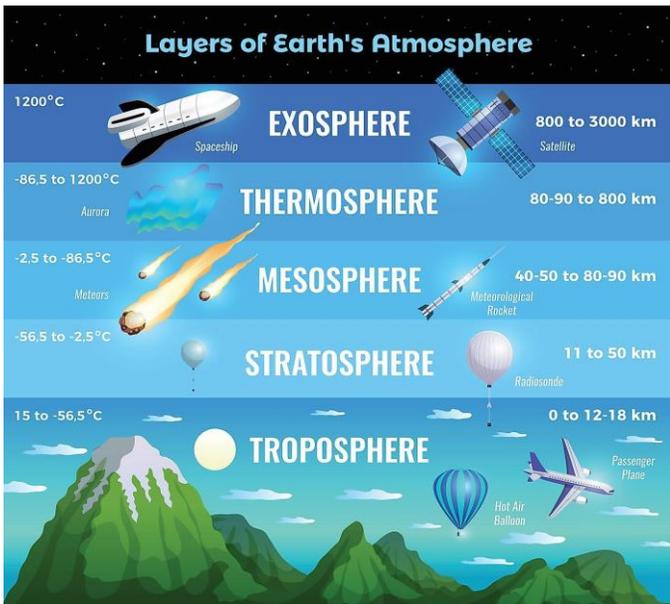


Earth's Atmosphere

Section I: Earth's Atmosphere



Earth's atmosphere makes conditions on Earth suitable for living things. It traps energy from the sun, keeping the Earth warm and water in liquid form. It also protects Earth from dangerous radiation and meteor collisions. The **atmosphere** is comprised of a thin layer of gases that surround Earth. It is made up of nitrogen, oxygen, carbon dioxide, water vapor, and other gases, as well as particles of liquids and solids. Nitrogen makes up 78% of the atmosphere, while oxygen makes up about 21%. It also includes **water vapor**, which is

water in its invisible gaseous form. The **ozone** forms when lightning interacts with oxygen in the air and creates a molecule of three oxygen atoms.

The Earth's atmosphere is divided into layers, which are classified according to temperature changes with altitude. The **troposphere** is the layer we live in and the layer closest to Earth's surface. This shallow layer is where rain, snow, and storms occur. The **stratosphere** is the layer directly above the troposphere. It contains the **ozone layer**, which protects Earth from **ultraviolet (UV) rays** that kill plants and animals and cause skin cancer in humans. The **mesosphere** is the middle layer of the atmosphere, and it protects Earth's surface from being hit by most meteoroids, which burn up from friction with the atmosphere. The **thermosphere** is divided into two layers. The **ionosphere** is the lower layer. It contains ions, or charged particles, that allow radio waves to bounce off and auroras to occur. The **exosphere** is the outer layer of the thermosphere.

Because air has mass, it has unique properties, including density and pressure. **Altitude**, or elevation, is the distance above sea level. As altitude increases, air pressure decreases, which also decreases density. Low density of air can make it difficult to breathe with less oxygen. **Air pressure** comes from the weight of a column of air pushing down on an area. It's measured by an instrument called a **barometer**.

Review:

1. Identify the layers of earth's atmosphere.
2. What layer protects Earth from ultraviolet rays?
3. What tool is used to measure air pressure?