Earth Science 11 **Name:_____**

Date_____ Blk:____

What's the Difference Between Weather and Climate? (Filled In)

The **difference** between weather and climate is a measure of time. **Weather** is what conditions of the atmosphere are over a short period of time, and **climate** is how the atmosphere "behaves" over relatively long periods of time.

What Weather Means

Weather is basically the way the **atmosphere** is behaving. The difference between weather and climate is that weather consists of the **short-term** (minutes to months) changes in the atmosphere.

In most places, weather can change from minute-to-minute, hour-to-hour, day-to-day, and season-to-season. Climate, however, is the **average** of weather over time An easy way to remember the difference is that **climate** is what you expect, like a very hot summer, and **weather** is what you get, like a hot day with pop-up thunderstorms.

What Climate Means

In short, climate is the description of the **long-term** pattern of weather in a particular area.

Some scientists define climate as the average weather, usually taken over **30-years**. It's really an average pattern of weather for a particular region.

When scientists talk about climate, they're looking at averages of precipitation, temperature, humidity, sunshine, wind velocity, phenomena such as fog, frost, and hail storms, and other measures of the weather that occur over a long period in a particular place.

For example, after looking at rain gauge data, lake and reservoir levels, and satellite data, scientists can tell if during a summer, an area was **drier** than average. If it **continues** to be drier than normal over the course of many summers, than it would likely indicate a **change** in the climate.

Why Study Climate?

The reason studying climate and a changing climate is important, is that will affect people **around the world.** Rising global temperatures are expected to raise sea levels, and **change** precipitation and other **local** climate conditions. Changing regional climate could alter forests, crop yields, and **water supplies**. It could also affect human health, **animals**, and many types of ecosystems.

The National Academy of Sciences, a lead scientific body in the U.S., determined that the Earth's surface temperature **has risen** by about 1 degree Fahrenheit in the past **century**, with accelerated warming during the past **two decades**. There is new and stronger evidence that most of the warming over the last 50 years is attributable to human activities. Yet, there is still some **debate** about the role of natural cycles and processes.