



PLTW Flight and Space Virtual Learning

8th Grade/4 Forces of Flight

April 22, 2020



8th Grade/Flight and Space
Lesson: April 22, 2020
Day 2 of 2

Objective/Learning Target:
**Students will be able to define and understand the 4
Forces of Flight**

Warm-Ups:

Spend 2 minutes reviewing your notes from 4 Forces of Flight Day 1. Highlight the 1-2 words that best describe each of the 4 forces: lift, weight, thrust, and drag. Add 2 questions on the left that you have about these forces.



Lesson Introduction/Background Information:

We are going to be learning more about and practicing what we know about the 4 forces of flight.

Review your notes and the [4 Forces of Flight](#) lesson.

Practice:

Use the following 2 resources to complete the [Forces of Flight Worksheet](#).

[Forces of Flight](#) tutorial.

How the forces work together [demonstration](#).

Forces of Flight

Lift, drag, gravity, and thrust - these four forces work together to keep a heavy plane up in the air. Find out how each force works and how it helps keep a plane in flight. Use your notes from previous lessons, [Flight lesson](#), and the video [4 forces of flight](#) to help you complete this worksheet.

Think and Predict

How does lift affect flight? _____

How does gravity affect flight? _____

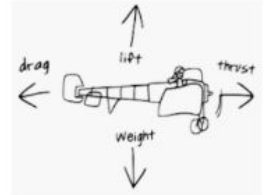
How does drag affect flight? _____

How does thrust affect flight? _____

Go to the [Forces of Flight](#) information website. Click the plane on the page to get to the [experiment](#).

Observe and Experiment

1. Read the diagram at right and the definitions below.
2. Think about the role each force plays in flight.



Lift is the force created as air rushes over the top of the wings and pushes from below the wings, raising the plane skyward.

Drag slows a plane down. It's caused by air friction on the plane.

Gravity pulls the plane's mass (like it does everything else) down toward the Earth.

Thrust is the engine-powered force that pushes the plane forward through the air.

Self-Assessment:

Check your understanding:

[4 Forces of Flight Quizlet](#)

Extend Your Learning/Continued Practice:

Review your [knowledge about flight](#) with this fun song!

Review the [4 forces of flight](#) here.