

Violet's Flying Machines



Flying Machine # 1:

What would you name this flying machine?

Draw a picture of the flying machine below:

How far did Violet go in this flying machine?

Trial	Distance (cm)	Flight Observations
1		
2		
3		

Circle the longest distance for this flying machine.



Flying Machine # 2:

What would you name this flying machine?

Draw a picture of the flying machine below:

How far did Violet go in this flying machine?

Trial	Distance (cm)	Flight Observations
1		
2		
3		

Circle the longest distance for this flying machine.



Flying Machine # 3:

What would you name this flying machine?

Draw a picture of the flying machine below:

How far did Violet go in this flying machine?

Trial	Distance (cm)	Flight Observations
1		
2		
3		

Circle the longest distance for this flying machine.



The Winner

Which of your flying machines carried Violet the farthest?

What changes would you make to make it better? Draw and write your answer.

Captain Arsenio's Next Project

The CD Hovercraft

STEP 1: Build a Hovercraft

Materials:

- CD
- Sports Bottle Cap
- Permanent Marker
- Marshmallow
- Hot glue (For Teacher Use Only)

Procedure:

1. Use the markers to write your name on the shiny side of the CD.
2. Open and close your sports bottle cap.
3. Take your hovercraft and sport bottle cap to your teacher when you are ready for the glue.
4. Wait at least 10 minutes for the glue to cool and harden.
5. While you are waiting, draw a face on the marshmallow to represent Captain Arsenio.

STEP 2: Test the Hovercraft

Materials:

- Assembled hovercraft
- Balloon
- Air pump

Procedure:

1. Pump up a balloon with 15 pumps of air and stretch the mouth of the balloon over the closed sports bottle cap.
2. Place your hovercraft on the ground and give it a light push. Record how far it moves in centimeters in the chart below.
3. Now open the cap and push it with about the same amount of force as you used in #2. Record how far it moves in centimeters in the chart below.

15 Pumps of Air	Distance Traveled
Cap closed	cm
Cap open	cm

Did the hovercraft travel farther with the cap closed or open? _____

Why do you think this happened? _____

Name _____

Hovercraft Designs – Part 1

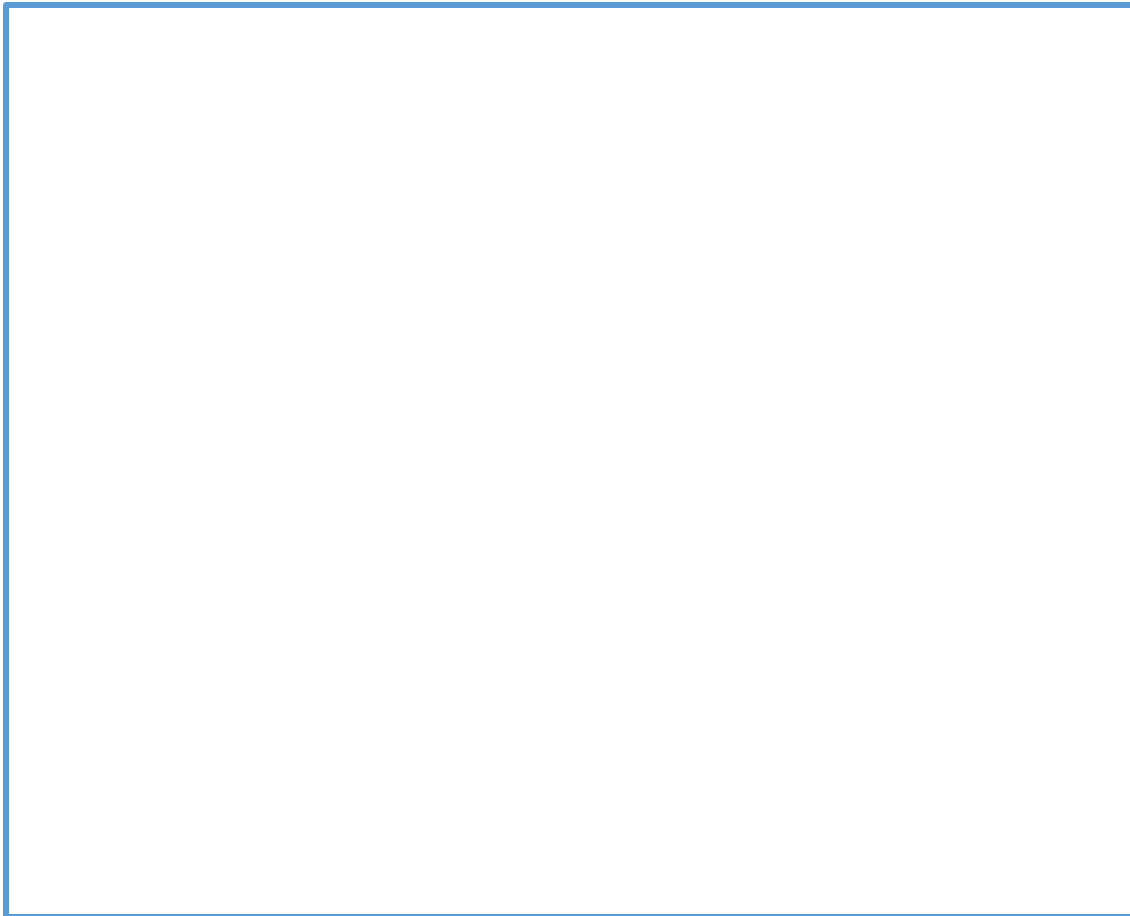
Design a hovercraft that meets the following criteria:

