

8th Grade Flight and Space

Lesson: [April 7]

Learning Target:

Air Pressure and its effects on objects around them

Cartesian Diver - Boyle's Law

Day 2 of 3

Warm Up:

Watch Video: [Boyle's Law](#)

[Cartesian Diver Video](#)

Lesson Introduction/Background Information:

What this video: [Boyle's Law](#)

Check out this website: [Aviation Knowledge](#)

Read this article about the effects of low air pressure as planes altitude increases: [Aerospace, Pressure Effects](#)

Try to explain the following answers in your own words. Write your answer down, or email your answer to your teacher.

What is Boyle's Law?

How does Boyle's Law affect you in an airplane?

What happens to the human body when it is exposed to low enough pressure, which usually occurs at an altitude of 60,000 feet?

Practice:

Review of experiment: What Happened?

If your experiment didn't work as expected be sure to watch the youtube video of the experiment [here](#). Record your answers on paper.

Explain what happened to your pen cap Cartesian Diver.

As you squeezed the bottle what happened?

How much pressure did it take to make the diver react?

Make a prediction about how/why you think it happened.

What other tricks can you make the pen cap diver do?

Practice:

Record your answers on paper.

Evaluate Experiment:

What worked well when you performed the experiment?

What didn't work well when you performed the experiment?

What made this experiment difficult?

Self-Assessment:

Write down your understanding of what Boyle's Law is.

Write down how you think air pressure affects aviation.

Additional Practice:

Click on the links below to get additional information and to check your understanding!

[Why Boyle's Law is important to NASA](#)

[Cartesian Diver experiment video](#)