Earth Science Virtual Learning

HS Earth Science/ Introduction to Earth's Atmosphere

April 13, 2020

Grade/Course

Lesson: Monday, April 13

Objective/Learning Target:

Describe the composition and layers of Earth's atmosphere

Learning Target for This Lesson

Describe the gas and particle composition of the atmosphere.

Compare and contrast the five layers of the atmosphere.

Warm Up

How is deposition related to erosion?

How would you relate weathering and erosion?

If you had to make this a system how would weathering, erosion, and deposition work together?

Warm Up

How is deposition related to erosion?
Deposition occurs when the agents (wind or water) of erosion lay down sediment.

How would you relate weathering and erosion?
Erosion is the movement of weathered rock particles

If you had to make this a system how would weathering, erosion, and deposition work together?
Rock is weathered which breaks it down into sediment. This sediment is then moved by erosion. When that movement slows down the sediment is deposited causing a change in landscape.

Lesson Activity

Note Taking: As you move through this activity, you need to keep the two learning targets in mind. Consider getting a sheet of notebook paper and taking notes over the goals:

- Describe the gas and particle composition of the atmosphere.

Let's get started: You have a few options here, consider one of more of these activities

Introduction to Earth's Atmosphere A short reading task over the atmosphere. English and Spanish narration is provided.

Gases of The Atmosphere: A short video that discusses the FIVE gasses that make up most of the atmosphere.

Click to the next slide to see the answers!

Practice Activity

Look at the circle graph on the right. Can you identify these gases?

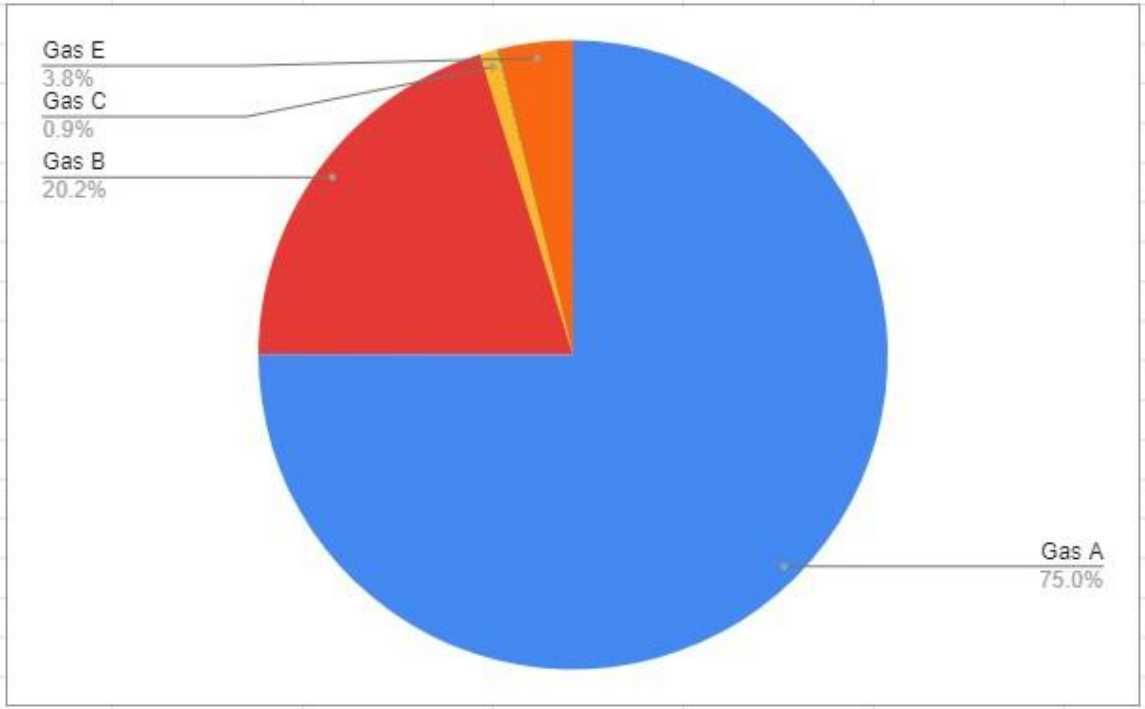
Gas A:

Gas B:

Gas C:

Gas D:

Gas E:



Practice Activity Answers

Look at the circle graph on the right. Can you identify these gases?

