**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 |
| **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 |
| **Wind Direction** | The direction that the wind is blowing **FROM** | North, East, South, West  | **Wind Vane** vane_19137_lg |
| **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 |