
STEM Lab – 6th Grade
 Science – Technology – Engineering - Math
Flight

The exciting world of aerospace comes alive through Flight. Students explore the science behind aeronautics and use their knowledge to design, build, and test different flying machines. Custom-built simulation software allows students to experience challenges of flight. Students discover the difficulties of lunar exploration through building, programming and testing a lunar (space) robots.

Knowledge and Skills

It is expected that students will:

- Describe why STEM is important to them.
- Describe the role computer science has on developing students’ computational and critical thinking skills and explain how to create, not simply use, new technologies.
- Describe how center of gravity affects an aerospace vehicle in distributing weight.
- Recognize the tools and purpose of aeronautic design and testing.
- Distinguish between the forces of lift, drag, weight, and thrust that affect an object moving through a fluid.
- Explain the importance of the forces that affect an object moving through a fluid.
- Explain how Newton’s laws apply to flight and space.
- Explain how Bernoulli’s principle affects flight.
- Identify the characteristics of an airfoil and how they compare and contrast with the characteristics of wings.
- Analyze the features and benefits of different types of wings.
- Research and design an airfoil that will create lift.
- Calculate fuel consumption and range of an airplane given speed and fuel capacity.
- Use programming to operate lunar robot explore planets/moons.

Activities and Projects

Collision of Objects	Future of Flying	Model gliders
Flight simulations	Video game design	Wing creations
Straw Rocket Trajectory	Nasa Foil Simulation	Lunar Robot

Grading

- A = 90%-100%
- B = 80% - 89%
- C = 70% - 79%
- D = 60% - 69%
- U = 59% and lower

Grading Breakdown

Activities	25%
Projects	40%
Tests	25%
Initiative	10%

- S** ~ Stay Positive
- T** ~ Think Critically
- E** ~ Embrace the Challenge
- M** ~ Manage your time appropriately