

RESEARCH

By providing an active learning environment, field trips can promote various aspects of student development. Some major benefits of field trips are as follows:

- Facilitates the learning and retention of abstract concepts (Orion, 1993)
- Motivates students through increased interest and curiosity (Manner, 1995)
- Teaches scientific methods by example (Manner, 1995)
- Increase in science scores when collecting data monthly (NCES 2001)
- Environmental education can be linked to education reform. (ASCD 2001)
- Increases student-student and student-teacher social interaction (Smith, 1995; Manner, 1995)
- Learning is seen as a practical component of life versus a structured classroom activity (Manner, 1995)
- Field trips can be a beneficial experience for students with behavioral problems. (Willis, 1997)
- Field trips facilitate a sense of community among students through shared experiences (Willis, 1997)
- Field trips and museum exhibits can provide "hands on and minds on" activities which encourage students to experiment and ask questions (Viadero, 1998)

At least a minimum of 40% of the instructional time in secondary science (grades 9-12) be devoted to laboratory and field activities §74.3.



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Teaching Should Extend Beyond the School
"Good science programs require access to the world beyond the classroom. District and school leaders must allocate financial support to provide opportunities for students to investigate the world outside the classroom. This may mean budgeting for trips to nearby points of interest, such as a river, archaeological site, or nature preserve; it could include contracting with local science centers, museums, zoos, and horticultural centers for visits and programs. Relationships should be developed with local businesses and industry to allow students and teachers access to people and the institutions, and students must be given access to scientists and other professionals in higher education and the medical establishment to gain access to their expertise and the laboratory setting in which they work."

*National Science Education Standards
Published by the National Academy Press of the
National Academy of Sciences*



"Science teachers should exploit the rich resources of the larger community and involve parents and other concerned adults in useful ways."

*Science For All Americans
Published by the American Association for the
Advancement of Science*

PURPOSE

The purpose of these guidelines is to address the need for field investigations and for curriculum-based field trips for the students of Texas. In order to prepare citizens who understand natural and cultural phenomena, students must gain first-hand knowledge of the world.

RATIONALE

Science learning experiences occur in the classroom, in the laboratory, and in the field. In these experiences, students discover facts, concepts, and laws of science for themselves, much as scientists do in their professional lives. Experiences that extend from the classroom into the field allow students to explore, observe, and investigate things in the natural world that cannot be brought into the classroom learning environment.

The Texas Essential Knowledge and Skills for Science require teachers at all grade levels to be provided with a wide range of materials and instruments for facilitating student investigations. They also require that students, at every grade level and in every high school course, have field experience and do field work. At the secondary level, a minimum of 40% of instructional time must be spent in laboratory and field work. (19 TAC, Chap 74.3.)

On-campus and off-campus field work, field trips, or field investigations provide first hand experience to a well-designed inquiry-based science program for students. Direct observations in a field setting provide a more stimulating and rewarding experience for the students and the teacher.

om Texas Safety Standar

GUIDELINES FOR INSTRUCTIONAL FIELD EXPERIENCE

I. TEKS Correlation

The field experience needs to be an integral part of a State Board of Education (SBOE) approved course and must assist students in acquiring the knowledge and skills necessary to be successful in mastering the Texas Essential Knowledge and Skills (TEKS).

- The field experience should have clearly stated instructional goals based on the TEKS.
- The field experience should have three components: pre-visit, on-site, and post-visit TEKS-based instructional activities that are clearly developed in lesson plans.

II. Opportunities for Learning

Like all instructional experiences, the field experience should provide equitable learning opportunities for all students.

- The field experience should not be used as incentive for specific behavior.
- Comparable learning experiences should be available for students who are not able to participate in the field experience. These alternative learning experiences should introduce, develop, or reinforce the same TEKS as the original field experience and would preferably be laboratory and/or field-based.
- The field experience should include formative and summative assessments of student expectations.
- Field experiences should occur during the time that concepts are presented and developed in the classroom.

III. Complies with Texas Safety Standards

In order to ensure a productive learning experience in a field setting for all participants, safety guidelines must be established and maintained.

- School districts should develop and implement safety procedures for laboratory investigations and field trips.
- Teachers should learn safe procedures for laboratory activities and field trips and follow them as a matter of policy. NSTA: Field and Laboratory Liability, 1984.

RESOURCES

Texas Safety Standards

Available from the Texas Education Agency, Publications Distribution & Sales, P.O. Box 13817, Austin, TX 78711-3817 or from the Charles A. Dana Center at the University of Texas at Austin at <http://www.tenet.edu/teks/science/stacks/safety/safetymain.html>

Texas Environmental Education Advisory Committee (TEEAC) Sites and Programs
http://www.tenet.edu/teks/science/stacks/resources/teeac_sites.html

Directory of Texas Environmental Education and Interpretive Facilities
<http://www.tpwd.state.tx.us/edu/edu.html>

The Texas Science Center for Professional Development in Curriculum and Assessment
<http://www.texassciencecenter.org>

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