

Date Oct 9, 2018

Notes on Cars of the Past, Present, and Future.

The first car^{built} was a steam engine car and was made 200 years ago. The steam engine car only ran on steam which did not run very well. Ford built about 1, million cars and were very cheap and affordable.

Standly steamer took 35-45 minutes to start. Befor 1919 - Henry Ford's cars started with a hand crank.

In 1919, they went to an electric start. Google is developing a self driving car.

Engineering Green Balloon Air Pressure Car

Engineer's Name Anisha Kulkarni | Homeroom Teacher _____



Identify the Problem

1. What is the goal of this activity?

The goal is to create a green futuristic balloon car.

2. Who will benefit from your work?

future generations will benefit. It will produce no pollution.

3. What are the requirements or criteria of this balloon rover?

The car must travel in a straight line. The car must go at least 3 feet. It must be powered by air movement from a 12 inch balloon.

4. Are there any limitations for building this balloon car?

No electronics, can only use one 12 inch balloon.

5. How will you know if your balloon car is successful?

The balloon car is powered by air, travels in a straight line and goes 3 feet.

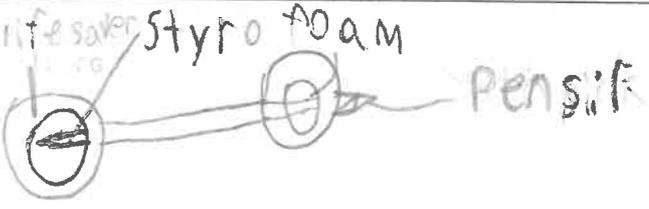
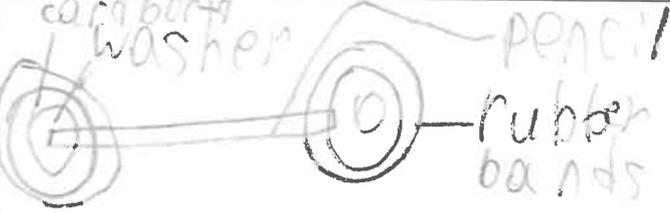
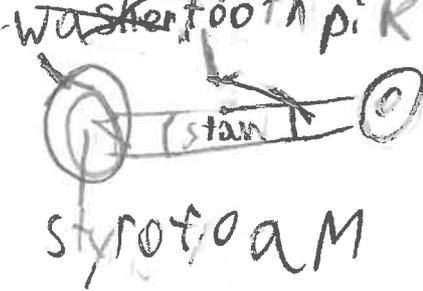


Notes on Simple Machines – Date Oct 10, 2018

A simple machine is a device that makes work easier, ① the lever, ② the wheel and axle, ③ the pulley, ④ the inclined plane, ⑤ the wedge, ⑥ last the screw. Work means using energy to move something.

Brainstorming Ideas

Select some materials to put together for a wheel and axle. Design three different types of wheels and axles. Draw them in the box provided. Be sure to label what materials you used.

<p>Design 1- Wheel and Axle</p> <p>Student's Name: Alexis</p>	
<p>Design 2- Wheel and Axle</p> <p>Student's Name: chase</p>	
<p>Design 3- Wheel and Axle</p> <p>Student's Name: Anisha</p>	
<p>The Design I will use:</p>	<p>Mine is the best if these are the only ones.</p>

Why did I choose this design?

I was going to do design 3 because of big wheels.

Build your Design

As you build your design, was there anything you had to change?

I had to change a lot of things.

Test, Improve and Retest the Wheel and Axles

Attach your wheel and axles to a piece of cardboard. How freely did they travel?

It traveled really freely like wind.

How did you improve the wheel and axle set up?

Notes on Friction:

Friction is a force when 2 surfaces slide past each other. Friction produces heat and energy. Friction causes objects to slow down. More friction with big surfaces. Wider tires means more friction. More mass or weight something has the greater friction.

Friction Activity:

Test your wheel and axles on different surfaces. Describe **what** happened after trying your wheels and axle on different surfaces.

