



PLTW Flight and Space Virtual Learning

8th Grade/4 Forces of Flight

April 21, 2020



8th Grade/Flight and Space
Lesson: April 21, 2020
Day 1 of 2

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

Lesson Introduction/Background Information:

Go to [Flight lesson](#) and record in your notes the descriptions of the 4 forces of flight.

Watch this video on the [4 forces of flight](#) and add to your notes any new information.

Practice:

Label the 4 forces of flight on the picture. Use [Mansfield website](#) to help. You may complete this digitally, on [Cornell Notes](#), or on notebook paper.

Then complete the table below.

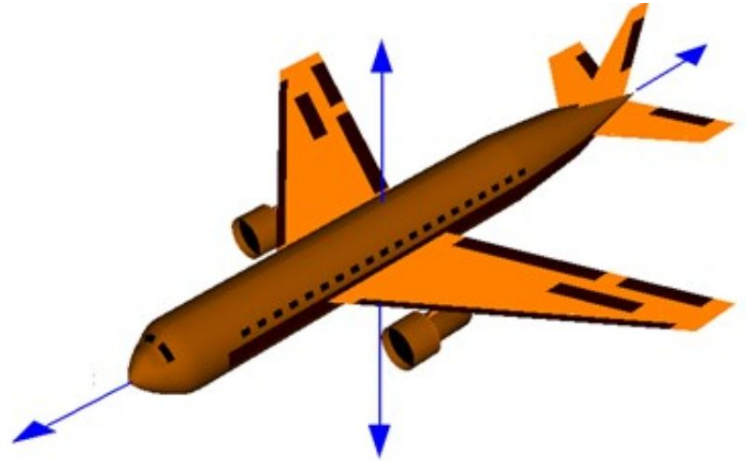
Thrust

Drag

Lift

Weight

Direction:	Force:
Down	
Up	
Forward (to left)	
Rearward (to right)	



Practice:

Summarize the following four forces that affect an aircraft on your notes.

Thrust

Drag

Lift

Weight

Describe simply in your notes what will happen to an airplane in flight in the following conditions:

Thrust greater than drag

Drag greater than thrust

Weight greater than lift

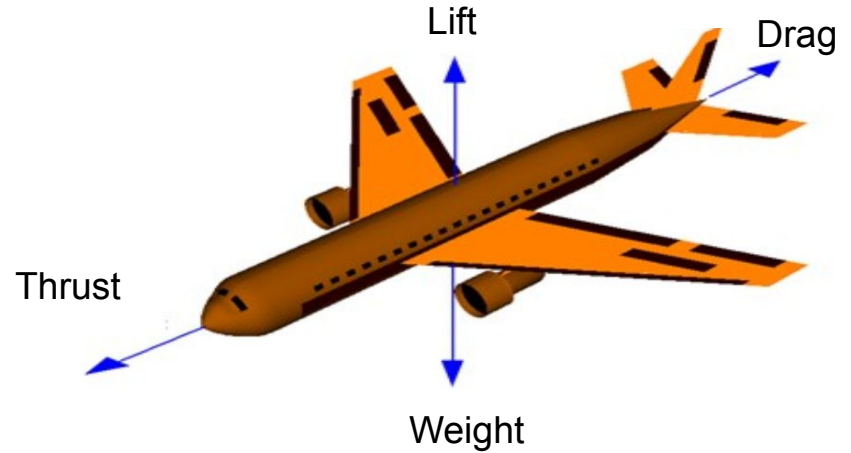
Lift greater than weight

Self-Assessment:

In your notes, explain what you can do to an airplane to increase lift.

Answers:

Direction:	Force:
Down	Weight
Up	Lift
Forward (to left)	Thrust
Rearward (to right)	Drag



Answers:

Summarize the following four forces that affect an aircraft on your notes.

Thrust - the force that propels a plane into motion

Drag - the force that acts opposite to thrust

Lift - the force that acts at a right angle to thrust

Weight - the force of gravity

Describe simply in your notes what will happen to an airplane in flight in the following conditions:

Thrust greater than drag - plane accelerates forward

Drag greater than thrust - plane decelerates or slows down

Weight greater than lift - plane accelerates downward

Lift greater than weight - plane accelerates upward

Extend Your Learning/Continued Practice:

Learn more about the [4 forces of flight](#).

Learn how the [flaps affect the forces of flight](#) to help planes take off and land.