

ENGINEERING 2.1 DESIGN & INQUIRY

Science 8 January 2018
Mrs. Plyter plyter.com/science

Name _____

Period _____

Thur
25

Points

For Second Semester!

Your O-Wing:

1. Your solution was your _____.
2. Three variables:

3. Two constraints:

4. Three criteria:

5. Highest priority:

6. Two measurable evaluations: _____

7. List your Evaluators:

8. For a glider, if choosing between attractive and distance, the priority should be _____.

Mon

22

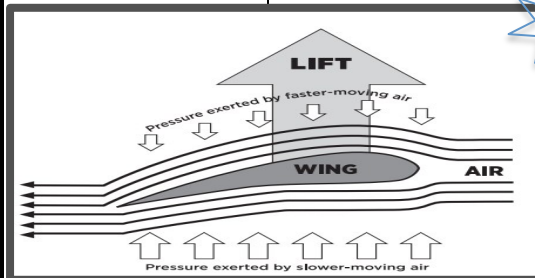
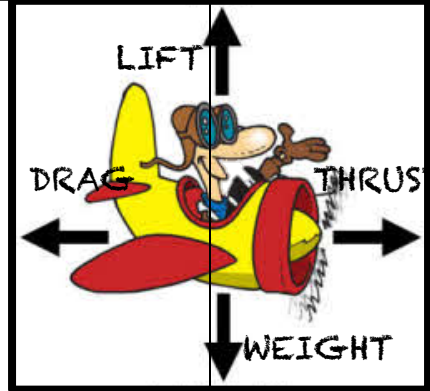
PROBLEM:

PRODUCE A LONG DISTANCE ATTRACTIVE O-WING HOOP GLIDER. TO TRANSPORT 1-2 PENNIES

RESTRICT MATERIALS TO:

- 1) CARD STOCK PAPER
- 2) DRINKING STRAW
- 3) CLEAR TAPE
- 4) 2 PENNIES

RESTRICT TRIALS TO: DESIGNATED AREAS AND HALLWAYS.



LIFT:

LIFT is when **less pressure** above the glider & **more pressure** below the glider causes the glider or wing to **rise, or LIFT.**

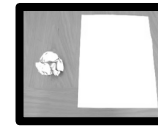
Bernoulli's Principle:

As the **speed** of a moving fluid (liquid or gas) **increases**, the **pressure** within the fluid **decreases**. (It gets out of the way.. and allows LIFT.)

Demonstrate Bernoulli's Principle where it says "Try it." →

Try it:

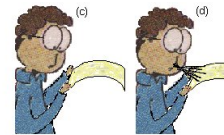
- 2 Sheets of Paper.
- Drop Them.
- Same height.
- Same time.



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Try it:

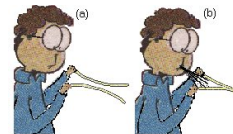
- 1 sheet of Paper



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Try it:

- 2 sheets of paper



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Central Science:

www.plyter.com/science

Google Classroom
Class Code = be5upi
O-Wing Hoop Glider

Data, Evaluation, Selection and Demonstration

Inquiry & Engineering →
The Wright Way →

Watch:

- 1) The 4 forces of Flight

Watch:

- 2) Newton's Laws

Physical Science →
Forces:

Watch:

Bernoulli's Principle

Try it: Pop cans

Watch:

Try it:

Google Classroom
Your O-Wing
Chart 2 +

Gym Flight

Vocabulary On Back:

Quizzes:

Initial in COLOR
10 points _____

Mon _____

Tue _____

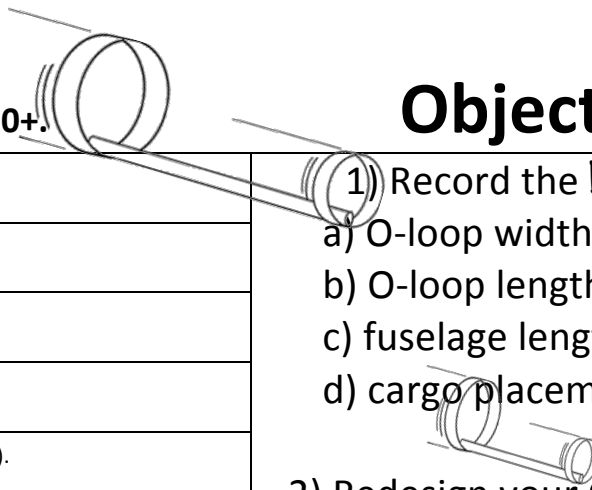
Wed _____

Thu _____

TOTAL _____

Vocabulary: Terms to Know: Add a memory note to 10+.

Objective:

1) Bernoulli's Principle	 <p>1) Record the Best of the Best</p> <p>a) O-loop width _____</p> <p>b) O-loop length _____</p> <p>c) fuselage length _____</p> <p>d) cargo placement _____</p> <p>2) Redesign your O-Wing, using the class determined variables, evaluate, select and demonstrate.</p> <p>Best Gliding Distance _____</p> <p>To fly a Hoop Glider: Hold the straw in the middle with the hoops on top and throw it in the air similar to how you might throw a dart, angled slightly up.</p> <p>If Time:</p> <p>3) Design, evaluate and demonstrate your solution for a Weird and Wonderful "Concept Multi-Wing O-Wing"</p> <p>Drawing</p> <p>Best Gliding Distance _____</p>
2) center of gravity	
3) constraint	
4) criteria	
5) Design: To create for a particular purpose or effect (v); the graphic format of a creation (n).	
6) drag	
7) durability	
8) Engineering: The application of scientific and mathematical principles to practical (useful) ends such as the design, manufacture, and operation of efficient and economical structures, machines, processes, and systems.	
9) evaluation	
10) evolve	
11) gravity	
12) lift	
13) priority	
14) rationale	
15) solution	
16) thrust	
17) trade-off	
18) viable	
19) weight (vs. mass)	