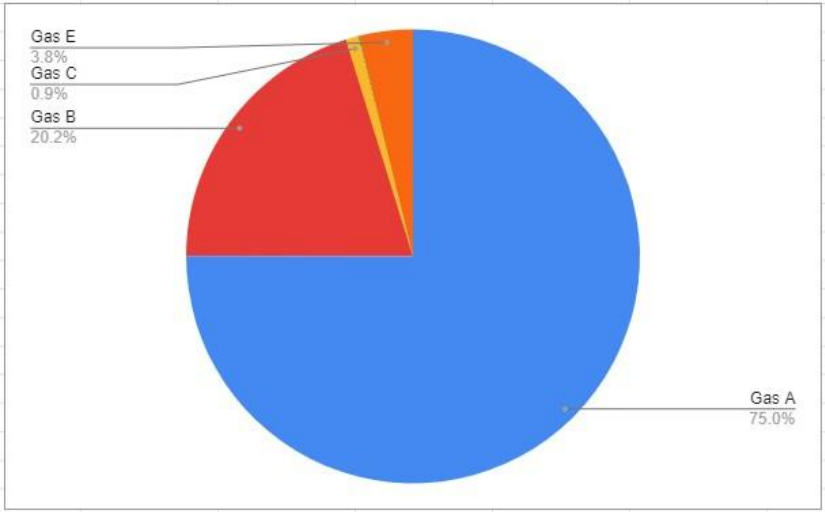
Gas A: Nitrogen

Gas B: Oxygen

Gas C: Argon

Gas D: Carbon Dioxide

Gas E: Water Vapor (ranges from 0 to 4%)



Practice Question

Most of the Earth’s atmosphere is made of :

A) Oxygen and hydrogen
B) Hydrogen and nitrogen
C) Nitrogen and oxygen
D) Carbon dioxide and oxygen

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Practice Question

Which item below best describes the first four gases of Earth's Atmosphere from largest to smallest percent?

A) Nitrogen, carbon dioxide, oxygen, argon
B) Oxygen, carbon dioxide, nitrogen, argon
C) Carbon dioxide,oxygen, nitrogen, argon
D) Nitrogen, oxygen, argon, carbon dioxide

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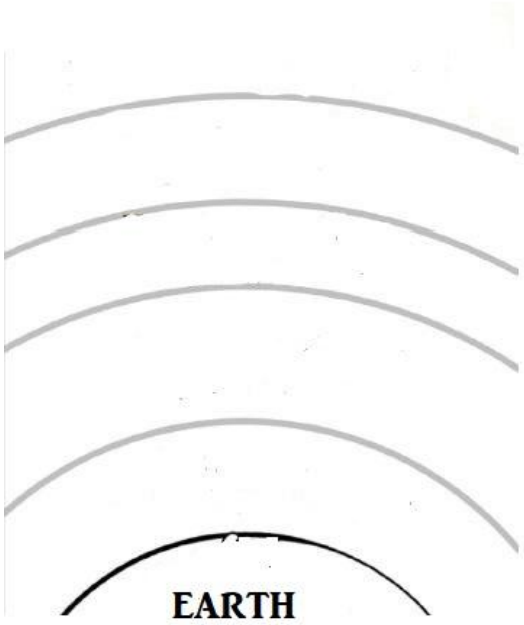
Lesson Activity

On a clean sheet of paper, draw a diagram that looks like the diagram on the right- we will use this to master our next goal: **Compare and contrast the five layers of the atmosphere.**

As you continue with the learning activities, label each layer and make a bullet list of important facts for each layer.

Introduction to Earth's Atmosphere A short reading task over the atmosphere. English and Spanish narration is provided.

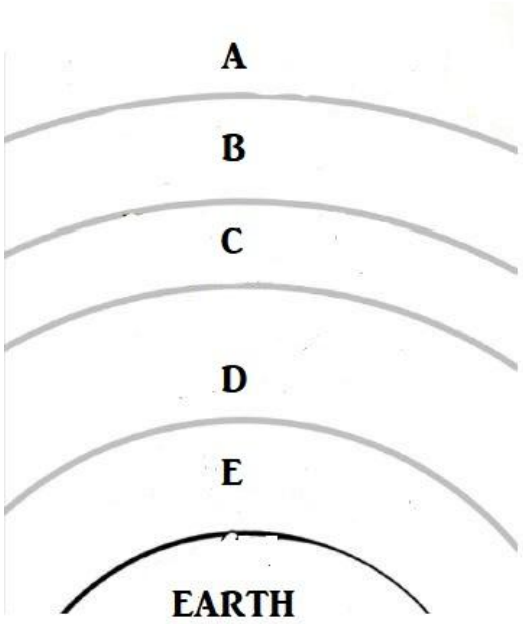
Layers of The Atmosphere: A short video that discusses the layers of the atmosphere.



