take advantage of the uniqueness and special attributes of these objects. Science process skills may be effectively taught using them.

Imported Expertise. Although a facility may not advertise special services such as speakers and loan-films, ask if these are available. You may be able to arrange for an "expert" to visit the class and bring items to demonstrate and touch, but give serious consideration to your objective before arranging for such presentation.

Exactly what do you want your students to gain from an interaction with imported expertise?



Let your objectives guide you in planning for this experience. Unless your students are extremely sophisticated, they may not appreciate or even understand the advanced insight of the expert.

Sound educational practice leads the good teacher to consider students' intellectual maturity and levels of skill and content mastery when planning an instructional program. Don't waste your time, your students' time and your prospective expert's time by scheduling a speaker solely because you are dazzled by his or her professional excellence.

Are you introducing a unit on fish to fourth graders? You might consider inviting several fishermen whom you know to be good with children to be your guests in the classroom. A marine scientist is not necessarily a preferable choice. On the other hand, if you are teaching pollution biology to advanced high school seniors, your objectives will call for somewhat sophisticated scientific input. You would look to the scientific community to locate a resource person who can be expected to conduct a session appropriate for these students.

III. Instructional Approach

The field trip and the nontraditional classroom experience lend themselves particularly well to certain types of objectives. Your instructional approach will depend upon how you want the experience to achieve your objectives and those of your school. Suppose you wish to teach about marine environment but your school requires you to teach basic concepts and skills--no frills.

You can justify an alternate education experience by making the trip an intergral part of your instructional plan for the course, and by writing your own objectives and student study sheets

in terms of the basic skills you are teaching and the special activities you plan. Using content to stress basic skills is a good approach in writing your own lesson plans (e.g., many science lessons may be based on similarities and differences, observation, classification and the scientific method). For ideas, consult the Marine Science Methods (MSM) leaflets at the end of this booklet.

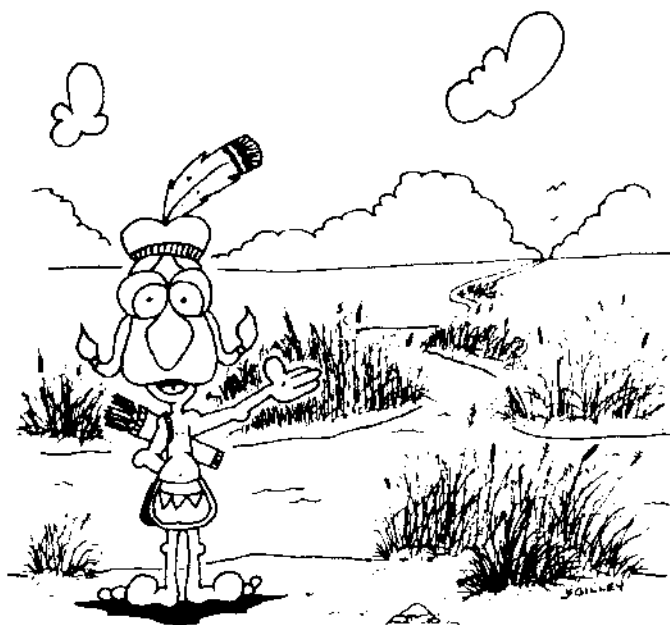
Another way to use these special experiences is to introduce a new topic through an interdisciplinary approach utilizing a subject area with which you and your students are familiar. For example, consider the saltmarsh community (new topic in science) through the eyes of precolonial Indians (familiar topic in history). You need not be the expert on every topic, nor should you be expected to indentify all specimens. Instead, you may enjoy learning with your pupils.

Many references and teaching materials are available through the Virginia Institute of Marine Science Sea Grant Marine Education Center. Lesson plans, units, curriculum guides, field guides, reference materials and audiovisual materials on virtually all marine topics are available. Call (804) 642-6131, Ext. 111 or write to:

VIMS-Sea Grant
Marine Education Center

Virginia Institute of Marine Science

Gloucester Point, Virginia 23062



IV. Resources for Field Trips and In-Class Nontraditional Activities

Museums
Aquariums
Nature centers
State, federal and city parks and visitor centers
Fish and aquarium stores
Pet stores and pet sections of department stores
Seafood processing plants
Seafood restaurants
Local fishermen
Bait and tackle shops
Seafood counters in grocery stores
Oceanography or science departments of colleges or universities
State and federal agencies with environmental responsibilities
Clubs (e.g., shell hobbyists, aquarium societies)
Fish hatcheries
Libraries
Students' relatives

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- Tide Graphs for Hampton Roads, Virginia and Tide Graphs for Wachapreague, Virginia. Published quarterly by the VIMS Sea Grant Program. Free subscription obtained by written request.
- VIMS Sea Grant Marine Education Program. Booklet. Free.
- VIMS Marine Resources Bulletin. A free subscription to this quarterly newsletter may be obtained by written request. Recent back issues are available. New "Wavelets" (education insert) included in each issue.
- Virginia History and Museums Federation. Guide to Virginia's Museums of Art, History and Science. 16 pp.

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