

Name \_\_\_\_\_

Date \_\_\_\_\_

## Instruments That Measure Weather

Cut apart each card. Match the description on each card to one of the illustrations of an instrument that measures weather. Glue the matching cards together until you have a full deck of eleven cards.

### *Instrument 1*

- Measures heat content of air
- Measures in Celsius or Fahrenheit
- Measurement usually taken 5 feet above ground in a shelter
- Liquid expands or contracts causing it to move up and down a tube

### *Instrument 2*

- Measures air pressure
- Weighs the amount of air in a specific place
- Usually measures between 28-31 inches of mercury
- A falling measurement usually means a storm is approaching

### *Instrument 3*

- Measures humidity or amount of water vapor in the air
- Measures absolute (the amount of water vapor in a unit volume of air) or relative (the ratio of moisture in the atmosphere to the maximum moisture the atmosphere can hold) humidity
- Humans feel comfortable with a relative humidity between 30% and 60%

### *Instrument 4*

- Measures wind speed or velocity
- Measures the strength of air's motion
- Measured 33 feet above ground level on buildings or airports
- Several cups catch the wind and spin around a pole
- Measured by the number of revolutions over a set period of time

### *Instrument 5*

- Measures rain or snow over a set period of time
- Usually measured in millimeters but reported in inches
- Limitations include: collection during high wind events such as hurricanes can be unreliable; freezing temperatures can cause the funnel to freeze, preventing subsequent precipitation from collecting
- Variety of types

### *Instrument 6*

- Measures relative humidity using the cooling effect of evaporation
- Made of two thermometers mounted together, one with a wet cloth wick over the bulb
- Differences in readings determine relative humidity the greater the difference in readings, the less relative humidity



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## Instruments That Measure Weather, continued

### *Instrument 7*

- Determines direction from which wind is blowing
- Weight is evenly distributed on each side, but the surface area is unevenly divided with the pointer always on the side with the smaller surface area
- Not always reliable in small, gentle winds

### *Instrument 8*

- Used to photograph and track large-scale air movements
- May use infrared cameras to determine relative warmth of objects
- Can be polar orbiting or geo-stationary

### *Instrument 9*

- Measure is subjective
- Can be very descriptive
- Not quantifiable
- Provides additional perspective

### *Instrument 10*

- The measure of the distance something can be seen without distortion
- Measurements of less than 330 feet usually reported as zero
- Measurements usually reported in miles or meters

### *Instrument 11*

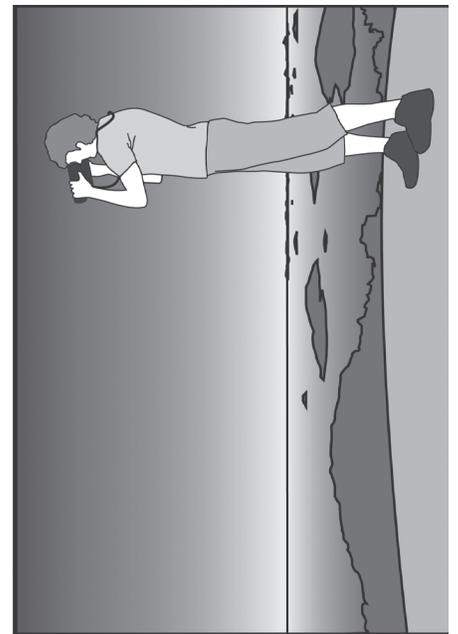
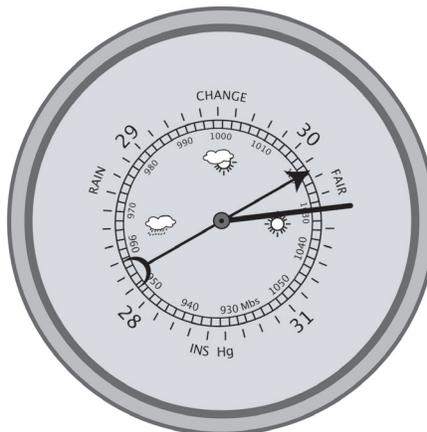
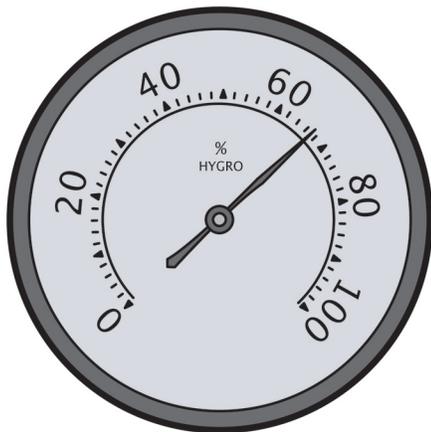
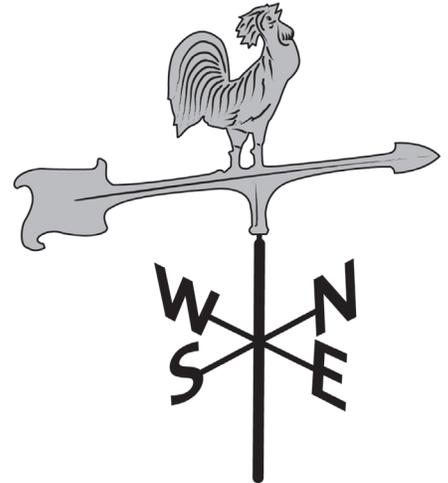
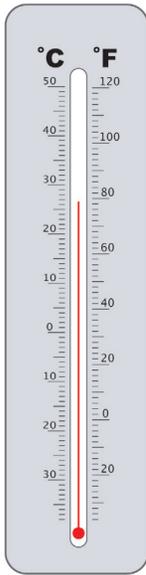
- Measures solar radiation
- Placed on a flat surface to gain exposure to the full electromagnetic spectrum
- The more sunlight that strikes it, the more energy it produces



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