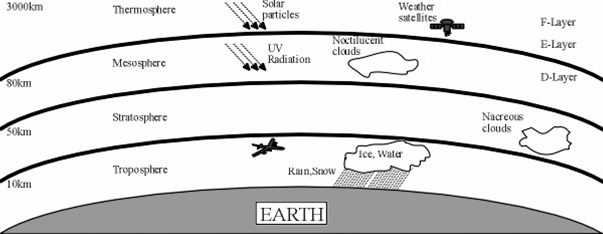
**Weather**

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_

Weather affects our lives each and every day; what we wear, where we go, do we have school or not? Every decision can be affected by the weather. We ask the meteorologist to forecast (predict) the weather; sometimes they are right and sometimes they are wrong. Forecasting the weather is no easy task.

**Weather**-describes the conditions in the atmosphere (mostly the troposphere the lowest layer of the atmosphere) at a given place for a short period of time

**Weather –** is caused by the uneven heating of the earth by the Sun’s rays



**Questions:** Answer in complete sentences

1. What is weather? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What causes weather? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. In what layer of the earth’s atmosphere does most weather occur?
   1. Stratosphere
   2. Troposphere
   3. Mesosphere

**Weather Variables**

The change in weather is described by a series of **weather variables.** These weather variables include **Air Temperature, Air Pressure, Humidity, Wind Speed, Wind Direction, and Precipitation**

**Air Temperature-**the amount of heat energy in the atmosphere at a place

**Air Pressure-** is the amount of force exerted by the air hitting a given surface area

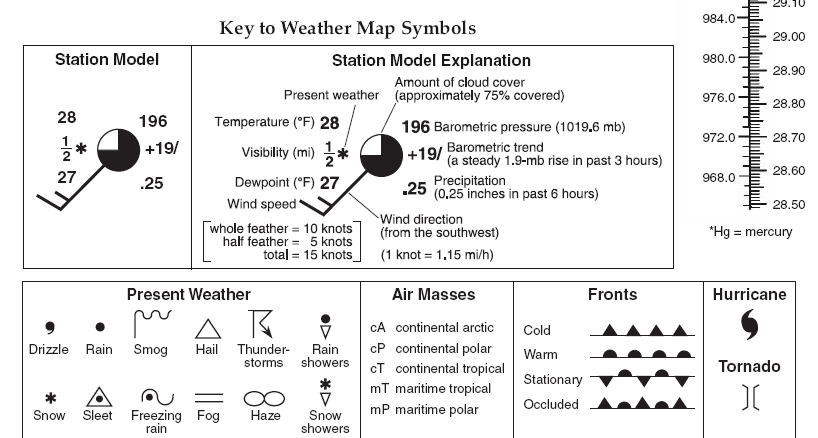
**Humidity-** the amount of water vapor in the air

**Wind Speed-**the rate of moving air

**Wind Direction-** the direction that the wind blows **FROM**

**Precipitation-**failing moisture from clouds (Rain, Snow, Sleet, and Hail)

Scientists communicate weather in different locations using the **station model**.



**On the station model above identify the following weather variables:**

1. Temperature\_\_\_\_\_\_\_\_0F
2. Air Pressure\_\_\_\_\_\_\_mb
3. Wind Speed\_\_\_\_\_\_\_ knots
4. Wind Direction\_\_\_\_\_\_\_

