

Lesson 7: Wild Weather

Getting Started

? Questions to Explore

- How does the weather affect living things?
- Why do we study and observe the weather?
- How and why does the weather change?
- What makes weather safe/unsafe?



Facts and Definitions

- A **hurricane** is a very large storm that usually starts in the ocean with strong winds and heavy rains.
- A **tornado** is a violent windstorm in the shape of a funnel.
- Tornadoes and hurricanes can be dangerous and can cause damage.
- There are warning signs for tornadoes, hurricanes, and flash floods.



Skills

- Identify how natural hazards impact communities. (S)



Materials

- *The Kids' Book of Weather Forecasting* by Mark Breen and Kathleen Friestad
- food coloring (kit)
- colored pencils or markers
- tornado adapter (kit) or duct tape
- empty box or bag
- water bottles (kit)

Introduction

Ask your child how weather might be dangerous. What are some examples of dangerous weather?

Reminder:

1. Fill out your weather log each day as outlined in Lesson 1.
2. Record the air pressure as outlined in Lesson 2.
3. Take four temperature readings during the day for the daily temperature experiment as outlined in Lesson 3. This should be your 5th and final entry.
4. Record the speed and direction of the wind as outlined in Lesson 4.

Activities

Reading and Questions

Have your child read the following pages in *The Kids' Book of Weather Forecasting* before answering the questions:

pp. 96-98 (covers thunderstorms)

p. 102 (covers floods and drought)

p. 104 (covers snowstorms)

pp. 106-107 (covers tornadoes)

p. 110 (covers hurricanes)

1. What is the most common type of storm?

Thunderstorms (or thunder-and-lightning storms)

2. Have you ever had violent weather in your community? If so, explain.

Answers will vary.

3. What is the name for a heavy snowstorm with high winds and low temperatures?

A blizzard

4. Explain how a tornado forms.

During a thunderstorm, rising air currents can form columns of air that begin rotating or spinning very quickly. A column that reaches the ground is called a tornado.

5. What is the difference between a tropical storm and a hurricane?

Wind speed. (The winds in a tropical storm are 40-73 mph while a hurricane's winds are 74 mph or more.)

Activity 1: Tornadoes

Help your child with the following directions to create a tornado. If your child has trouble creating a vortex, show her the video.

1. Fill a bottle just over halfway with water (and add 3 to 4 drops of food coloring).
2. Use the duct tape or tornado adapter to connect your two bottles (placing the empty bottle on top).
3. Flip the attached bottles so the bottle with water is now on top.
4. Move the bottle on top rapidly in a circular motion. After a few seconds, you should see the water begin swirling and a tornado form. Now let's enjoy the tornado as it moves through your bottles!

NOTE: Save the water bottles from this activity for Unit 1 Environments Change Lesson 6.



How to Make a Tornado in a Bottle

www.beyondthepage.com/link/12859/

If needed, your child can watch this demonstration to see how to shake the bottle. The beginning of the video also explains how tornados form. She can stop at the 1:35 mark.

Activity 2: Disastrous Weather

Go online and look at pictures of the damage caused by hurricanes, tornadoes, blizzards, or thunder-and-lightning storms. Two links are provided. Discuss how this type of weather can damage homes and trees and even cause people to lose their lives. Ask your child to think about what she would miss most if she lost her home due to dangerous weather. Pretend to create a care package for a child who has lost his or her home due to a tornado, flood, or hurricane. Give your child an empty box or bag to fill, and then ask her to explain why she selected each item.



Wikimedia Commons - Tornado

www.beyondthepage.com/link/12860/

This page has many pictures of actual tornadoes and the devastation that they leave in their wake.



Wikimedia Commons - Hurricanes

www.beyondthepage.com/link/12861/

This site has pictures of hurricanes, hurricane paths, and the devastation of hurricanes. (The page is called "Tropical Cyclones," which is another name for hurricanes.)

Optional Extension: Disaster Relief

If your child or family is interested, you may wish to find out how you can get involved in disaster relief organizations in your local community. Alternatively, help your child do a search for "disaster kit donation." There are organizations that provide opportunities to donate money for kits, or to build and donate kits yourself.

Activity 3: Safety Plan

Ask your child to read "Better Stay Tuned!" on p. 109 of *The Kids' Book of Weather Forecasting*. Next, ask her to read the "Lightning Safety Rules" on p. 99 and then review the tips for tornadoes, floods, and hurricanes on the "Severe Weather Safety Rules" activity page. Discuss the difference between a flood and a flash flood. A flash flood occurs when heavy rains collect in a stream or river, turning a calm area into an instant rushing current. A flash flood occurs quickly and with little warning.

For this activity, review examples of dangerous weather that can occur in the region where you live. Ask your child to develop a safety plan specifically for her family in case of dangerous weather. Her plan should outline steps for the family to follow in case of dangerous weather. Let her decide which disaster would be most likely in her region of the country. She can illustrate or draw a symbol for each step of her plan.

For example, for a tornado safety plan, she might write, "Step 1: Go to the playroom in the basement." And she could draw a picture of stairs with an arrow pointing downward. Let her share the safety plan with the family. Then, the family members can do a drill to practice what they would do if dangerous weather were to occur.

Wrapping Up

Ask your child to give examples of dangerous weather, warning signs in the environment, and safety tips for what to do when dangerous weather occurs. Ask, "Which type of weather do you think is more dangerous? Why?"

Life Application

Encourage your child to share with others what she's learned about dangerous weather and how people can protect themselves during it.

Severe Weather Safety Rules

Tornado Safety

- Find a sturdy shelter (a basement or cellar is ideal).
- If you are in a building, move up against the walls in case something above you crashes in.
- Put a book over your head or get under a sturdy piece of furniture or grab a mattress and get underneath it.
- If you don't have a basement, get in the bathtub with the mattress over your head.
- Try to have a flashlight and battery-powered radio handy in case you lose electricity.
- If you are in a car, go immediately to the nearest building.
- If you are far away from any buildings, try to find a ditch or low-lying area to lie in.



Flash Flood Safety

- Get to the highest ground possible.
- Do not drive across flowing water with your car (even if it looks okay).
- If your vehicle stalls in water, get out immediately and find higher ground.
- Do not camp along streams or rivers during threatening conditions.
- Do not cross flowing water that is above your knees.
- Do not go near storm drains during or after heavy rains.



Hurricane Safety

- Stock up on canned food and bottled water.
- Fill up your car's gas tank.
- Cover all the windows of your home with shutters or plywood if possible.
- Evacuate your home if advised.
- Stay inside away from windows.
- Even if the weather is calm, the storm might not be over.
- Be on the alert for tornadoes.