The wheels slid on the tiles and went straight on the carpet

Describe **why** you think this happened?

The tiles are smoother than the carpet.

Find a partner with a different size of wheels and axles. How is their wheel and axles travel compared to yours?

My partner's car travels bumpier than mine.

What questions do you have?

Brainstorming Ideas for a Body

Before brainstorming ideas, review the criteria for the green car?

1. Could go 3 feet, 3. use 12 inch balloon
2. Move in a straight line to move it

What are the limitations?

1. no electronics.
2. Balloon powered.

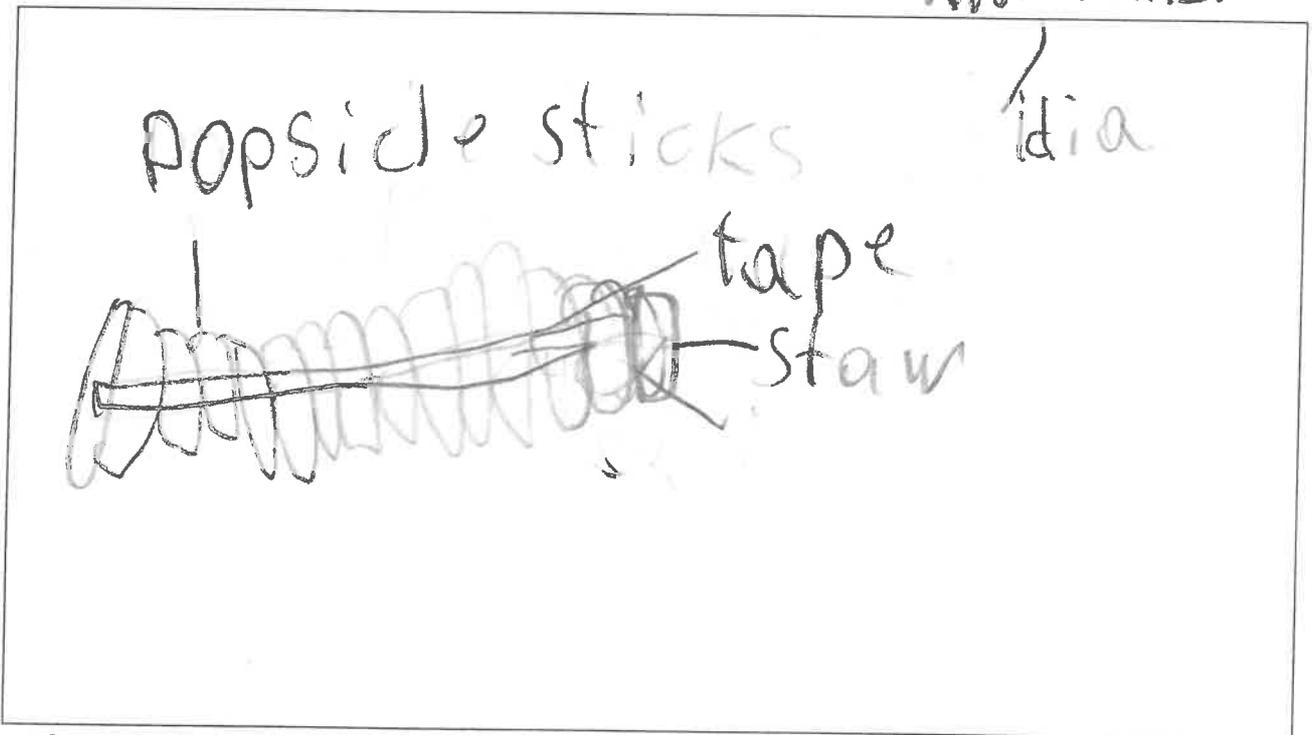
Brainstorm some materials we could use.

