Teacher Information
Tornadoes

I. Objectives

A. Forming Concepts (Introductory) Objectives

1. Describe when and where most tornadoes form.
2. Describe a tornado.
3. Explain tornado watches and warnings and how to respond.
4. Describe the signs that indicate a tornado might form.
5. Describe how tornado forecasts first began.
6. Learn about the Fujita Scale.

B. Interpreting Data Objectives

1. Interpret charts using the Fujita Scale.
2. Describe tornado damage as it relates to the Fujita Scale.
3. Interpret chart and calculate percentages.

C. Applying Principles Objectives

1. Draw conclusions from data gathered on tornadoes as related to tornado forecasting.
2. Discuss the importance of following safety plans given the amount of damage done by most tornadoes.
3. Describe why it is unlikely an F6 rating will ever be assigned to a tornado.

II. Interdisciplinary Uses

A. Social Studies

1. Describe the geographic area most affected by tornadoes.
2. Learn about the social impact tornadoes have on families and communities.
3. Describe the potential impacts a tornado would have on a community's emergency personnel.

B. Math

1. Read and interpret charts and graphs.
2. Calculate percentages.

C. Language Arts

1. Write a public awareness announcement/plan (for television, newspaper, and radio) to inform people what to do during tornado watches, warnings, and after a tornado hits.
2. Design a tornado safety plan for your school. Include the months that are most likely to produce tornadoes.

III. Science Standards Coordination

The Tornadoes activity has been designed to incorporate science standards as specified by the National Science Education Standards (NSES) and the National Science Teachers Association (NSTA) Scope, Sequence, and Coordination (SS&C) of Secondary School Science. Only the major topics are listed. For further explanation of each standard see the complete documents:

NSES - National Academy Press, 2101 Constitution Ave, NW, Washington, DC 20481
NSTA – 1840 Wilson Blvd, Arlington, VA 22201-3000

NSES	SS&C
Structure of earth systems	Water cycle
Earth in the solar system	Precipitation
Transfer of energy	Wind
Understanding about science and tech	Sun as an energy source
Science and technology in society	Water

IV. Advanced Preparation

A. Materials

1. One computer per two or three students is a recommended minimum,
2. One copy of the Student Activity Book for each student or group of students.

B. Time Required Completing the Activity

1. The Get Info Section takes 30 to 40 minutes
2. The Gather Data Section takes 30 to 40 minutes
3. The Application section takes 15 to 20 minutes

C. Teacher Familiarity with Tornado Activity

Preview these materials thoroughly. As with all these activities, before using this activity in class, review the sites and work through the activity yourself to learn about tornadoes so you can answer questions or direct students to the answers.

The activity is set up so students are taken to sites containing information that will be used to answer questions regarding tornadoes. The sites contain either the answers or the information from which the students can infer the answers. At the end of the activity, there is a list of enrichment activities and related web sites.

D. Select Questions for Students to Answer

It would be prudent for you to read the questions students will be expected to answer. These questions are in order of ascending difficulty. Depending on grade level and ability level, you might want to assign specific questions for your students.

E. Student Grouping

These activities can be done individually or in small groups of two or three students. Students who have Internet access can also do them at home for extra credit.

F. Software Requirements and Duplication Preparation

1. Adobe Acrobat Reader is required to download the pages. Click the "Tech Info" link on the Science with NOAA Research homepage to download Acrobat Reader.
1. Download the Teacher Information, Teacher Key, and Student Activity Book PDF files from the "Teacher Info" web page.
2. Duplicate and distribute student pages. Ideally, each student should have a copy of the Student Activity Book that should be distributed and discussed the day before the exercise.