The Ups and Downs of Weather

A Carolina Essentials™ Demonstration

Student Worksheet

Essential Question

How do temperature, pressure, and the Coriolis effect drive weather?

Data and Observations

Make detailed observations of the initial setup and final results. You may include sketches. Then answer the discussion questions as directed by your teacher.

Observations Part 1: Temperature

Discussion Part 1: Temperature

1. What phase changes were illustrated in the temperature demonstrations?

2. What weather phenomenon is illustrated by this demonstration?

Observations Part 2: Pressure

Continued on the next page.

Discussion Part 2: Pressure

1. What phase changes were illustrated in the pressure demonstrations?

2. What did squeezing the bottle do to the air inside the bottle?

3. What did releasing the bottle do to the air inside the bottle?

4. What weather phenomenon is illustrated by this demonstration?

Observations Part 3: Convection Currents

Discussion Part 3: Convection Currents

1. How did each color of water move?

2. Why do the colors tend to form layers?

3. If the tank was left undisturbed for a long period, what would the color of the water be? Why?

4. What principle does the tank illustrate?

5. Should the principle work the same in air (gas) as it does in water (liquid)?

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Observations Part 4: Coriolis Effect

Discussion Part 4: Coriolis Effect

1. In the northern hemisphere, which way was the straight line deflected?

2. In the southern hemisphere, which way was the straight line deflected?