PLTW Gateway
Flight and Space | Unit Outline

Get ready to take off! Investigate, innovate, and use creative thinking and problem solving to learn how scientists and engineers make traveling around the globe and beyond possible.

The exciting world of aerospace comes alive through the Flight and Space (FS) unit. Students become engineers as they design, prototype, and test models to learn about the science of flight and what it takes to travel and live in space. They solve real-world aviation and space challenges and plan a mission to Mars.

Flight and Space Lesson Summary

Lesson 1	Flight
Lesson 2	Space
Lesson 3	Destination: Mars

Lesson 1: Flight
Students discover the science of flight and use aerodynamic concepts to explain how aircraft fly. Students receive an introduction to the engineering design process, investigate the effect of different airfoils on flight, use maps for navigation, and explore flight crew scheduling criteria. In the end-of-lesson project, students design and build a prototype of an aircraft and create a flight plan based on an assigned challenge scenario. Challenge scenarios relate to crew scheduling, maintenance problems, or route changes.

Lesson 2: Space
In this lesson students investigate how scientists and engineers play a vital role in space travel, space discovery, and living in space. They explore launch, orbit, landing, maintaining health in space, and maintaining a stable living environment for astronauts. In the end-of-lesson project, students follow the engineering design process to design, build, and test an improved prototype of a system of their choosing.

Lesson 3: Destination: Mars
Students work in teams to design and model different aspects required to complete a mission to Mars. Students collaborate to complete the problems and present their findings. The mission includes planning the astronaut crew, rocket specifications, crew daily activity schedules, Mars landing site, and Mars landing vehicle.