Disastrous Data: We Need a Plan

Students learn about natural hazards and how to protect themselves and others.

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Grade Level: 6
Duration: 1-2 class periods

Overview
A natural hazard takes place in the physical environment and destroys human life, property, or both. Tornadoes, lightning, floods, extreme temperatures, and earthquakes are some natural hazards that have had disastrous effects on human systems. Analyzing data about such events can help students understand the impact that natural hazards have on human life and the need for a plan of action to help prepare the population to better survive disasters.

Purpose
In this lesson students will practice using mean, median, mode, and range to organize and analyze data on the consequences that natural disasters have on human life. Students will formulate ideas to help prepare populations and avoid casualties.

Materials
- Calculators (optional)
- Maps: Disastrous Flash Floods, Disastrous Lightning, Disastrous Heat Extremes, Disastrous Tornadoes (one for the group assigned this topic)
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- Disastrous Data worksheets (enough copies of each for every member of the group)
- Disastrous Data worksheets keys
- Optional: pictures or video clips of flash floods, lightning, heat extremes, and tornadoes.
- Oral Presentation Form

Objectives
The student will be able to:

1. Practice using mean, median, mode, and range to organize a set of data on deaths caused by natural hazards.
2. Formulate ideas to help prevent deaths caused by these disasters.

Procedures
Prerequisite: Students should have practice in calculating mean, median, mode, and range

SESSION ONE
1. Write on board this definition: natural hazard—a process, taking place in the natural environment that destroys human life, property, or both.

2. Brainstorm with the class possible natural hazards. Are they natural or man-made? What are the consequences to humans? What can be done to prevent deaths?

3. Divide the class into four groups. Each group will be responsible for one of the following:
   - lightning data
   - tornado data
   - flash flood data
   - extreme heat data

4. Give each group one copy of their group's map and enough Disastrous Data worksheets for each group member.

5. Go over directions and procedures.

6. As groups work on worksheets walk around the room and discuss their data, consequences to humans, and ideas to prevent deaths. (Students should have their worksheets completed before the next class meeting or procedure step.)

SESSION TWO
1. Give groups about 15 minutes to organize for a written display or oral presentation of data, commenting on 4 consequences to humans and 4 ideas on how to prepare for their hazard.

2. As the groups are presenting, continue class discussions with comments, questions, and possible answers.

Assessment
Math: Check the groups' calculations using the worksheet keys. Students should score 80% or higher.

Geography: Each group should be able to come up with 4 consequences to humans and 4 ideas for how to prepare for their given hazard (8 points). Groups should have 6 points or higher to be considered mastery.

Extensions
- Data can be organized with box and whisker plots, stem and leaf plots and/or pie graphs
- Update these statistics. Students can compare data from different years.
- Research information on natural hazards and the consequences to humans and environments.

Sources
www.fema.gov/kids/dizarea

lwf.ncdc.noaa.gov/oa/climate/research/2002