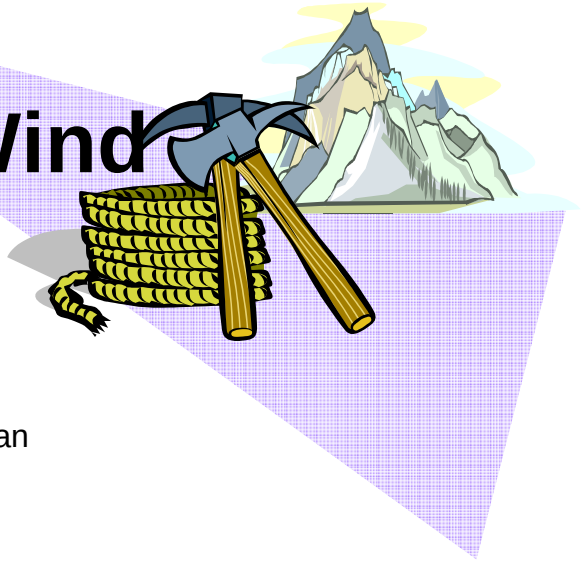
ES – Activity #1

Blowing in the Wind



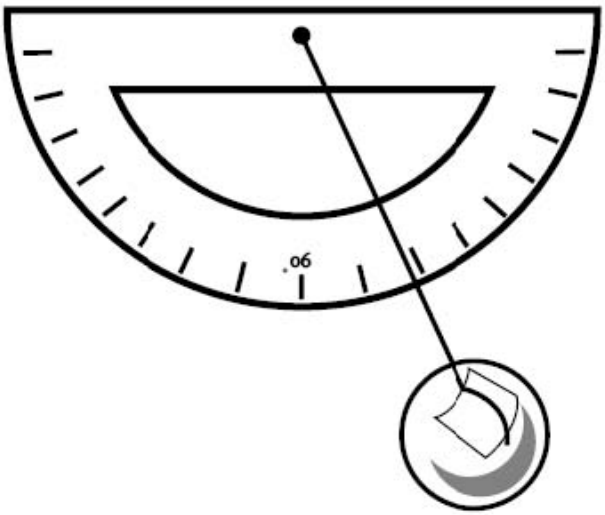
QUESTION: How can wind speed be measured?

MATERIALS:

kite string	ping pong ball
packaging tape	protractor
pens	variable speed fan

PROCEDURE:

1. Cut a one-foot length of string.
2. Tape one end of the string to a ping-pong ball, and tie or tape the other to the small hole at the center of the protractor's flat edge (see figure below).
3. Label the protractor as follows:
   - mark the 90° mark of the protractor "0 mph"
   - mark the 80° mark of the protractor "8 mph"
   - mark the 70° mark of the protractor "12 mph"
   - mark the 60° mark of the protractor "15 mph"
   - mark the 50° mark of the protractor "18 mph"
   - mark the 40° mark of the protractor "21 mph"
   - mark the 30° mark of the protractor "26 mph"
   - mark the 20° mark of the protractor "33 mph"
4. To use this anemometer, hold it with the flat base at the top, so it's level. The ping-pong ball should hang straight down.
5. Turn the fan on low. Keep the protractor about 50 cm from the fan and as far from your body as you can, so you're not blocking any of the wind. Aim the protractor so the ping-pong ball is blown along the side of the protractor, not into or away from it. Measure the wind's speed by seeing which degree mark the string is pointing at. Record the wind speed in the data table.
6. Repeat step 5 two more times.
7. Repeat steps 5 and 6 with each of the settings on the fan.
8. When you have a windy day, use your anemometer to measure the real wind speed and record it in the data section.



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DATA:

FAN SETTING	TRIAL	WIND SPEED
Low	1	
Low	2	
Low	3	
Medium	1	
Medium	2	
Medium	3	
High	1	
High	2	
High	3	

QUESTIONS:

1. What does an anemometer do?

2. How is the wind produced from a fan different from the natural wind?

3. What scale do scientists use to measure the wind?

4. Scientists classify tornadoes as class F1 - F5. They classify hurricanes as Category 1 - Category 5. How does an F1 tornado compare to a Category 1hurricane? How does an F5 tornado compare to a Category 5 hurricane?

5. Which cause more damage, tornados or hurricanes? Why?