

ENGINEERING 1 DESIGN & INQUIRY

Science 8 January 2019
Mrs. Plyter plyter.com/science

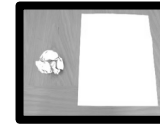
Name

Period

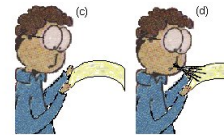
Thur

10

Try it: Explain:
2 Sheets of Paper.
Same height.
Same time.
Drop Them.

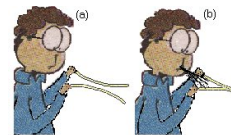


Try it: 1 sheet of Paper



?

Try it: 2 sheets of paper



?

11



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

Your O-Wing:

1. Your solution is your _____

2. Three variables:

3. Two constraints:

4. Three criteria:

5. 3 Priorities: High → Low:

6. Two measurable evaluations:

Mon

7

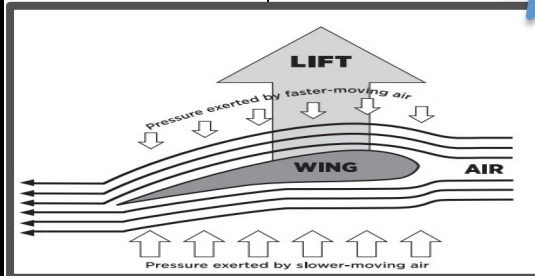
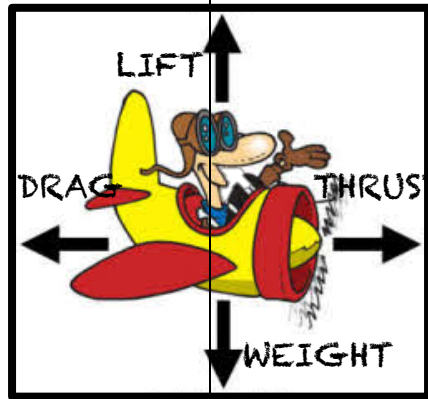
PROBLEM:

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

RESTRICT MATERIALS TO:

- 1) CARD STOCK PAPER (ASK)
- 2) DRINKING STRAW (2)
- 3) CLEAR TAPE
- 4) 1 PENNY

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: →



Points

Watch:

Try It:

Google Classroom
Your O-Wing

Gym Flight

Calendar:
Front and Back:

Quizzes:

Initial in COLOR
10 points _____

Mon _____

Tue _____

Wed _____

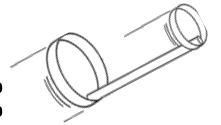
Thu _____

Fri _____

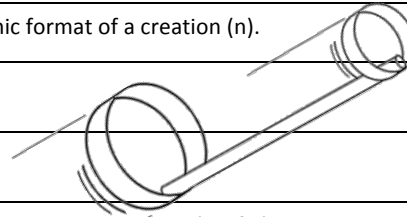
TOTAL _____

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

Objective:



1) Bernoulli's Principle
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)



- 1) Record the **Best of Your Best**
 - a) O-loop width _____
 - b) O-loop length _____
 - c) Fuselage length _____
 - d) Fuselage diameter _____
 - e) Cargo placement _____

As you

- 2) Design and redesign your O-Wing, using the criteria, your data and class determined variables.

- 3) Evaluate, Select and Demonstrate.
Your Best Gliding Distance _____

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.

If Time:

- 4) Design, evaluate and demonstrate your solution for a Weirid and Wonderful "Concept Multi-Wing O-Wing"
Drawing:

Best Gliding Distance _____