Practice Activity

Most weather happens in which layer?

- Troposphere
- Stratosphere
- Mesosphere
- Thermosphere
- Exosphere



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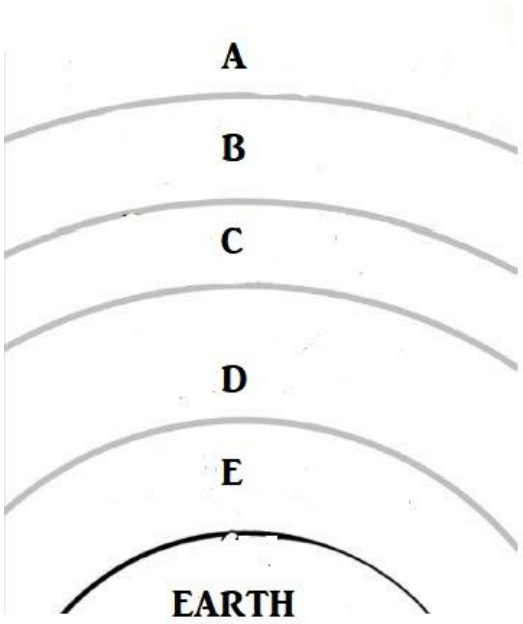

Practice Activity

The ozone layer is found within which layer?

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- Stratosphere
- Mesosphere
- Thermosphere
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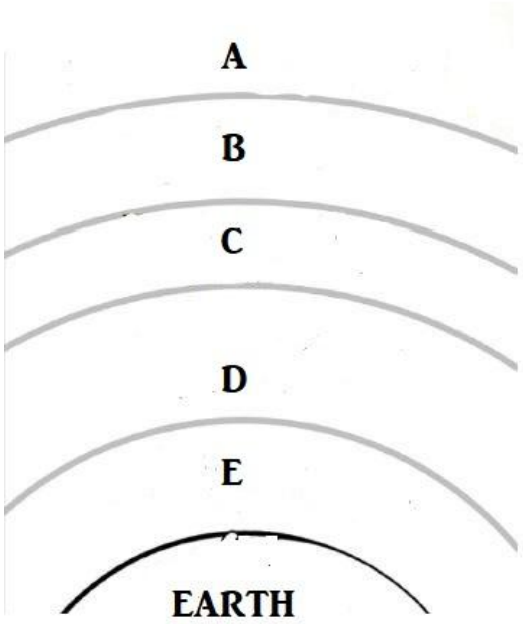

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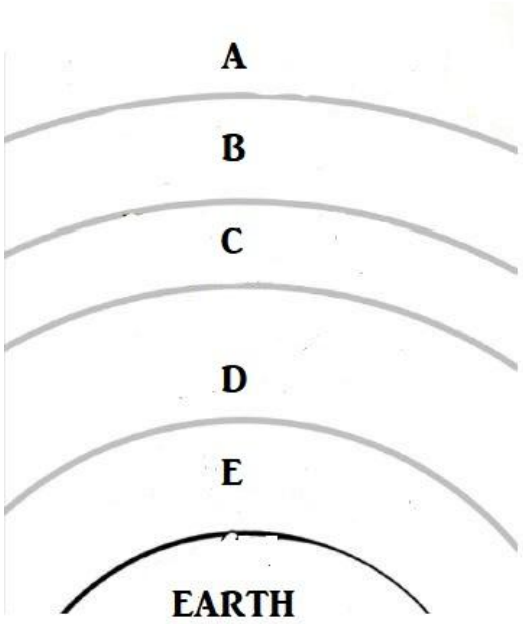
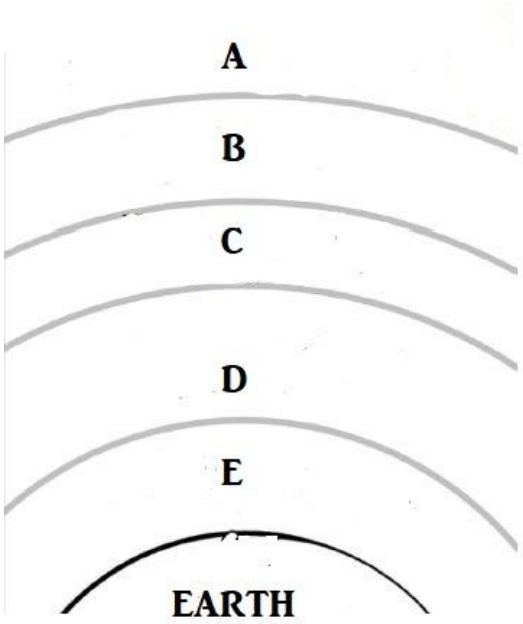


Practice Activity

Which selection below represents the layers of the atmosphere from lowest to highest altitude?

