

7th Grade Science

Lesson: April 7, 2020

Learning Target:

I can describe the characteristics of each layer of the Earth's Atmosphere.

Let's Get Started:

On your own sheet of paper, Hypothesize how you think the Earth's Atmosphere protects our planet.

Watch these Videos over the [Earth's Atmosphere Layers and How they protect us](#)
& [What are the Layers of Earth's Atmosphere?](#)

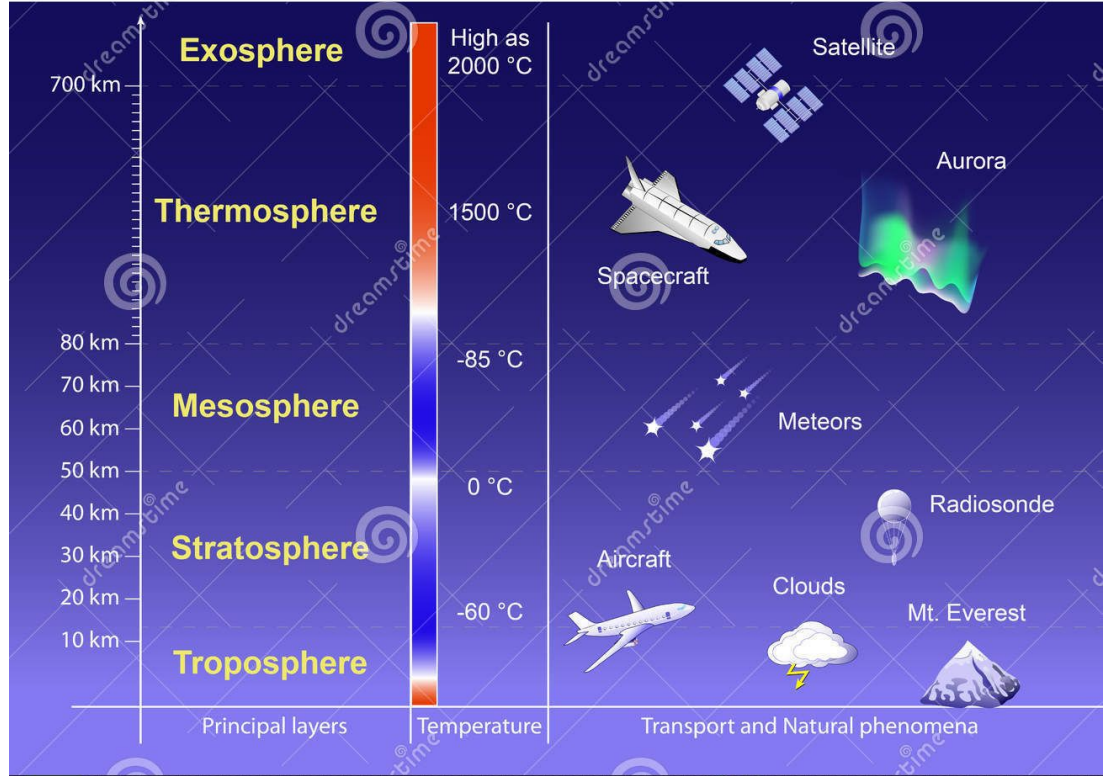
Practice:

Important Terms to remember:

1. The **troposphere** starts at the Earth's surface and extends 8 to 14.5 kilometers high (5 to 9 miles). This part of the atmosphere is the most dense. Almost all weather is in this region.
2. The **stratosphere** starts just above the troposphere and extends to 50 kilometers (31 miles) high. The ozone layer, which absorbs and scatters the solar ultraviolet radiation, is in this layer.
3. The **mesosphere** starts just above the stratosphere and extends to 85 kilometers (53 miles) high. Meteors burn up in this layer.
4. The **thermosphere** starts just above the mesosphere and extends to 600 kilometers (372 miles) high. Aurora Borealis (Northern Lights) and satellites occur in this layer.
5. The **ionosphere** is an abundant layer that stretches from about 48 kilometers (30 miles) above the surface to the edge of space at about 965 km (600 mi), overlapping into the mesosphere and thermosphere.
6. The **exosphere** is the upper limit of our atmosphere. It extends from the top of the thermosphere up to 10,000 km (6,200 mi).

Practice Continued:

LAYERS OF THE ATMOSPHERE



Practice Continued

Composition of the Atmosphere:

As one moves up in the atmosphere density decreases. Many experience this decrease in density as the "popping" of the ears while flying. This decrease in density is due to molecules positioning themselves farther apart.

Our atmosphere contains different types of gases; about 78% of the atmosphere is nitrogen, 21% is oxygen and 1% are various other gases. Nitrogen (N_2) is most abundant and is essential for all living things to grow. Oxygen (O_2) is necessary for plants and animals to use to release energy from food in a usable form.

The Ozone is made from a form of oxygen (O_3). There are other gases in the atmosphere too! Carbon Dioxide (CO_2), Argon (Ar), Neon (Ne), Helium (He), Methane, Krypton (Kr), Hydrogen (H).

Carbon dioxide is Used by plants to produce food. Animals give off carbon dioxide as a waste product. Burning Fossil fuels release carbon dioxide into the air which causes the earth's temperature to rise.

Practice Continued

Watch the Videos from the first slide. Using those videos and the information about each of Earth's atmospheric layers from slides 2 & 3 and the diagram, answer the following questions on your own piece of paper.

A. Fill in the missing words.

1. Earth is surrounded by a blanket of air called _____
(the atmosphere, oxygen)
2. The atmosphere is a mixture of _____
(gases, rocks)
3. About three fourths of the atmosphere is _____
(oxygen, nitrogen)
4. The layer of atmosphere closest to Earth is the _____.
(troposphere, carbon dioxide)
5. Ozone keeps most of the sun's harmful _____ from
reaching Earth. (radiation, sound waves)

More Practice

Answer Key:

A. Fill in the missing words.

1. Earth is surrounded by a blanket of air called The atmosphere
(the atmosphere, oxygen)
2. The atmosphere is a mixture of gases
(gases, rocks)
3. About three fourths of the atmosphere is nitrogen
(oxygen, nitrogen)
4. The layer of atmosphere closest to Earth is the troposphere.
(troposphere, carbon dioxide)
5. Ozone keeps most of the sun's harmful radiation from
reaching Earth. (radiation, sound waves)

More Practice

Look back at the information in the videos and slides to answer the questions below on your own piece of paper

What is special about nitrogen, and what is its main function in the atmosphere?

Name at least 4 other gases in the atmosphere besides oxygen and nitrogen:

- 1.
- 2.
- 3.
- 4.

More Practice

Answer Key

What is special about nitrogen, and what is its main function in the atmosphere?

Nitrogen is essential for all living things to grow. Its main function in the atmosphere is to provide living things with the nutrients they need in order to survive such as plants.

Name at least 4 other gases in the atmosphere besides oxygen and nitrogen:

1. Argon
2. Neon
3. Carbon Dioxide
4. Helium

Additional Practice

Click on the Link below additional practice.

[Earth's Atmosphere](#)

[Earth's Atmosphere and Gases Quizlet](#)