



High School Science Virtual Learning

Earth Science

Air Pressure

April 14, 2020



High School Earth Science

Lesson: April 14, 2020

Objective/Learning Target:

Students will be able to explain the cause of air pressure, the factors that affect air pressure, and how air pressure is measured.



Let's Get Started:

Watch this video: [Atmospheric Pressure](#)

Thought Questions:

1. What are some common units used to measure air pressure?
2. In what ways is atmospheric pressure essential to our existence as humans?



Let's Get Started: Answer Key

1. Question 1- Pascals, kilopascals, psi
2. Question 2 - We would not be able to breath, air pressure forces air into our lungs.



Lesson Activity: **Air Pressure**

Read page 3 - “*Air Pressure*” from the National Weather Service JetStream website.

[Link to page 3](#)

Complete the guided reading questions on the following slides.

1. What causes pressure inside a container such as a balloon?
2. Name two ways you could increase the pressure inside a container such as a balloon.
3. What is the average air pressure (in psi) at Earth's surface?
4. What happens to air pressure as you move higher into Earth's atmosphere?
5. What are the two most common units used to measure air pressure in the US?
6. What is the average air pressure at sea level in millibars?
7. Which creates greater pressure; warm air or cold air?
8. How do we denote high and low pressure areas on weather maps?

Answers

1. What causes pressure inside a container such as a balloon? **When particles strike a surface they exert a force on that surface in what we observe as pressure**
2. Name two ways you could increase the pressure inside a container such as a balloon. **First, simply adding molecules to any particular container will increase the pressure, the second way of increasing (or decreasing) is by the addition (or subtraction) of heat.**
3. What is the average air pressure (in psi) at Earth's surface? **14.7 pounds per square inch**
4. What happens to air pressure as you move higher into Earth's atmosphere? **as elevation increases, the number of molecules decreases and the density of air therefore is less, meaning a decrease in air pressure**



5. What are the two most common units used to measure air pressure in the US? **The two most common units in the United States to measure the pressure are "Inches of Mercury" and "Millibars".**
6. What is the average air pressure at sea level in millibars? **At sea level, standard air pressure in millibars is 1013.2.**
7. Which creates greater pressure; warm air or cold air? **cooler air**
8. How do we denote high and low pressure areas on weather maps? **These weather systems are identified by the blue H's and red L's seen on weather maps.**

Extensions:

1. **Air: a weighty subject** [Link to Activity](#)
2. **A Pressing Engagement** [Link to Activity](#)
3. **Crunch Time** [Link to Activity](#)
4. **Air Pressure Video:** [Link to Video](#)