

Weather Patterns

Seasonal Weather Patterns

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Most places on Earth have four different seasons each year: autumn, winter, spring, and summer. Weather patterns for each season in a particular place can be affected by the time of year and the distance of the place from the equator.



Autumn



Winter



Spring



Summer

Season Characteristics

Each season has a characteristic type of weather, and plants and animals act differently during the different seasons.

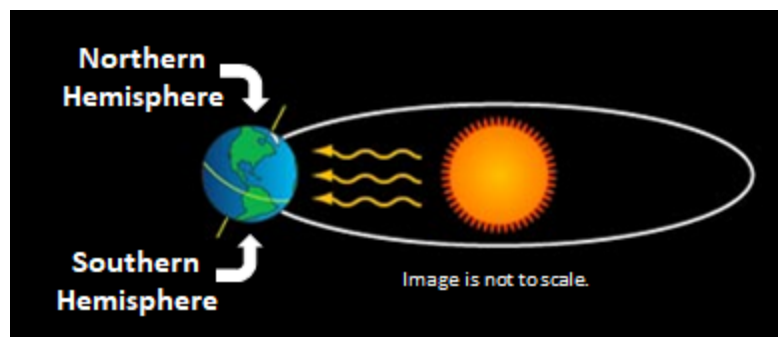
- **Autumn**—In autumn (fall), nights are usually cool, and days are warm. The number of daylight hours decreases in autumn. The leaves of many trees turn bright colors and then fall to the ground. Animals begin to get ready for colder weather. In many places, it also becomes rainier during the autumn.
- **Winter**—Winter is colder than the other seasons. In some places, winter snow is common, and some kinds of trees are bare. The Sun sets early on winter days, so there are fewer hours of daylight. There are fewer animals because many have either hibernated or traveled to a warmer climate for the winter.
- **Spring**—During spring, the days are warmer, and the number of daylight hours increases. Rain and thunderstorms occur often. Many types of animals have babies in the spring. Trees

often have colorful flowers.

- **Summer**—In summer, there are warm or hot days and warm nights. Daylight lasts until late evening during summer. Tree leaves are usually green. In many places, summer is also a very dry season.

Different Hemispheres Experience Different Seasons

Because of the tilt of the Earth as it revolves around the Sun, different parts of the Earth receive different amounts of sunlight. This results in one hemisphere receiving more sunlight and experiencing higher temperatures, and, at the same time, the other hemisphere receiving less sunlight and experiencing lower temperatures.



This image shows the relationship between the Sun and the Earth in June. The Northern Hemisphere is receiving more direct sunlight than the Southern Hemisphere. In June it is summer in the Northern Hemisphere but winter in the Southern Hemisphere.

Modified image courtesy of NASA

Opposite seasons take place in the northern and Southern Hemispheres. For example, if it is autumn in the Northern Hemisphere, it will be spring in the Southern Hemisphere. If it is summer in the Northern Hemisphere, it will be winter in the Southern Hemisphere.

The months that align with each season in the different hemispheres are listed below:

- **September, October, November**— autumn in the Northern Hemisphere; spring in the Southern Hemisphere
- **December, January, February**— winter in the Northern Hemisphere; summer in the Southern Hemisphere
- **March, April, May**— spring in the Northern Hemisphere; autumn in the Southern Hemisphere
- **June, July, August**— summer in the Northern Hemisphere; winter in the Southern Hemisphere

Representing Weather Data

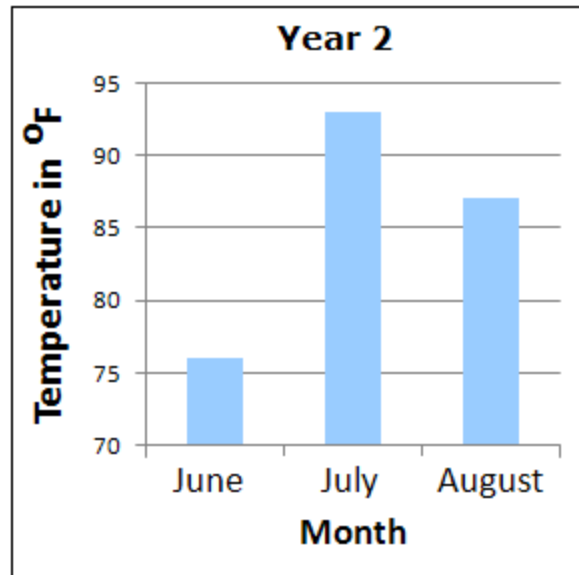
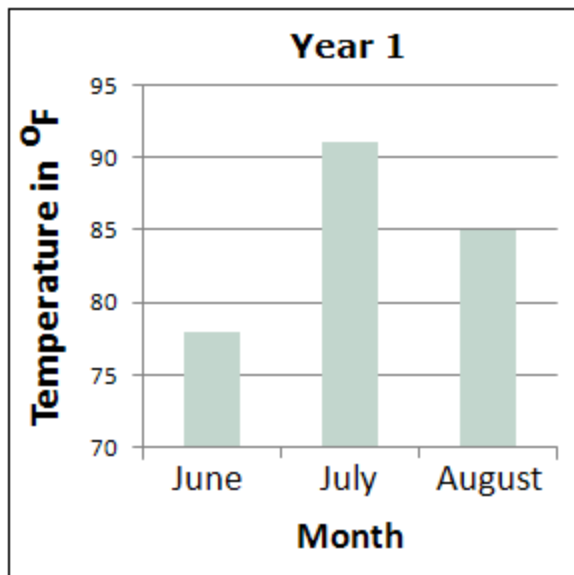
Seasonal weather patterns for a particular place are usually about the same from year to year. Each season happens about the same time each year. Also, temperature and amounts of rain or snow tend to be high, medium, or low in the same months (and seasons) each year. These patterns can be easier to see if weather data is put into graphs or tables.

