



Hurricanes K-2

Hurricane Science



Visit the American Red Cross Web site
at www.redcross.org/disaster/masters

LESSON PLAN 1

What Are Hurricanes?

Young children will know better what to expect of an approaching hurricane if they understand what a hurricane is and the weather associated with it.

Key Terms and Concepts

clouds
direction

hurricane
rain

spiral
winds

Purpose

To help the students and their families understand hurricanes and the types of weather associated with them

Objectives

The students will—

- Simulate the movement and weather associated with a hurricane through a cooperative class movement activity.
- Demonstrate the changing force and spiraling motion of winds and use *Spiral Clouds* to illustrate the concept.
- Compare their hurricane artwork to family stories or experiences with hurricanes and other large windstorms. (Home Connection)
- Make a list of words, phrases and sounds associated with hurricanes and use *Spiral Clouds* to create picture poems. (Linking Across the Curriculum)
- Use measuring sticks to mark, measure and compare the distances cotton balls are blown and relate these to wind force. (Linking Across the Curriculum)
- Create pictures to illustrate the spiral movement of hurricanes (Linking Across the Curriculum)
- Draw and write about a hurricane's spiral clouds as they listen to storm music. (Linking Across the Curriculum)
- Share drawings and writings. (Home Connection)
- Use an activity on the Internet to learn about the factors that influence the development of a hurricane. (Linking Across the Curriculum)

Activities

- “Hurricane Movement”
- “Hurricane Wind Power”



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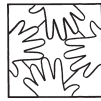
What Are Hurricanes?

Materials

- Large, clear area for movement
- Chalk and chalkboard or poster paper and markers



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"Hurricane Movement"

SET UP 10 minutes CONDUCT 30 minutes

Science: Physical Science and Earth Science; Language Arts: Research

TEACHING NOTE You may want to begin the following activities with a KWL chart. The purpose of the KWL (what you **K**now, what you **W**ant to know, what you have **L**earned) is for the teacher to ascertain students' previous knowledge about a particular subject, in this case, hurricanes.

Example:

Teacher: Today we will talk about hurricanes. Someone tell me something about hurricanes, and we will put it in our chart.

Student: I know hurricanes make big waves.

You will continue to list more items about what the students know and what they want to know. After the lesson, go back to the chart and fill in what was learned.

Know	Want to know	Learned
Hurricanes make big waves.		

To demonstrate how a hurricane moves—

1. Work with the whole class or divide the class into groups of at least 10 students each.
2. In a large, clear area with plenty of space for movement, have the students form a circle and interlock their elbows.
3. Have one student drop elbows and begin to lead the rest of the class, walking in smaller circles inside the circle, to form a moving spiral.
4. As the students continue to walk within the spiral, explain that they are moving in the same way that hurricane clouds move.
5. As they walk, ask them to wiggle their fingers to simulate the rains of the hurricane clouds.
6. While they continue their spiral cloud and rain movements, direct them to "walk" the spiral slowly in different directions—toward you or away from you.
7. Have the students add wind sounds and shuffle their feet to simulate the sound of rain.
8. Discuss how their movements mimicked the winds and rains of a hurricane.



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Wrap-Up

Invite students to suggest things about hurricanes they learned from this exercise and what more they would like to know. You may want to use a concept organizer to help them identify holes in their knowledge that they would like to fill.



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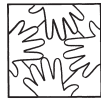
What Are Hurricanes?

Materials

- Cotton balls, several per student
- Smooth surface on table or floor
- Chalk
- *Spiral Clouds*, 1 copy per student



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"Hurricane Wind Power"

SET UP 15 minutes CONDUCT 30 minutes

Science: Physical Science, Earth Science and Inquiry; Fine Arts: Visual Arts

1. Divide the class into small groups of two to four students. Give each group a cotton ball. Instruct each group to place the cotton ball on the flat, smooth surface of a table or floor.
2. Have one student in each group blow as softly as possible on the cotton ball. Ask the others to use the chalk to mark where the cotton ball stops.
3. Ask another student to blow just a little harder and mark where the cotton ball stops. How much farther did the ball roll? How much faster did the ball move? Why?
4. Continue having the students increase the "hurricane" winds and compare distance and speed, until they are blowing as hard as they can. Discuss with the students the changing force of winds.
5. Use the cotton ball activity to connect the concept of the spiraling motion of hurricane clouds to the speed of hurricane winds. Gather six to eight students around a table. Place six to eight cotton balls in a circle in the center of the table. Have the students blow, with approximately the same power, toward the cotton balls. The balls will begin to rotate like hurricane clouds.
 - Why do students think the cotton balls stayed on the table rather than taking off in different directions?
 - Sometimes upper level winds in the atmosphere are strong enough to break up the rotating winds, causing the hurricane to lose force. Ask students to suggest ways they can change the rotating cotton ball experiment to show this phenomenon.



Wrap-Up

Distribute *Spiral Clouds* and several cotton balls to each student. Ask them to stretch the cotton balls into thin lengths of cotton and glue them on the spiral lines of the hurricane sketch to show the spiral movement of hurricane clouds. Have the students describe hurricane winds, rain and movement. Depending on their ages and abilities, have them either dictate the description or write it on the back of the activity sheet or a separate sheet of paper.



Hurricanes

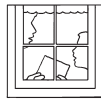
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What Are Hurricanes?

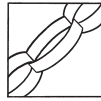


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Home Connection

Have the children share their artwork and writing about the hurricanes at home. They can ask their parents to help them compare family stories or experiences with hurricanes or other large wind-storms with what they have learned about hurricanes.



Linking Across the Curriculum

Language Arts: Writing

Distribute *Spiral Clouds*. Lead the students in compiling a list of words, phrases and sounds associated with hurricanes, such as roaring winds, rains, whoosh, crack and falling branches. Have the students write the words around the spiral on the activity sheet to create picture poetry. Cut out the students' picture poems and hang them around the room.

Fine Arts: Visual Arts; Music

Have the students draw or paint spiral clouds and representations of wind to the sound of storm music. (Examples: *A Night on Bald Mountain* by Modest Mussorgsky [arranged by Rimsky-Korsakov]; the Storm Movement from Ludwig van Beethoven's Symphony No. 6; or Beethoven's piano sonata *The Tempest*.)

Mathematics: Measurement

You will need measuring sticks for this activity.

Have the students use measuring sticks to mark, measure and compare the distances that the cotton balls travel in the "Hurricane Wind Power" activity.

Science: Physical Science; Earth Science



Advanced students who want to know more about hurricanes can access the Create a Cane site from the National Oceanic and Atmospheric Administration at <http://www.nhc.noaa.gov/HAW2/pdf/canelab.htm>. As students try to create the ideal conditions for a hurricane, they will learn about four influencing factors: wind strength at three altitude levels, sea temperature, latitude and moisture in the atmospheric layers.



Spiral Clouds

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Name _____

Directions: Stretch out the cotton balls. Then, glue the cotton to the page in the direction of the arrows to show how hurricanes spiral.

