

Dear Educator,

Thank you for taking part in The Pillowcase Project, an American Red Cross initiative that aims to bring emergency preparedness education to every community in the United States.

The Pillowcase Project started in New Orleans, where the Red Cross chapter leader learned about some students who had used pillowcases to carry their belongings during an emergency. The chapter began using pillowcases to teach children about preparedness, and The Pillowcase Project soon spread to Red Cross chapters in other states. Now, the Red Cross is distributing pillowcases to children across the country and teaching them to share what they have learned about emergency preparedness with everyone in their homes.

With this teaching kit, *The Science of Safety*, you can bring The Pillowcase Project into your classroom as well. The teaching kit includes three classroom activities that provide students with a scientific perspective on four natural hazards represented on the Hazards Map poster included in your packet – hurricanes, tornadoes, earthquakes, and volcanoes.

These activities support the Next Generation Science Standards' conceptual shift toward having science education reflect the interconnected nature of science as it is practiced and experienced in the real world. You can also use the *My Preparedness Workbook* in conjunction with these activities.

We hope that you will share *The Science of Safety* with other teachers in your school. Although the materials are copyrighted, you have permission to reproduce them for educational purposes.

We are interested in your feedback. Please let us know what tools worked best in your classroom and what we might do to improve this teaching kit in the future. Send your thoughts and ideas to ymiclassroom.com/science-of-safety. Thank you!

The American Red Cross

Target Audience

This teaching kit is designed for use with students in grades 3-5 as a supplement to the science curriculum.

Standards Alignment

This program supports Next Generation Science Standards for Grades 3-5. For details, visit ymiclassroom.com/science-of-safety.

Program Objectives

- Introduce key terms and science concepts for common meteorological and geological hazards
- Help students understand what to expect and how to stay safe during severe weather and other emergency situations
- Familiarize students and their families with the emergency preparedness information available from the American Red Cross at redcross.org
- Promote science learning through collaborative research, conceptual modeling, and engineering design

Program Components

- This one-page teacher's guide
- Three reproducible student activity sheets
- The Hazards Map poster included in your packet
- A feedback form accessible online at ymiclassroom.com/science-of-safety.

Using the Program Components

- Make copies of the activity sheets for all of your students. Provide master copies of the program to other teachers in your school.
- Use the Hazards Map poster to introduce your students to some of the natural hazards that occur in the United States. Point out the hazards common to your region and talk about hazards that occur where students have relatives and friends. Explain that students will be learning about four natural hazards – hurricanes, tornadoes, earthquakes, and volcanoes – and how to stay safe when these hazards cause emergency situations.

Activity 1: Storm Watch

This small-group activity guides students through a collaborative research project using a variety of online resources (webpages, maps, animations, and videos). Assign some groups to research hurricanes and others to research tornadoes. When they have completed their research, have each group report its findings in a class discussion. Use a chalkboard, whiteboard, or butcher paper to create a chart comparing

the location, causes, and safety facts for these two types of violent storms. (Note: You can download a larger map for the location part of this activity at nationalatlas.gov/printable/images/pdf/outline/states.pdf.)

Activity 2: On the Edge

This activity introduces students to the science of plate tectonics and explains how the movement of tectonic plates causes earthquakes and creates the conditions for volcanoes. Students then conceptualize a very basic model that shows these geologic forces at work and collaborate in small groups to create a working model to share with the class. For modeling ideas, see <http://wordpress.up.edu/totle/2012/09/earthquake-machine> and <http://volcano.oregonstate.edu/education/models/index.html>.

Activity 3: Designed for Safety

This activity challenges students to come up with engineering ideas that could reduce the damage to homes and cities caused by hurricanes, tornadoes, and earthquakes. The activity sheet briefly reviews some design concepts that engineers have explored already. For added inspiration, take students to <http://webcoist.momtastic.com/2011/04/22/disaster-proof-architecture-13-super-strong-structures> and <http://earthquake.usgs.gov/learn/publications/saferstructures>.

Emergency Preparedness

Conclude the program by reviewing the emergency preparedness information provided on each activity sheet and on the American Red Cross website at redcross.org/prepare/disaster. For hazards that happen in your state, practice the protective actions recommended by the Red Cross, and encourage your students to share what they learn about being prepared for emergencies with everyone in their home.

Resources

- CDC, cdc.gov/learning
- FEMA, ready.gov/kids
- NFPA, firewise.org
- NOAAWATCH, www.noaawatch.gov
- USGS Education, education.usgs.gov
- American Red Cross, redcross.org/prepare



The Pillowcase Project

Learn. Practice. Share.