As one season changes into another, the weather changes too. How the weather begins to change is another type of weather pattern. It is possible to predict changes that will likely take place as seasons change.

Bar graphs

Bar graphs are used to show the amount of something. For example, they can show temperature or amounts of rain or snow.

Example: Look at the graphs of a city's temperature data below.



The graphs show average temperature data for June, July, and August for the last two years. From this information, we can figure out what the weather will probably be like this year at the same time in that same place. The temperature for July in the two years shown was about 91 to 93°F. So, we can guess that next July will also be around 92°F.

Pictographs

Pictographs show pictures in a table. For pictographs, make sure to label each part of the graph. Below the graph, write a sentence that tells what each picture stands for.

Example: Scientists counted the number of rainy days in each season for a town. There were 6 rainy days in spring, 9 rainy days in summer, 9 rainy days in the fall, and 24 rainy days in winter.

The information in a pictograph would look like this.

Rainy Days for Each Season

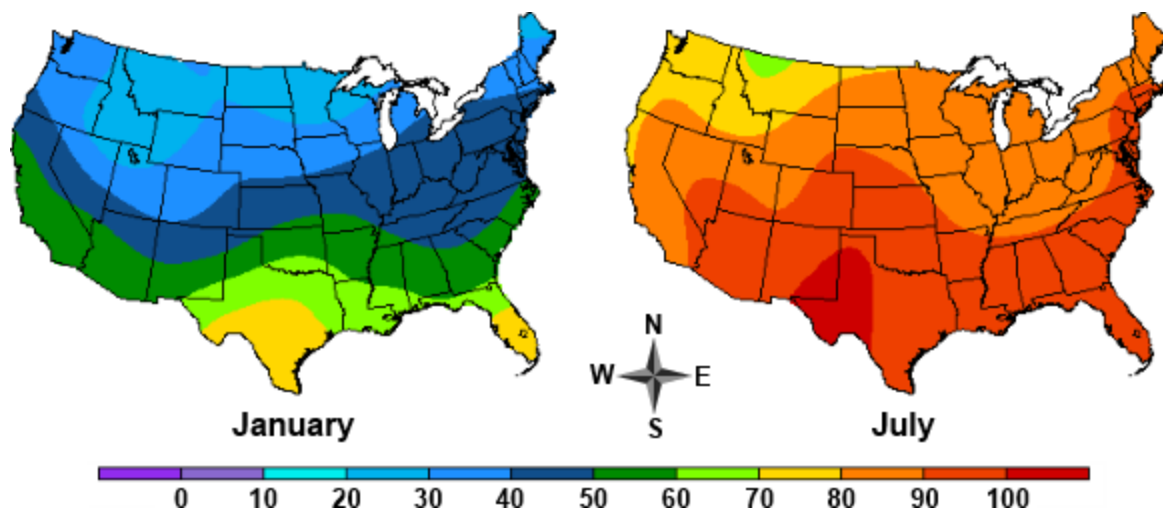
Season	Rainy Days
Spring	 
Summer	  
Fall	  
Winter	       

Each  stands for 3 rainy days.

From the pictograph, we can see that there were a lot more rainy days in the winter than in any other season.

Maps

Maps show weather patterns based on location. The maps below show the temperatures in different parts of the United States in January and in July.



The temperatures shown are measured in degrees Fahrenheit. The temperatures are lower (colder) everywhere on the map in January than they are in July.

Modified image courtesy of NOAA

January is a winter month and July is a summer month. Based on the key at the bottom of the map, all the states shown are colder in the winter than they are in the summer. This is an example of a seasonal weather pattern.

