

Promising Practices in Afterschool Nancy Peter - 2003

OVERALL GOALS OF PROGRAM:

The five goals of the Women in Natural Sciences (WINS) program are:

- 1) To involve and engage young women in natural science content.
- 2) To provide participation in scientific practices and research techniques.
- 3) To develop students' interpersonal, social, and life skills.
- 4) To promote career awareness, preparation, and access.
- 5) To foster environmental understanding and stewardship

COMMUNITY MEMBERS PROGRAM SERVES:

The WINS Program serves young women in 9th and 10th grade who attend a Philadelphia public school, demonstrate financial need, live in households where one or more parents are absent, and have an aptitude for and interest in science.

HOW COMMUNICATE WITH PEOPLE INVESTED IN PROGRAM:

Parents: Participate in the initial application and interview process, are invited to attend classes and chaperone field trips, are contacted if there are issues of concern, and participate in special festivals and events.

Siblings and Friends: Are invited to all classes and, when space permits, on fieldtrips.

Board Members: Receive regular written updates and are the frequent recipients of program presentations.

Funders: Review all applications before the students are selected and formally monitor student performance and financial output.

Museum Staff: Receive informal reports regarding the WINS program and are regularly encouraged to supervise students as volunteers or part-time staff.

Colleagues: Are informed and updated about the WINS program through conference presentations, workshops, and written materials offered numerous times over the past 15 years.

HOW PRACTICE WAS DEVELOPED:

School Tokens: Because the WINS program recruits students from all over the city, utilizing public transportation was always an integral part of the program design. WINS girls were initially given monthly trailpasses which enabled them to use unlimited public transportation at most times of the day, seven days a week. However, trailpasses were an expensive way to pay for as few as 4 trips a month (they currently cost approximately \$100), students often lost and their trailpasses, and receiving trailpasses at the beginning of each month reduced their incentive for continued participation. Through its affiliation with the School District, the program administrators began purchasing school tokens in bulk, each of which provides a single trip that can involve multiple modes of transportation. Students began receiving two tokens at the end of each class, to

retroactively pay for their transportation to and from the museum. As the program expanded and participation no longer occurred only on weekday afternoons, the administrators contacted the Southeastern Pennsylvania Transportation Authority (SEPTA) about creating specialized ID's that allowed the students to use SEPTA late in the afternoon, in the evenings, and on weekends.

Curriculum Development: As the goals of the WINS program expanded and the variety and frequency of fieldtrips continued to grow, the development and integration of "mapping" lessons became an obvious addition to the curriculum. Not only did it help the students navigate the ins and outs of the city, it allowed them to determine the approximate distance of a field trip destination, to use topographical maps to choose optimal hiking routes, to connect common products to national and international origins, to research and design urban parks, and other similar activities.

STAFF TRAINING:

The staff training involved in purchasing school tokens in bulk simply consisted of introducing new staff to the SEPTA contacts and acquisition processes. Since generally one staff person has taught the WINS program at any one time, it has been unnecessary to formally instruct other staff in the mapping curriculum. This curriculum has, however, been presented at two professional conferences.

RESOURCES NEEDED:

The resource required to purchase bulk tokens is access to a car, since the boxes of tokens are heavy and the SEPTA administrative office remote. The resources needed to implement the mapping curriculum have been minimal and include a variety of commercial maps, compasses, rulers, pencils, paper, access to a photocopy machine, etc.

OTHER THINGS NEEDED IN PLACE:

Familiarity and longevity have been the key to many successful changes in the WINS Program. Through years of working with the staff and understanding the infrastructure of the School District and SEPTA, we were able to make suggestions that would not have been well received at the beginning of the program. Similarly, we worked with the WINS population for an extended period of time before developing the mapping curriculum. Subsequently, we were able to ascertain their needs and interests as well as gain increased autonomy – and therefore creativity – from the sponsoring organization and the program funders.

HOW PRACTICE PROMOTES POSITIVE SOCIAL, EMOTIONAL, COGNITIVE, PHYSICAL, EDUCATIONAL, AND CULTURAL OUTCOMES AND WHAT IS EVIDENCE:

Outcomes: Being given school tokens, using tokens beyond school-day hours, and participating in the mapping curriculum develops student attributes in the following ways:

Social: Students learn how to effectively communicate with (unknown) adults of authority when presenting and explaining their ID cards to SEPTA drivers; students often work in teams when reading maps, creating 2-dimensional and 3-dimensional city parks, determining driving times and distances, practicing giving directions – all activities that exercise different skills and, therefore, identify different student "leaders."

Emotional: As mentioned above, students practice controlling their emotional responses to SEPTA drivers who will not honor their ID's; in simulated debates about park construction and land use, students learn to balance passion with patience and diplomacy.

