



## Assignment Discovery Lesson Plan Water: Friend and Foe

### Subject

Technology

### Grade level

6-8

### Duration

Three class periods

### Objectives

Students will

- brainstorm fire-related words and phrases;
- discuss preventing fires, preparing for a fire, and protection from fire; and
- work in groups to create fire-safety posters for their school

### Materials

- Computer with Internet access
- Print resources about fire safety
- Materials to create a posters (poster board, markers, paint, colored pencils, glue, scissors)

### Procedures

*This lesson may be used to support National Prevention Week, an annual event sponsored by the National Fire Protection Association, held during the week in which October 9 falls. In 2003, this is the week of October 5-11.*

1. After watching the video, ask students to brainstorm words or phrases relating to fires and firefighters.
2. Tell students that the National Fire Protection Association (NFPA) reports that a fire is reported every 15 seconds, and in most cases, these fires are preventable. Write three columns on the board: PREVENT, PREPARE, and PROTECT. Ask students how they can do to prevent fires from happening in their homes; write their answers under PREVENT. See below for examples.
  - Don't play with candles, lighters, or matches.

- Keep flammable items away from stoves and hot appliances.
  - Clean the lint filter in your dryer after each load. (About 14,000 fires occur because of dryer problems each year.)
  - Don't plug too many appliances into one outlet.
  - Unplug tools and appliances when not in use.
  - Don't place extension cords under rugs.
  - Make sure space heaters are at least three feet from furniture, drapes, or anything that can catch fire.
  - Don't throw water on a grease fire; use salt, baking soda, or a fire extinguisher.
3. Ask students how they might prepare for a fire and write their answer under PREPARE. See below for examples.
- Install smoke alarms and test them regularly.
  - Develop and practice home fire drills.
  - Keep a fire extinguisher in the kitchen.
  - Keep a list of important numbers (fire department) near the phone.
4. Ask students how they would protect themselves if they were a fire and write their answers under PROTECT. See below for examples.
- Leave the house immediately.
  - Don't open a hot door. (To check, touch it quickly with the back of your hand.)
  - If there's smoke, crawl on the floor.
  - If your clothes catch fire, roll on the floor, but do not run.
5. Tell students that they will work with partners to create fire-safety posters for their school. Their first assignment is to explore other fire-safety resources to find important messages about fire prevention, preparation, and protection.
6. Have students use print and online resources in their research. The following Web sites may be helpful:

Facts on Fire

<http://www.usfa.fema.gov/public/facts.shtm>

NFPA Fact Sheets

<http://www.nfpa.org/Research/NFPAFactSheets/NFPAFactSheets.asp>

Home Fire Safety

<http://www.cdc.gov/nasd/docs/d000701-d000800/d000707/d000707.html>

USFA Kids Page

<http://www.usfa.fema.gov/kids/>

Fire Prevention Week

[http://www.nfpa.org/FPW/Kids\\_Area/kids\\_area.asp](http://www.nfpa.org/FPW/Kids_Area/kids_area.asp)

Fire-safety Sites

[http://www.education-world.com/a\\_sites/sites056.shtml](http://www.education-world.com/a_sites/sites056.shtml)

Fire Safety and Protection Tips

<http://www.firesafetytips.com/default.htm>

Fire Safety

<http://www.ou.edu/oupd/fslist.htm>

7. The main feature of the students' posters should be the message, written in clear, direct language and large, easy-to-read letters. Posters should also include an explanation, example, statistics, or other important information from their research. And each poster should include an picture or diagram to help support their message.
8. Hang student posters along the school hallway or cafeteria during National Prevention Week. You may want to create three separate sections of the display: PREVENT, PREPARE, AND PROTECT.

### **Evaluation**

Use the following three-point rubric to evaluate students' work during this lesson.

**3 points:** Students were highly engaged in class discussions and showed thorough research on their fire-safety message. Their posters featured all of the required information: one, clear message, an explanation or examples, information and statistics to support their message, and an engaging diagram or image.

**2 points:** Students participated in class discussions and showed satisfactory research on their fire-safety message. Their posters featured most of the required information: one, clear message, an explanation or examples, information and statistics to support their message, and an engaging diagram or image.

**1 point:** Students did not participate in class discussions and showed little or no research on their fire-safety message. Their posters featured incorrect facts or little or none of the requested information. The message was unclear and unsupported by examples or facts. The diagram or image was simplistic or unrelated to the fire-safety message.

### **Extensions for other video segments:**

**Turning the Tide Against Pollution:** After watching the video, review the different ways that Earth's water is being polluted, including industrial waste, runoff from fertilizers, and oil and gasoline seeping into groundwater. Have students learn more about these dangers and the problems they cause to create illustrated, one-paragraph summary reports of the problem. Create a "Save the Water!" display with these reports.

**Tracking Hurricanes:** Have each student work with a partner to write and act out a live weather report that warns of an approaching hurricane. Acting as a meteorologist, they should use a United States map to explain and describe the hurricane. Their weather reports should include the current location of the storm, its projected path and speed, and a prediction of when and where it should hit land.

**The Power of Water:** Review how water erosion created Niagara Falls. Have students explore other geographic features that are formed by the movement of water, such as canyons, caves, coves, and sea cliffs. Have them print out or draw pictures of examples from around the world and put together a "slide show" for the class.

## **Vocabulary**

### **combustible**

Definition: Able to catch fire or burn; flammable

Context: Stacks of newspapers can be extremely combustible.

### **fire triangle**

Definition: The three elements that are necessary for a fire to burn: oxygen, heat, and fuel

Context: The element of fuel in the fire triangle is anything that burns, from gasoline to draperies.

### **smoke alarm**

Definition: An electronic tool that detects smoke in the air and beeps to warn of a possible fire; also called "fire detectors"

Context: Smoke alarms should be installed near sleeping areas and on every level of your home.

## **Academic Standards**

The National Science Education Standards provide guidelines for teaching science as well as a coherent vision of what it means to be scientifically literate for students in grades K–12. To view the standards, visit <http://books.nap.edu>.

This lesson plan addresses the following national standards:

- Science in Personal and Social Perspectives: Natural hazards; Risks and benefits

## **Credit**

Joy Brewster, curriculum writer, editor, and consultant