

STEM Student Packet

PUMPKIN STAND



YOUR Name _____

Section _____



Vocabulary

matter

the “stuff” everything is made of
matter takes up space
matter can be a solid, liquid, or gas

physical property

what we can see or measure

examples:

color, length, weight, texture, hardness, strength, shape,
flexibility, size, smell

texture

how something feels

example: smooth, rough, furry, pointy



hardness

describes the surface of an object

soft OR hard



Flexibility

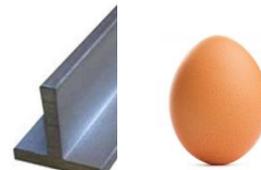
the ability of a substance to *bend* without breaking.

A substance that isn't flexible is rigid or stiff



strength

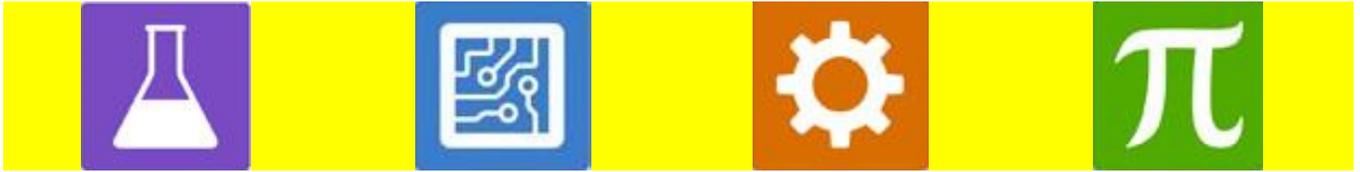
the material of an object: how much force can the material handle



elasticity

allows the object to bend and stretch when force is applied, and to return back to the original shape when the force is no longer applied





Group # _____

Section: _____

Student Name: _____

Partner's Name: _____

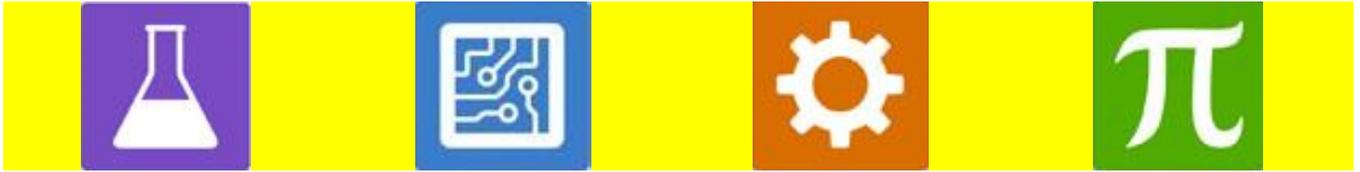
Give your project a title:

Design the Prototype

(Create a labeled diagram of your prototype.)

Materials

Tape Scissors	
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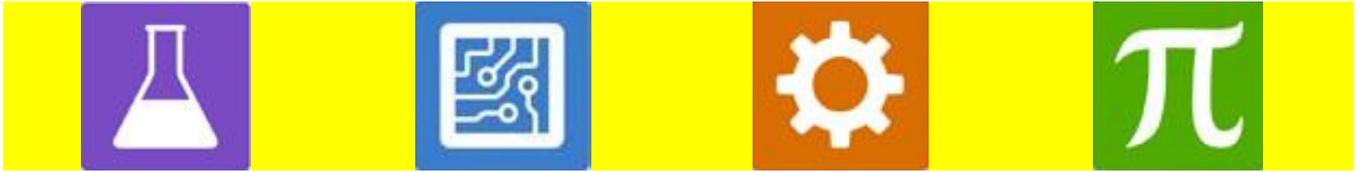


Group # _____ **Section:** _____
Student Name: _____
Partner's Name: _____

Test your Prototype - Collect your Data

Record your data in this table

LENGTH OF BASE	
WIDTH OF BASE	
AREA OF BASE	



Group # _____

Section: _____

Student Name: _____

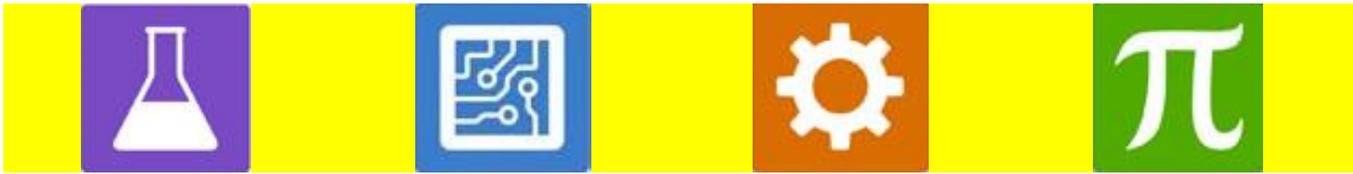
Partner's Name: _____

Improve the Prototype

(Re-design your Prototype. Create a labeled diagram of your improved prototype.)

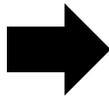
Materials

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PLAN

Empty rounded rectangular box for the PLAN stage.



BUILD

Empty rounded rectangular box for the BUILD stage.



TEST

Empty rounded rectangular box for the TEST stage.



IMPROVE

Empty rounded rectangular box for the IMPROVE stage.

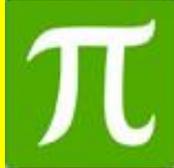


ASK

Empty rounded rectangular box for the ASK stage.



*Engineering
Design
Process*



Group # _____

Section: _____

Student Name: _____

Partner's Name: _____

Reflection Questions

1. As you were building and testing, what were 2 specific changes your group made to improve the design? Explain the reasoning behind each of the changes.

Blank lines for writing the answer to question 1.

2. If you had to do this process again, what would you do differently?

Blank lines for writing the answer to question 2.

3. What did you learn? Discuss your success or lack of success and reasons for it.

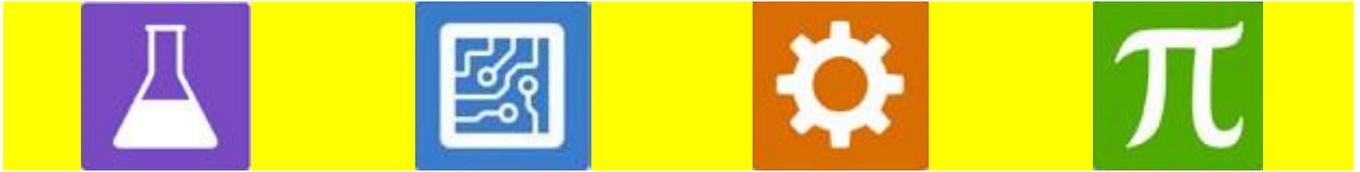
Blank lines for writing the answer to question 3.



Make a Keynote Presentation– Use Keynote to create a presentation following the instructions below. Share the presentation on **Seesaw**.

Instructions: Create a Keynote Presentation that has the following:

1. At least 5 slides
2. A title slide
3. Slides must have a transition
4. At least 1 image per slide that conveys the topic
5. A slide that describes what the project is about
6. A slide describing the STEM Process
 - a. You can use the Engineering Process page in this packet!
7. A slide describing the material picked for building, the physical properties of the material, and why the material was picked
8. An image of your drawing of the initial prototype
9. At least one slide stating whether your prototype passed the challenge. Include pictures of
 - a. the process of building the stand (beginning, middle, end)
 - b. your prototype with the pumpkin on it, even if it failed



10.If your prototype did not pass the challenge, a slide explaining what changes had to be made, and whether you passed the challenge after these changes

- a. include a picture of your new prototype