



PLTW Flight and Space Virtual Learning

**8th Grade/Parts and  
Functions of an Airplane**

April 27, 2020



8th Grade/Flight and Space  
Lesson: April 27, 2020  
Day 2 of 2

**Objective/Learning Target:**  
**Students will be able to identify the parts and functions of  
an airplane.**

# Warm-Ups:

Practice what you learned on Day 1 with this Quizlet of [Parts and Functions of an Airplane](#).

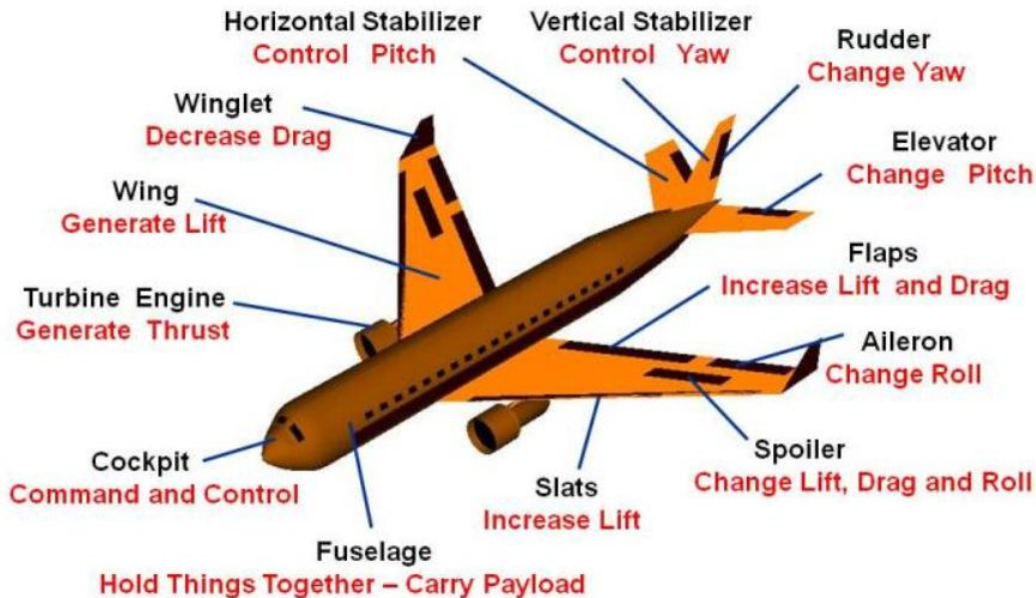
# Lesson Introduction/Background Information:

We will be learning all the basic parts of an airplane. Each airplane part plays a role in affecting the forces of flight and the motion of the plane to make the airplane fly to its destination.

You will be using the NASA site [Airplane Parts Definitions \(with text\)](#) to learn about how the parts of an airplane affect the motions and control flight.

# Practice:

Use the graphic below and the NASA website to answer the questions.



## Practice:

Resources to help you [How Things Fly](#) [Airplane Parts Definitions \(with text\)](#)  
[Aircraft Yaw Motion](#) [Aircraft Pitch Motion](#) [Aircraft Roll Motion](#)

1. Which parts are used to control lift at low speed for takeoff and landing?
2. Which parts, installed one to each wing, operate in opposite directions (i.e., one up and one down)?
3. If the part in Problem 1 on the right wing is up and the one on the left wing is down, what will the airplane do?

## Practice:

Resources to help you [How Things Fly](#) [Airplane Parts Definitions \(with text\)](#)  
[Aircraft Yaw Motion](#) [Aircraft Pitch Motion](#) [Aircraft Roll Motion](#)

4. If the pilot lowers the elevator, what will the airplane's tail do?
5. What will this in turn cause the airplane's nose to do?
6. If the pilot moves the rudder to the left, what will the airplane's tail do?

## Practice:

Resources to help you [How Things Fly](#) [Airplane Parts Definitions \(with text\)](#)  
[Aircraft Yaw Motion](#) [Aircraft Pitch Motion](#) [Aircraft Roll Motion](#)

7. What will this in turn cause the airplane's nose to do?
8. What airplane motion will occur with the elevator deflected up and the rudder deflected to the right?
9. What is a spoiler?



# Self-Assessment:

Try doing this Quizlet again and see if you are better at it this time.

[Parts and Functions of an Airplane.](#)

# Answer Key:

1. Which parts are used to control lift at low speed for takeoff and landing? Flaps and slats
2. Which parts, installed one to each wing, operate in opposite directions (i.e., one up and one down)? Aileron
3. If the part in Problem 4 on the right wing is up and the one on the left wing is down, what will the airplane do? Roll to the right (counter clockwise)
4. If the pilot lowers the elevator, what will the airplane's tail do? Tilt up
5. What will this in turn cause the airplane's nose to do? Tilt down
6. If the pilot moves the rudder to the left, what will the airplane's tail do? Move to the right
7. What will this in turn cause the airplane's nose to do? Move to the left
8. What airplane motion will occur with the elevator deflected up and the rudder deflected to the right? Nose up and to the right. With enough power it will create a climbing turn to the right (Remember: The motion of all airplane parts is as if you were looking at the airplane from the front).
9. What is a spoiler? Control surface between the leading and trailing edges of the wings; used on large airliners in place of ailerons to produce roll for maneuvering

# Extend Your Learning/Continued Practice:

Here's more demonstrations of Airplane Parts

Airplane Primary Components.

