

THE WEATHER

WHAT IS CLIMATE?

Climate is not the same as weather. It is actually the average pattern of weather taking over a 30 year period for a particular region.

CLIMATE SYSTEMS

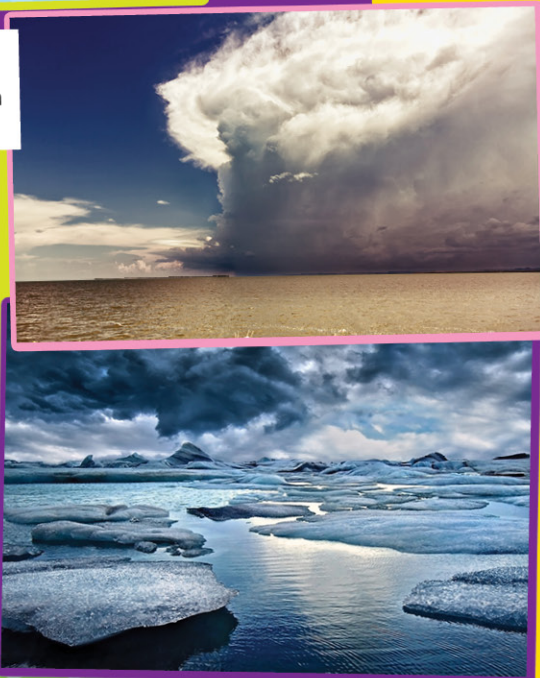
ATMOSPHERE: The atmosphere covers the Earth. It is a thin layer of mixed gases which make up the air we breathe. This thin layer also helps the Earth from becoming too hot or too cold.

OCEANS: 70 percent of the Earth's surface is covered by oceans. Their large size and thermal properties allow them to store a large amount of heat.

LAND: Land covers 27 percent of the Earth's surface. The geography of the land influences the weather patterns.

ICE: This is the world's largest supply of freshwater. It also covers the remaining 3 percent of the Earth's surface. Ice helps to regulate climate because it is highly reflective.

BIOSPHERE: The Biosphere is part of the Earth's atmosphere, land and oceans that helps support all living things. It is where plants, animals and humans live.



WHAT CAUSES WEATHER?

Because the Earth is round and not flat, the Sun's rays don't fall evenly on the land and oceans. In fact the sun shines more directly near the equator, bringing these areas more warmth. The Polar Regions are at such an angle to the Sun that they get little or no sunlight during the winter, causing colder temperatures. With all these differences in the temperature it creates a restless movement of air and water which is then distributed across the planet.

WHY DO WE HAVE SEASONS?

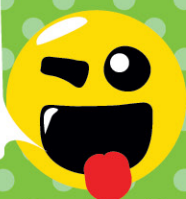
As the Earth spins on its axis, producing night and day, it also moves around the sun in what's called an elliptical orbit which requires 365 $\frac{1}{4}$ days to complete. Sound familiar? With the Earth's axis being on a 23.5 degree tilt, it allows for the sun to hit different points of the hemisphere, creating summer and winter.



TELLING THE TIME

The sun always rises in the east and sets in the west. This means you can tell what the time is just by looking at the sun! When you look east and the sun is on the horizon that means it's approximately 6:00am. When the sun is directly above your head that means it's noon. And finally when you look west and the sun is on the horizon that means it's approximately 6:00pm.

When the Earth first formed billions of years ago, one day was only about six hours long. The moon's effect on the ocean tides slows down the Earth's rotation slightly, making the days get longer over time.



THE MOON

The moon is very important to human life. The tidal effect of the moon helps to recirculate the oceans to keep them from becoming stagnated.