- 1) Captain Arsenio is carried from “Here” to “There”
- 2) Captain Arsenio (the marshmallow) must stay aboard the hovercraft at all times

Your design must be designed using the following constraints:

- 1) The hovercraft is powered by the air of only one balloon
- 2) You must use only the supplies your teacher approves

Brainstorm and sketch your ideas below.



Teacher Checkpoint

Hovercraft Designs – Part 2: Designing and Testing

Design #1

1. Draw a picture of this hovercraft design below.

2. Did it meet the criteria?

_____ Captain Arsenio was carried from “here” to “there”

_____ Captain Arsenio (marshmallow) stayed aboard the hovercraft at all times

3. Did it stay within the constraints?

_____ The hovercraft was fueled by the air of only one balloon

_____ You used only the supplies your teacher approved

3. How can you make it better (faster, smoother, or more exciting)?

Design #2

1. Draw a picture of this hovercraft design below.

2. Did it meet the criteria?

_____ Captain Arsenio was carried from “here” to “there”

_____ Captain Arsenio (marshmallow) stayed aboard the hovercraft at all times

3. Did it stay within the constraints?

_____ The hovercraft was fueled by the air of only one balloon

_____ You used only the supplies your teacher approved

3. How can you make it better (faster, smoother, or more exciting)?

Design #3

1. Draw a picture of this hovercraft design below.

2. Did it meet the criteria?

_____ Captain Arsenio was carried from “here” to “there”

_____ Captain Arsenio (marshmallow) stayed aboard the hovercraft at all times

3. Did it stay within the constraints?

_____ The hovercraft was fueled by the air of only one balloon

_____ You used only the supplies your teacher approved

3. How can you make it better (faster, smoother, or more exciting)?

Design #4

1. Draw a picture of this hovercraft design below.

2. Did it meet the criteria?

_____ Captain Arsenio was carried from “here” to “there”

_____ Captain Arsenio (marshmallow) stayed aboard the hovercraft at all times

3. Did it stay within the constraints?

_____ The hovercraft was fueled by the air of only one balloon

_____ You used only the supplies your teacher approved

3. How can you make it better (faster, smoother, or more exciting)?