Cognitive/Educational: The mapping curriculum covers topics and exercises skills related to math, arithmetic, geometry, slope, scale, distance, measurement; compass use, orienteering, geography, abstract thought (converting 2-dimensional illustrations into 3-dimensional realities), land use, economics, and environmental/cultural decision-making.

Physical: One physical aspect of the activity is that students become more comfortable traveling alone from one section of the city to another. This may replace time spent in sedentary activities such as watching TV and “hanging out” with neighborhood friends. Another is that, before embarking on a hike, students select a route up a hill or mountain based on slope and distance ascertained from topographic maps.

Cultural: Within the context of their city, students explore the economic, political, geographic, recreational, cultural, religious, environmental, and social factors that contribute to urban planning and modification. Another activity identifies the origins and traces the journeys of common household products. This introduces participants to national and international maps, resources, industries, and issues.

HOW PROMOTES EXPERIENCES AND LEARNING STYLES AND WHAT IS EVIDENCE:

The answers to these questions almost are essentially included in the preceding section. However, specific learning styles exercised include:

Visual and Auditory: Students have multiple opportunities to read maps, listen to instructions and to each other, watch slide shows, etc.

Experiential: WINS girls create one and two-dimensional maps, trace the origins and routes of actual every-day objects, enact role-plays and simulated debates, participate in one-day, weekend, and week-long field and camping trips. They even learn to correctly re-fold maps.

Mixed Media: The lesson formats include lectures, presentations, individual activities, small group projects, mathematical investigations, arts and crafts, scavenger hunts, etc.

LINKS TO SCHOOL DAY AND EVIDENCE?

Over the years, the WINS program has directly connected out-of-school activities to classroom participation by covering topics which purposefully introduce or enhance city-wide curriculum (for instance, relating earth science activities to the semester in which earth science is taught). In addition, students receive early dismissal on after-school afternoons, are given program descriptions for their teachers, and are encouraged (through contact with both student and teacher) to offer formal and informal WINS presentations to their classmates. WINS students also help recruit students for the following year by personally giving teachers applications for distribution to their incoming classes.

Because of recent and significant reorganizations within the School District of Philadelphia, the steady integration of WINS and classroom activities has been more challenging.

HOW ENGAGE ACCOUNTABILITY FROM STAKEHOLDERS:

There is no obvious connection between WINS token acquisition and mapping curriculum and stakeholder engagement and accountability. In addition, this question may be less applicable to the WINS Program than to those which are community-based, are funded by multiple sources, have youth councils and advisory boards, etc. However, one major responsibility and outcome associated with the program (and other museum-based youth programs across the country) relates to institutional integration as a whole. When WINS began in 1982, the rest of the Academy staff were neutral at best and terrified of the girls at worst. Over the past 21 years, museum staff:

- Participate in classroom activities, lead behind-the-scenes tours, and serve as field trip leaders
- Oversee WINS volunteers in jobs ranging from staffing the Academy’s Children’s Museum to helping care for diverse animals in its Live Animal Unit.
- Have mentored students in their city-wide science fair projects and participation.

Have employed the girls in part-time positions such as research assistant, exhibit interpreter, and visitor services representative.

- Have actively pursued local and national funding for new WINS-like initiatives and improved/enhanced WINS activities.

HOW REFLECTS KNOWLEDGE/APPRECIATION OF DIVERSITY:

Many WINS activities are intentionally designed to reflect diversity, tolerance, and appreciating of difference. Within this specific practice:

- Tracing the route of object around the globe demonstrates both the diversity human resources and how many communities and cultures it takes to make a pencil, toothbrush, or similar object.
- Enacting simulated debates, and especially ones in which a student must assume someone else's character and point of view, encourages the girls to explore situations from multiple perspectives and to "stand in someone else's shoes."
- Being asked to give a hypothetical pedestrian detailed travel directions reminds the students of how difficult it is to give accurate directions and, at the same time, the importance of accuracy to others.

EVIDENCE:

There has been no formal evaluation of these mapping activities and no attempt to connect specific lessons to specific outcomes. However, beginning 1987, the WINS program has participated in several long- and short-term evaluations. Funded by the original foundation, local corporations, national organizations, and government agencies, these evaluations have measured:

- One-year changes in scientific achievement, overall attitude toward school, environmental stewardship, self-confidence, and perceptions of women as science professionals. Techniques have included pre-and post-tests, before and after surveys of teachers and parents, and comparisons of the WINS students to a local control group and to national statistics.
- Longitudinal studies (covering as much as 20 years) which measure how many WINS participants have completed high school, have completed college, have earned advanced degrees, have chosen careers in science-related fields, have returned to the museum with their families, etc. These studies also include qualitative components in which women reflect on their experiences as high school WINS students.