- | | |
|--------------------|----------------------|
| 1. cardboard | 5. foam board |
| 2. straws | 6. hot glue |
| 3. popsicle sticks | 7. tape |
| 4. foam, thin | 8. double sided tape |

Brainstorming Ideas for the Green Air Powered Car

Idea One

Mackenzie



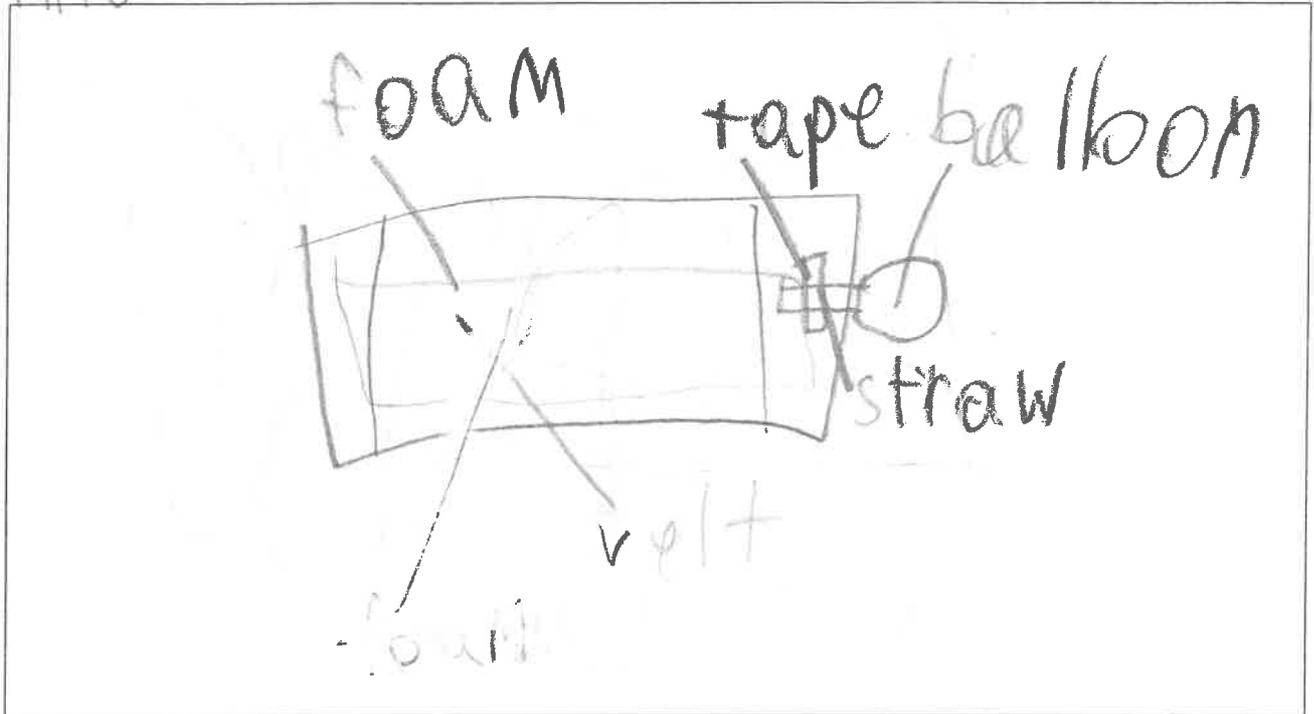
After brainstorming ideas with your group, sketch an idea in the box provided and list the materials used both in the sketch and in the materials section below.

Materials:

Popsicle sticks, tape,
straw, balloon

Idea 2

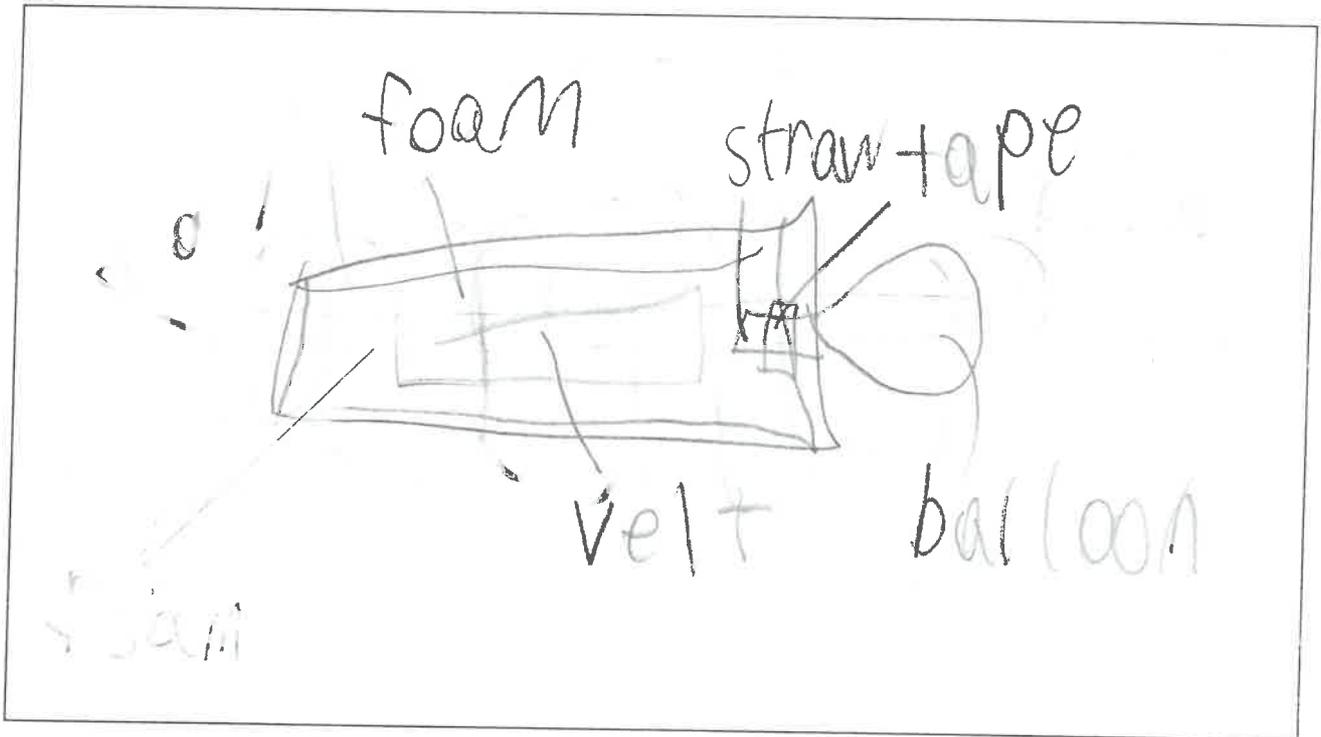
Mine



Pick a partner outside of your original group and brainstorm ideas with a partner. Sketch your partner's idea here and label the parts suggested. You will be explaining this to your group so include lots of details.

Materials:

tape, straw, foam, balloon,
velcro.

Final Design To Build**Design 3**

After brainstorming ideas with your group, sketch an idea in the box provided that you plan to build. Include the details for materials to be used.

Materials:

balloon, foam, straw, tape,
felt

Approved!

Building Your Prototype

As you build your design, keep in mind the goal of your design and where you might mount your balloon. What is the goal of your design?

It must go 3 feet in a line. Must have a way to protect you.

Testing, Improve, and Retest

After building your design, how closely did you follow your final planned design? What changes did you make and why?

I changed my wheels and body. Washers seemed heavy. Body stopped wheels.

Evaluate

Did your car see if you have met the requirements?

I'm not finished yet.

Evaluate Other Models

Look at your classmates' models, what did you find out from examining these models?

What worked well?

Brady's worked well

What did not work so well?

My Body did not work so well because it kept rubbing against my wheels.

Evaluating the Power Source

What are the pros and cons for using pressurized air ~~or wind energy~~?

Pros	Cons
easy to get	balloon could pop
clean energy	runs out
	Balloon drags

What are some other possible energy sources future engineers might consider?

Battery car
 Solar car

