

Basics of Geography

Factors that influence climate

Introduction

When you think about geography perhaps the first thing that comes to mind is land. You might think of the continents or of the many different land forms found on the earth. Water too might come to mind such as oceans and rivers and lakes. You might also think of the people living on the earth and how their lives are affected by the land and water around them. Certainly the study of geography would have to include land and water for these two things cover all of the surface of the earth but, in addition to land and water, there is another feature geographers consider when studying the earth. This feature is climate. Climate is, simply put, the weather pattern of a region of the world over a long period of time.

The Sun

Many factors influence a region's climate. Perhaps the most important of these is the Sun. The Sun is the source of all light and warmth for every place on earth. However not all places receive the same amount of sunlight. This is because of the way in which the earth moves around the Sun. The earth is constantly in motion, it is continually spinning on its axis, an imaginary line running through the center of the earth from the North Pole to the South Pole. This motion is called rotation. At the same time the earth is rotating on its axis it is also traveling around the Sun. This second movement is called revolution. The amount of time it takes for the earth to make one revolution around the Sun is called a year. The Earth's axis is not straight up and down but tilted. Because of this, as the Earth revolves around the Sun, different parts of the earth are tilted towards the Sun at various times of the year. For example in July the northern hemisphere is facing toward the Sun but half a year later in January it is tilted away from the Sun. This movement of the earth results in the different seasons of the year. When a hemisphere is tilted toward the Sun it receives more direct sunlight. The more sunlight a place gets the warmer it becomes. Of course if one side of the earth is facing toward the Sun the other side must be facing away from the Sun. When a place gets less sunlight the weather becomes colder. So, for example, when it is winter in the northern hemisphere it is summer in the southern hemisphere.

Latitude

There are other factors besides the Sun that determine climate. In some places the weather stays warm year round while in other parts of the world it is cold all the time. One reason for this is latitude. Latitude is the distance a place lies north or south of the Equator, measured by imaginary lines called lines of latitude. There are five latitude lines geographers use in discussing climate. The first one is the equator. Places located near the equator receive large amounts of sunlight all year round and are warmer than other places on earth. 23 and a half degrees north of the Equator is a line of latitude called the Tropic of Cancer. When the northern hemisphere is tilted toward the Sun, sunlight falls directly along this line. When the southern hemisphere is facing the Sun sunlight falls upon another line located 23 and a half degrees south of the

Equator called the Tropic of Capricorn. Areas of the world located between these two lines are called the low latitudes or the tropics. South of the Tropic of Capricorn at 66 and a half degrees south latitude is a line of latitude called the Antarctic Circle. Another line called the Arctic Circle is located north of the Tropic of Cancer at 66 and a half degrees north latitude. The areas between the tropics and these two lines are called the middle latitudes. The Sun never shines directly on these areas, so places located here are cooler than in the tropics. The middle latitudes are also known as the temperate regions. North of the Arctic Circle and south of the Antarctic Circle are the high latitudes where are polar regions. These areas receive the least amount of sunlight so places here are very cold. In fact for half the year these areas get no sunlight at all.

Elevation

Another factor that determines our regions climate is elevation. Elevation is the height of an area above sea level. Generally the higher an area's elevation the colder its climate. Because of this factor snow can be found year-round on top of high mountains even when the weather is warm down below.

Rain

Another important aspect of a region's climate is the amount of precipitation that falls. In some places it rains or snows nearly every day. Other places may be completely dry for most of the year with rain coming only in certain months like during the monsoon season in India.

Wind

Wind too can have an effect on an area's climate depending on from which direction winds blow. They can be either warm or cool. Winds blowing from the tropics carry with them warm air. Similarly winds blowing from polar regions bring cold air.

Water currents

Water currents can act the same as wind currents by carrying warmth or coolness from one part of the world to another. One example of this is the Gulf Stream. The Gulf Stream refers to ocean currents that carry warm water from the Gulf of Mexico to places as far north as Norway. Due to the effect of these water currents even though Norway is located near the Arctic Circle its climate is warmer than that of most places in the polar regions.

Regions

Geographers divide the world into six main climatic regions: tropical, subtropical, temperate, subpolar, polar and highlands. Each of these climatic regions are defined by both temperature and precipitation. For instance places with a subtropical climate would be described as having hot dry summers and cool rainy winters.

Impact on people's lives

Climate has a great impact on people's everyday lives. Among other things that affect what they wear and what kind of houses they live in. People who live in hot climates for instance wear very light clothing but people who live in polar climates such as Inuits wear fur or other warm clothing to protect themselves from the cold. Inuits also live in houses that are well insulated to protect against the arctic air. The people who live in hot climates don't need to worry about insulation. Instead they might build their houses so that cool breezes can get in. Climate not only affect how people live but in large part determines where they live. People may choose to live in a particular place because it has a pleasant climate. Many older people in the United States for example choose to retire to Florida or Arizona because it is warm there year round. Very few people live in places that are too cold such as Antarctica or too hot and dry like the Sahara Desert.