



PLTW Flight and Space Virtual Learning

8th Grade/Helicopters

May 11, 2020



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Lesson: May 11, 2020

Objective/Learning Target:
Students will learn about Helicopters through a WebQuest.

Warm-Ups:

Record your answers to the following question on your [Cornell Notes](#) or notebook paper.

- What are three major factors that you learned about airfoils that can change the velocity and pressure of air flow around a wing and thus increase the amount of lift?

Lesson Introduction/Background Information:

A **helicopter**, sometimes referred to in slang as a "chopper" or "helo" (United States military usage, pronounced with a long "e"), is a type of rotorcraft in which lift and thrust are supplied by horizontally-spinning rotors. This allows the helicopter to take off and land vertically, to hover, and to fly forward, backward, and laterally. These attributes allow helicopters to be used in congested or isolated areas where fixed-wing aircraft and many forms of VTOL (Vertical TakeOff and Landing) aircraft cannot perform.

A helicopter's rotor blades are wings and create lift. An airplane must fly fast to move enough air over its wings to provide lift. A helicopter moves air over its rotor by spinning its blades.



Practice:

Using the [American Helicopter Museum and Education Center](#) website, look up and answer the following.

1. What two things have been the source of inspiration of humans?
2. When did the Chinese start with the ideas of vertical flight?
3. What are the names of Leonardo Da Vinci's sketches?
4. Name at least 3 others that toyed with helicopters?
5. What is the purpose behind the need for a tail rotor?
6. What is the first helicopter that employed a main and tail rotor?
7. What war validated the use of choppers in battle?
8. Which war was also known as the Helicopter War?
9. Identify 7 helicopters, when they came into use/were used and who created them.

Practice:

Navigate to the **EXHIBITS AND RESOURCES: Aircraft on Display** section and look through the various types of helicopters. Reflect on your top 3 Helicopters and why you chose them.

Self-Assessment:

Describe 2 situations in which a helicopter would be more useful than a plane.

Extend Your Learning/Continued Practice:

Learn more about [How Helicopters Work](#).

See amazing helicopter maneuvers.

