

Responding to Patterns of Change

Materials List

Chapter 1, What Causes Weather Patterns?

Engage Materials

For the entire class:

- 2 large glass containers (for example, fishbowls)
- 1 sheet of plastic wrap (large enough to cover 1 glass container)
- 1 large rubber band
- a supply of water
- 1 bottle of food coloring
- 1 desk lamp with a 60 or 75 W lightbulb
- clock with a second hand that is visible to all students

For each class of 30 students, teams of 3:

- water at room temperature (approximately 2 L total for class)
- 10 empty soup cans with labels removed
- 10 stirring sticks
- 1 bag of ice (5 lb) or 40 ice cubes
- 1 cooler for storing the ice (optional)
- 10 paper towels

Explore Materials

For the entire class:

- 1 fire extinguisher

For each team of 3 students:

- 1 convection box (see Advance Preparation)
- 1 votive candle (short, thick candle) with a holder
- 1 box of safety matches
- 6 wooden splints
- 1 container of water for holding used splints
- 3 pairs of safety goggles
- pens or pencils of different colors

For 10 convection boxes:

- 10 shoe boxes
- 20 toilet paper tubes (see alternative instructions in Advance Preparation)
- 10 sheets of black construction paper
- 1 metric ruler
- 1 pair of scissors
- 1 roll of aluminum foil
- 1 roll of plastic wrap
- 1 roll of transparent tape

Explain Materials

For each student:

pens or pencils of different colors

For the demonstration:

- 4 pint-sized jars with equal-sized mouths
- 1 L of warm water in a thermos (2 jars' worth)
- 1 L of extremely cold (1–3°C) water in a thermos (2 jars' worth)
- 2 index cards, large enough to cover the jars' mouths (e.g., 4 × 6 in.), laminated
- 1 bottle of red food coloring
- 1 dishpan (for holding the jars during the demonstration)

Elaborate Materials

Part I: Wind and Earth's Rotation

For each team of 3 students:

- 1 square of corrugated cardboard, at least 25 × 25 cm (10 × 10 in.)
- 1 pencil or pen
- 1 sheet of 8½ × 11 in. paper
- 1 5 cm strip of masking tape
- 2 felt-tipped pens, different colors
- 1 30 cm (12 in.) ruler
- 1 pair of scissors
- pens or pencils of different colors

Evaluate Materials

none