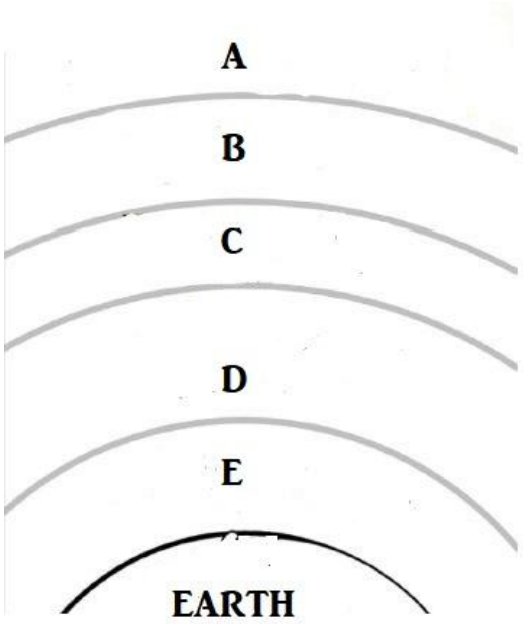
- Stratosphere,troposphere, mesosphere, thermosphere, exosphere
- Troposphere, stratosphere, mesosphere, thermosphere, exosphere
- Troposphere, stratosphere, mesosphere, exosphere, thermosphere
- Stratosphere,troposphere, thermosphere, mesosphere, exosphere



Practice Activity

Which selection below represents the layers of the atmosphere from lowest to highest altitude?

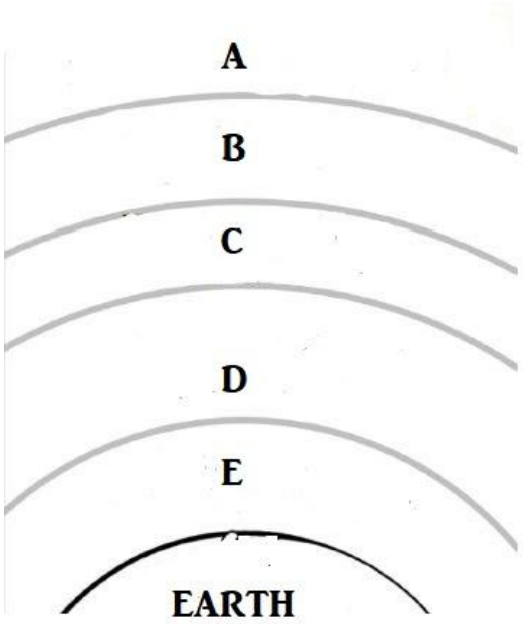
- Stratosphere,troposphere, mesosphere, thermosphere, exosphere
- **Troposphere, stratosphere, mesosphere, thermosphere, exosphere**
- Troposphere, stratosphere, mesosphere, exosphere, thermosphere
- Stratosphere,troposphere, thermosphere, mesosphere, exosphere



Practice Activity

Which layer has conditions most similar to outer space?

- Troposphere
- Stratosphere
- Mesosphere
- Thermosphere
- Exosphere



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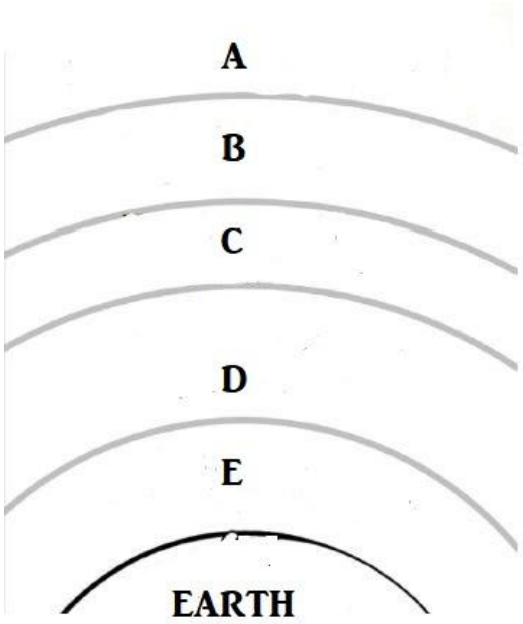
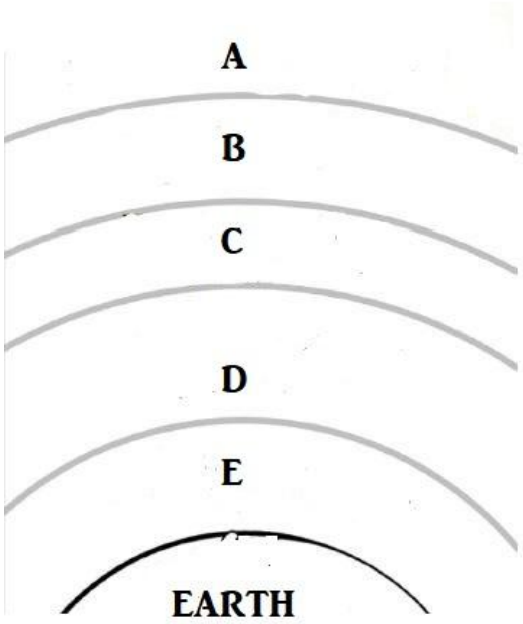


