

8th Grade Flight and Space  
Lesson: [April 8]

**Learning Target:**

Air Pressure and its effects on objects around them

Cartesian Diver - Boyle's Law

Day 3 of 3

**Warm Up:**

Watch Video: [Cartesian Diver Video](#)

Design Process video: [Design process](#)

## **Lesson Introduction/Background Information:**

Today you will following the PLTW design process to build your own Cartesian Diver. Record your steps on paper.

Define the Problem: Design your own Cartesian Diver with supplies you have available at home.

# Practice:

Generate Concepts:

What materials can you find at home that you could use instead of the listed materials?

Do you think these materials will make the experiment work better? Why or Why not?

Design a Solution:

Make a plan for assembling your supplies to make your own Cartesian Diver.

# Practice:

## Build and Test:

Gather at least 2 of the materials you listed. Redo the experiment with each of your adjusted materials.

## Evaluate Solution:

Did the results change?

Were they better or worse?

Out of all three times you have done the experiment, which one worked the best? Why do you think that is?

# Self-Assessment:

Present Solution:

Do a short summary of your modified experiment, include pictures if possible, and include a quick write about what you learned from this experiment. Email this presentation to your teacher.

# **Additional Practice:**

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

[Cartesian Diver](#)

[Cartesian Diver experiment research](#)