EARTH'S FRESHWATER AND ATMOSPHERE

The Rotating Earth

Planet Earth (the planet on which we happen to live) spins on an imaginary line called an **axis.** This spinning movement is called Earth's **rotation**.

Lesson Checkpoint:
How long does it take the Earth to make one complete rotation?

The Earth's Temperature Changes

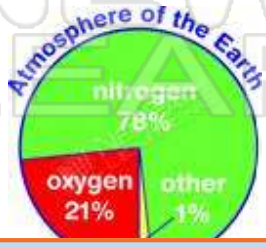
As the Earth moves on its orbit around the Sun, the areas on Earth closest the Sun receive sunlight and are warmer than those further from the Sun. Of course, as the earth rotates, the areas facing the Sun slowly change, and that means the time of day and the temperatures change.

Look at the diagram below. If you live in the Northern Hemisphere (such as the United States) you can see how close and how far away the United States is from the Sun as the seasons change.

Make up of Earth's Atmosphere

The air that surrounds the Earth is known as the Earth's **atmosphere**. The atmosphere absorbs the energy from the Sun which the Earth uses in many ways to provide a planet on which living organisms can survive.

The Earth's atmosphere is mostly made up of nitrogen, oxygen, and other gases.



Stratosphere

The stratosphere is just above the troposphere and is about 50 kilometers high. This layer is dry and less dense than the troposphere. The ozone layer is a part of this layer.

Mesosphere

The mesosphere is just above the stratosphere and is about 85 kilometers high.

Thermosphere

The thermosphere is just above the mesosphere and is about 600 kilometers high. Temperatures in this region can reach above 1000 C. This layer is known as the upper atmosphere.

Exosphere

The **exosphere** begins at the top of the thermosphere and continues until it reaches outer space.

The Ozone Layer

The ozone layer absorbs most of the sun's ultraviolet light (known as UV rays), which is a good thing since that kind of light can be EXTREMELY harmful to us on Earth.

Lesson Checkpoint:

An Air Quality Index will tell you! This index uses numbers and colors to tell you about the quality of air around you. The lower the number, the healthier the air and **GREEN** is good!!

Air Quality Index	
201 – 300	very unhealthy
151 – 200	unhealthy
101 – 150	unhealthy for sensitive groups
51 – 100	moderate
0 – 50	good

Water can be polluted too!

Where does water pollution come from?
Pollution comes from wastes from industries, people dumping contaminants into the ocean, water run off from fields that contain fertilizers and chemicals, untreated sewage drains, and from air pollution.

We need water that is NOT polluted. It's a good thing water is recycled here on Earth!!

salt water and not so much freshwater. Rivers contain freshwater and where rivers and oceans meet, there is low salinity. Oceans have high salinity!

The Water Cycle

The ***water cycle*** involves evaporation, transpiration, condensation, precipitation, and water runoff here on Earth.

The sun is the main energy supply for the water cycle.

The Water Cycle Process

- **Evaporation** is when a liquid changes into a gas. Evaporation occurs when the sun warms the water on Earth and some of that water changes into water vapor. The water vapor then goes into the air.

- **Transpiration** helps the evaporation process. It is when plants give off water vapor through their leaves into the air.

An **aquifer** is a layer of rock and soil which holds groundwater.