Name Period Date

Unit	Handout
4	6

Lesson 2: Vortices

Purpose:	Model the formation of cyclonic storms.
Guiding Questions:	How are vortices connected to storms?

Directions. Complete each step below.

1. Follow step 4 on p. 23 of the Weather and Climate textbook. Write your observation in the space below.

2. Why do you believe this happened?

3. Follow step 5 on p. 23. What did you do to get the water to flow (constant, uninterrupted stream) into the bottom bottle?

4. Create a vortex in your bottle by swirling it when you start. How do you create different sized vortexes in your bottle?

5. How does the amount of time it takes to drain the top bottle depend on the size of the vortex? Record the time it takes and write your findings in the space below.

6. Follow step 6 on p. 25 and answer questions a and b.

   a. Where is most of the glitter?

   b. Where is the movement of the glitter the fastest? Where is it the slowest?

Analysis. Answer the following questions.

1. Look at the figure 2.3 on p. 26. Why did the vortex allow water to quickly drain into the bottom bottle (as compared when we just turned the bottle over)?

2. Looking at the diagrams on p. 26. Do the hurricane and tornado have similar vortexes? Discuss you ideas in the space below. (Consider where the warm/cold air are found in a tornado and a hurricane.)

3. How is movement of air in our model different from the movement of air in a tornado or a hurricane?

4. Read the reading selection on pp. 24-25. What is/are the difference(s) between a tornado watch and a tornado warning?

5. Write a working definition of the term vortex, based on what you observed in this investigation. (This means don't look it up; create your own definition.)