

Flight Technology Activity Guide

Objectives

In this unit, students will:

1. Discuss the history and future of rocketry and flight systems.
2. Identify and describe the forces that affect rocket flight.
3. Identify and describe basic laws and effects of aerodynamics.
4. Identify and describe factors influencing rocket stability.
5. Assemble and safely launch a rocket.
6. Calculate the angle of trajectory and altitude of a rocket.

Day #	Activity #	Activity Description	Type of Activity
1	1	Space Station Design and build an International Space Station; create a Student Folder for saving student stations as they need to return to their station the next day for a virtual walk through	Computer Program
2	1	Space Station Continue construction of space station; take a 3D virtual space walk	Computer Program
3	1	Building the Rocket Begin constructing a nose cone and body for your rocket; keep a box of tissues at this station for nosecone construction	Project
3	2	Building rocket body Complete construction of the rocket body	Project
4	1	Assembling the Rocket – Stage 1 Begin assembling the rocket	Project
4	2	Assembling the Rocket – Stage 2 Finish assembling the rocket – show instructor	Project
5	1	Narrative Writing activity/on-screen multiple-choice test Explain why an airplane is able to fly	Test
5	2	Exploring Rockets and Space Visit the NASA website. Explore the latest advances in technology. Write in journal.	Internet
6	1	The Rocket Launch Demonstrates the correct method of using the launching equipment	Video
6	2	Swing Test Test your rockets for stability. Write in Journal.	Project
6	3	Launch Safety Read the safety rules for launching the rocket. Complete safety test.	Reading
6	4	The Launch - Launch the rockets that have been constructed; be sure students have viewed the Launch Video and passed the Rocket Safety Test prior to launching. At least calculate distance and height for each rocket launch. Students enjoy competing against each other. Let the entire class come along to see the launch. A popular thing on launch day is to aim at a soccer goal, field goal or a large circle made of twine.	Project
7	1	Explore Airplane Parts and Information. Complete worksheet.	Project
8	1	Practice and show instructor a takeoff and landing on the Flight Simulation software.	Computer Program
9	1	Principles of Flight. Write in journal.	Internet
10	1	Design Brief	Project
10	2	Persuasive Writing activity/on-screen multiple-choice test Explain whether the current space launch is worth the risk.	Test

NOTE: Students should read the last instruction on each Guidebook page carefully to see if they should continue to the next activity in the Guidebook or return to the ADMIN program.