Practice Activity

Which layer contains the ionosphere?

- Troposphere
- Stratosphere
- Mesosphere
- Thermosphere
- Exosphere



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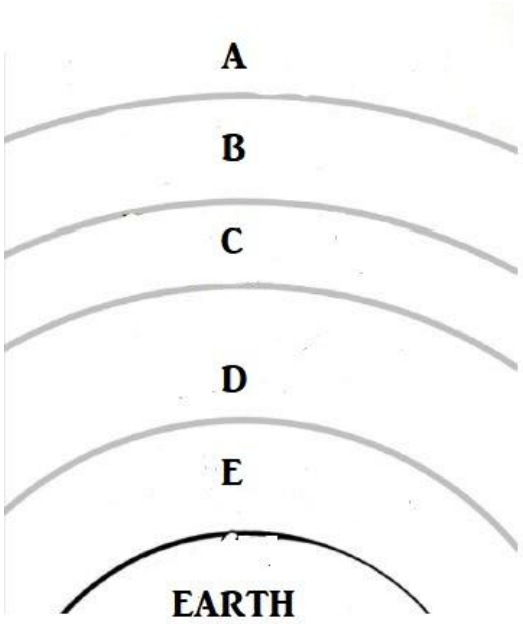
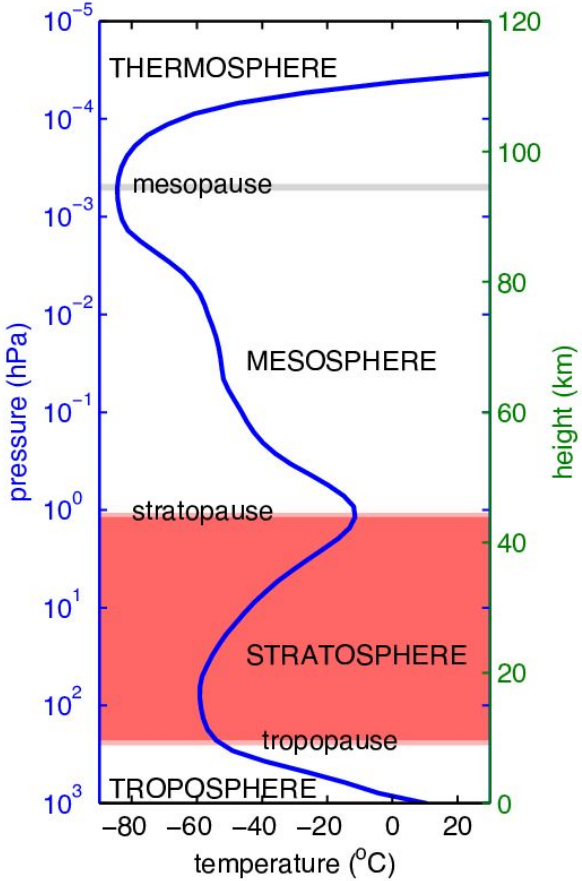


Misconception Correction

Many people think that temperatures of the atmosphere get lower as you rise in the atmosphere.

The graph on the right illustrates the temperature profile of the atmosphere. The blue line shows the temperatures, with the coldest temps on the right.

Why does each layer differ? Each layer has slightly different composition, which impacts the thermal energy held by that layer.



Extra Practice

This activity walks you through practicing graphing the temperatures in the atmosphere to help you determine where different layers start and stop.

Layers of the Atmosphere

Want to draw out the layers of the atmosphere? Here is a link that can offer you some guidelines to do just that. Click on this Link Here.