

Lesson Plan - Week Jan 21, 2019

DATE

1/21/2019

TOPIC

HOOP GLIDER ENGINEERING

INSTRUCTOR

MS. KRISTY

OVERVIEW/PURPOSE

BUILD AND TEST HOOP GLIDER

STANDARDS ADDRESSED

FOUR FORCES OF FLIGHT

Objectives: (Skills/information that will be learned)	<ul style="list-style-type: none"> ➤ Learn about air resistance ➤ Understand how things fly by learning the forces of light ➤ Create a several models of hoop glider. 	<p><u>MATERIALS NEEDED:</u></p> <ul style="list-style-type: none"> ➤ Tape ➤ Index paper or stiff paper ➤ Scissors ➤ Plastic straws
Information: (Demonstration or lesson details)	When an airplane flies, the wing is designed to provide enough lift to overcome the airplane's weight. The engine provides enough thrust to overcome drag to move the airplane forward. Curved surfaces on top of the glider help generate lift. An aerodynamic shape reduces drag.	
Activity: (Activity/demonstration to reinforce lesson)	The instructor will guide students on how to create the hoop glider using straws and papers. Students will investigate the length and shape of the glider to understand the forces of flight.	
Verification: (Students understand the lesson objectives)	<ol style="list-style-type: none"> 1. Why does the hoop flyer not turn over since the hoops are heavier? 2. Does the placement of the hoops on the straw affect its flight distance? 3. Does the length of the straw affect the flight? 	
Summary: (Expected Observations)	The two sizes of hoops help to keep the straw balanced as it flies. The big hoop creates "drag" (or air resistance) which helps keep the straw level while the smaller hoop in at the front keeps the hoop flyer from turning. Since objects of different weight generally fall at the same speed, the hoop will keep its upright position.	<p>Additional Notes:</p> <p>Four forces of flight: lift, weight, thrust, drag</p>