|  |  |  |  |
| --- | --- | --- | --- |
| **Weather Variable** | **Definition** | **Units** | **Instrument** |
| **Air Temperature** | The amount of heat energy in the atmosphere as a place | 0F (Fahrenheit) or  0C (Celsius) | **Thermometer**  [hiresthermometerslidergb](http://www.google.com/imgres?imgurl=http://www.abcteach.com/free/h/hiresthermometerslidergb.jpg&imgrefurl=http://www.abcteach.com/directory/clip_art/science/weights_and_measures/&usg=__srxy8aEPYKws-GGGuoEoi4BOo88=&h=1501&w=1589&sz=388&hl=en&start=4&sig2=9GaCWwIBu3tpLloRbu_jxA&um=1&itbs=1&tbnid=j6DJ2oyr6fEiIM:&tbnh=142&tbnw=150&prev=/images%3Fq%3Dthermometer%2Bclip%26um%3D1%26hl%3Den%26rlz%3D1I7GGLL_en%26as_st%3Dy%26tbs%3Disch:1&ei=P2zUS_eRJsP58AaA7P2yDw) |
| **Air Pressure** | The amount of force exerted by the air hitting a given surface area | millibars (mb) | **Barometer**  10-10-08_R18BW |
| **Humidity** | The amount of water vapor in the air | Relative Humidity expressed in percent % | **Sling Psychrometer** |
| **Wind Speed** | Moving air | Knots or miles per hour (K or mph) | **Anemometer**  [Mechanical_Movements_Anemometer_2](http://www.google.com/imgres?imgurl=http://knowledgepublications.com/history/images/Mechanical_Movements_Anemometer_2.gif&imgrefurl=http://knowledgepublications.com/history/mechanical_movements_detail.htm&usg=__h1koR_sEWfjW-ZHw5HY3IOylUbs=&h=383&w=445&sz=8&hl=en&start=2&sig2=luRp7vq7d8yK-F41gP1z9A&um=1&itbs=1&tbnid=0xOKBNtqXrvdxM:&tbnh=109&tbnw=127&prev=/images%3Fq%3Danemometer%2Bclip%2Bart%26um%3D1%26hl%3Den%26rlz%3D1I7GGLL_en%26as_st%3Dy%26ndsp%3D20%26tbs%3Disch:1&ei=FG3US6HRHcH58AbD082jDw) |
| **Wind Direction** | The direction that the wind is blowing **FROM** | North, East, South, West | **Wind Vane**  [vane_19137_lg](http://www.google.com/imgres?imgurl=http://etc.usf.edu/clipart/19100/19137/vane_19137_lg.gif&imgrefurl=http://etc.usf.edu/clipart/19100/19137/vane_19137.htm&usg=__P18nI4yEQgDqF074OfvspcrTWcc=&h=700&w=632&sz=30&hl=en&start=4&sig2=LLdHUpDVp-AFopSQt-fZsg&um=1&itbs=1&tbnid=PsM6F_WX2EUoBM:&tbnh=140&tbnw=126&prev=/images%3Fq%3Dwind%2Bvane%2Bclip%2Bart%26um%3D1%26hl%3Den%26sa%3DX%26rlz%3D1I7GGLL_en%26as_st%3Dy%26tbs%3Disch:1&ei=R23US-GUMMP48Aa16KSzDw) |
| **Precipitation** | Forms of water that fall from clouds example: **Rain, snow, sleet, hail, or freezing rain** | Inches, or centimeters | **Rain gauge**  [rain_gauge_19583_mth](http://www.google.com/imgres?imgurl=http://etc.usf.edu/clipart/19500/19583/rain_gauge_19583_mth.gif&imgrefurl=http://etc.usf.edu/clipart/galleries/science/meteorology.php%3Fpage%3D3%26term%3D&usg=__Hr4PFL0Vir3VDHtTIB2wiZrSs8s=&h=145&w=150&sz=3&hl=en&start=44&sig2=r5rjGGsjiZttCAf9JFZECA&um=1&itbs=1&tbnid=7L7iVWS6_gKVUM:&tbnh=93&tbnw=96&prev=/images%3Fq%3Drain%2Bgauge%2Bclip%2Bart%26start%3D40%26um%3D1%26hl%3Den%26sa%3DN%26rlz%3D1I7GGLL_en%26as_st%3Dy%26ndsp%3D20%26tbs%3Disch:1&ei=eW3US6qWOMH48AbOr9m3Dw) |