

Vertical Structure of the Atmosphere

Activity - Mr. PK

Go to this website:

<https://www.pbslearningmedia.org/resource/ess05.sci.ess.watcyc.vertical/vertical-structure-of-the-atmosphere/>

NOTE:

You will need to have flash in order to use the PBS website. The easiest way to use Flash is to access the PBS website through the Google Chrome Browser. This is because Google Chrome Browser comes pre-installed with its own version of Flash.

If you are unable to use Flash while using the Google Chrome Browser, visit this website:

<https://support.google.com/chrome/answer/6258784>

* Required

1. Email address *

2. Write your name below: *

3. 1. This question is from the beginning page! : In general, the density of gases and the atmospheric pressure _____ as the distance from Earth's surface increases. * 7 points

Mark only one oval.

decreases

increases

The rest of the questions come from looking at the interactive Vertical Structure of the Atmosphere Page

4. 2. Which choice correctly shows the layers of the atmosphere in order from closest to Earth's surface to outer space. * 7 points

Mark only one oval.

- Thermosphere, Mesosphere, Stratosphere, Troposphere
- Stratosphere, Troposphere, Thermosphere, Mesosphere
- Mesosphere, Thermosphere, Stratosphere, Troposphere
- Troposphere, Stratosphere, Mesosphere, Thermosphere

5. 3. What separates the thermosphere from the stratosphere? * 7 points

Mark only one oval.

- Tropopause
- Stratopause
- Mesopause

6. 4. Click on the "Temperature" box. In which layers of the atmosphere does the temperature increase with the increasing altitude? * 7 points

Mark only one oval.

- Troposphere and Mesosphere
- Troposphere and Stratosphere
- Mesosphere and Thermosphere
- Stratosphere and Thermosphere

7. 5. Make sure the "Temperature" box is still checked. What is the temperature around at the tropopause? * 7 points

Mark only one oval.

- 90°C
- 55°C
- 15°C
- 55°C

8. 6. Click on the "Pressure" box. What is the air pressure at Sea Level and the air pressure at the tropopause? * 7 points

Mark only one oval.

- Sea Level = 200 mb Tropopause: 1000 mb
- Sea Level = 600 mb Tropopause: 800 mb
- Sea Level = 800 mb Tropopause: 600 mb
- Sea Level = 1000 mb Tropopause: 200 mb

9. 7. Click the "Objects" box. Commercial planes fly in the lower stratosphere and high troposphere. At how many kilometers do most of these planes fly? * 7 points

Check all that apply.

- 5 km
- 10 km
- 15 km
- 20 km

10. 8. Make sure the "Objects" box is still checked. In what layer of the atmosphere does the International Space Shuttle travel? *

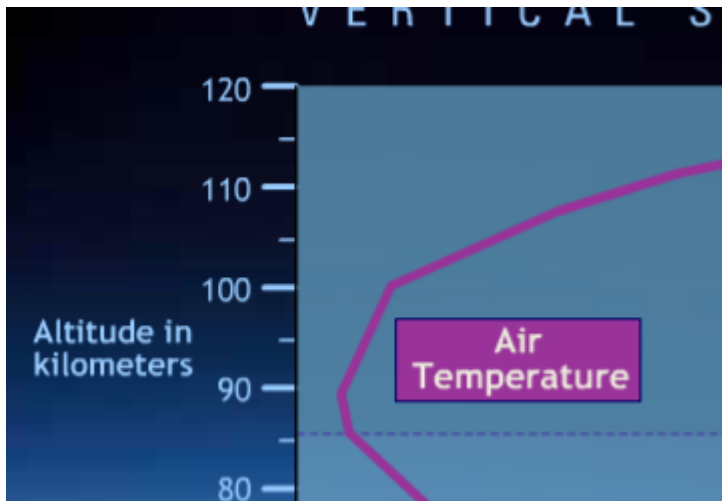
7 points

Mark only one oval.

- Troposphere
- Stratosphere
- Mesosphere
- Thermosphere

11. 9. Click on the purple box that says "Air Temperature." Air temperature is dictated by which three types of electromagnetic radiation most prominent in a particular layer of the atmosphere? *

7 points

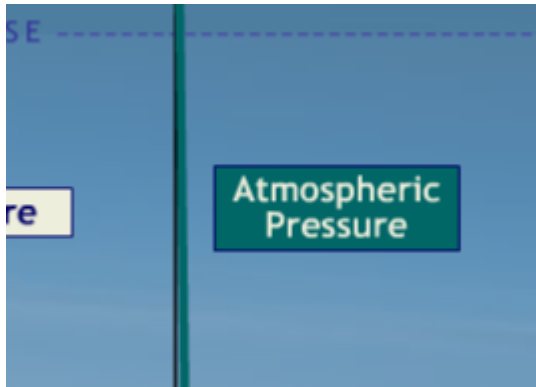


Mark only one oval.

- Infrared Waves, Visible Waves, Ultraviolet Waves
- Microwaves, X-Rays, Gamma Rays
- Visible Waves, Microwaves, X-Rays
- Gamma Waves, X-Rays, and Ultraviolet Waves

12. 10. Click on the teal box that says "Atmospheric Pressure." The nearer to Earth's surface, the more densely packed gas molecules will be - and the more pressure a column of air will exert on the area _____.*

7 points

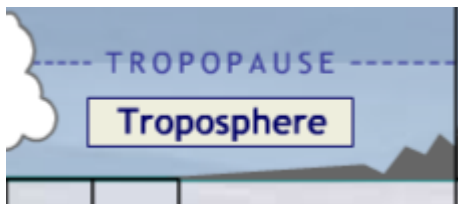


Mark only one oval.

- above
- below

13. 11. Click on the white box that says "Troposphere." The troposphere is where weather occurs on Earth. Precipitation occurs because*

7 points



Mark only one oval.

- Warm, dry air rises and cools, releasing precipitation
- Cold, moist air rises and cools, releasing precipitation
- Cold, dry air rises and cools, releasing precipitation
- Warm, moist air rises and cools, releasing precipitation

14. 12. Click on the white box that says "Stratosphere." Ozone in the stratosphere absorbs ultraviolet radiation (UV rays), causing *

7 points



Mark only one oval.

- precipitation to occur
- air temperature to decrease
- the formation of clouds
- air temperature to increase

15. 13. Make sure the "Objects" box is checked. What object in the mesosphere burns up and appears as a shooting star? *

7 points

Mark only one oval.

- Meteor
- Meteoroid
- Meteorite
- Asteroid

16. 14. Click on the white box that says "Mesosphere." What percentage of the Earth's atmospheric mass lies below the mesosphere? *

7 points



Mark only one oval.

- 10%
- 50%
- 78%
- 99.9%

17. 15. Click on the white box that says "Thermosphere." Air temperature in the thermosphere can rise to more than 1000°C (1832°F). Why then would a human passing through the thermosphere feel like the thermosphere was cool? *



Mark only one oval.

- The sunlight doesn't feel so bright
- Some molecules are moving slowly and some are moving quickly
- The molecules in this layer of the atmosphere are closely packed together
- The molecules in this layer of the atmosphere are widely spaced apart

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