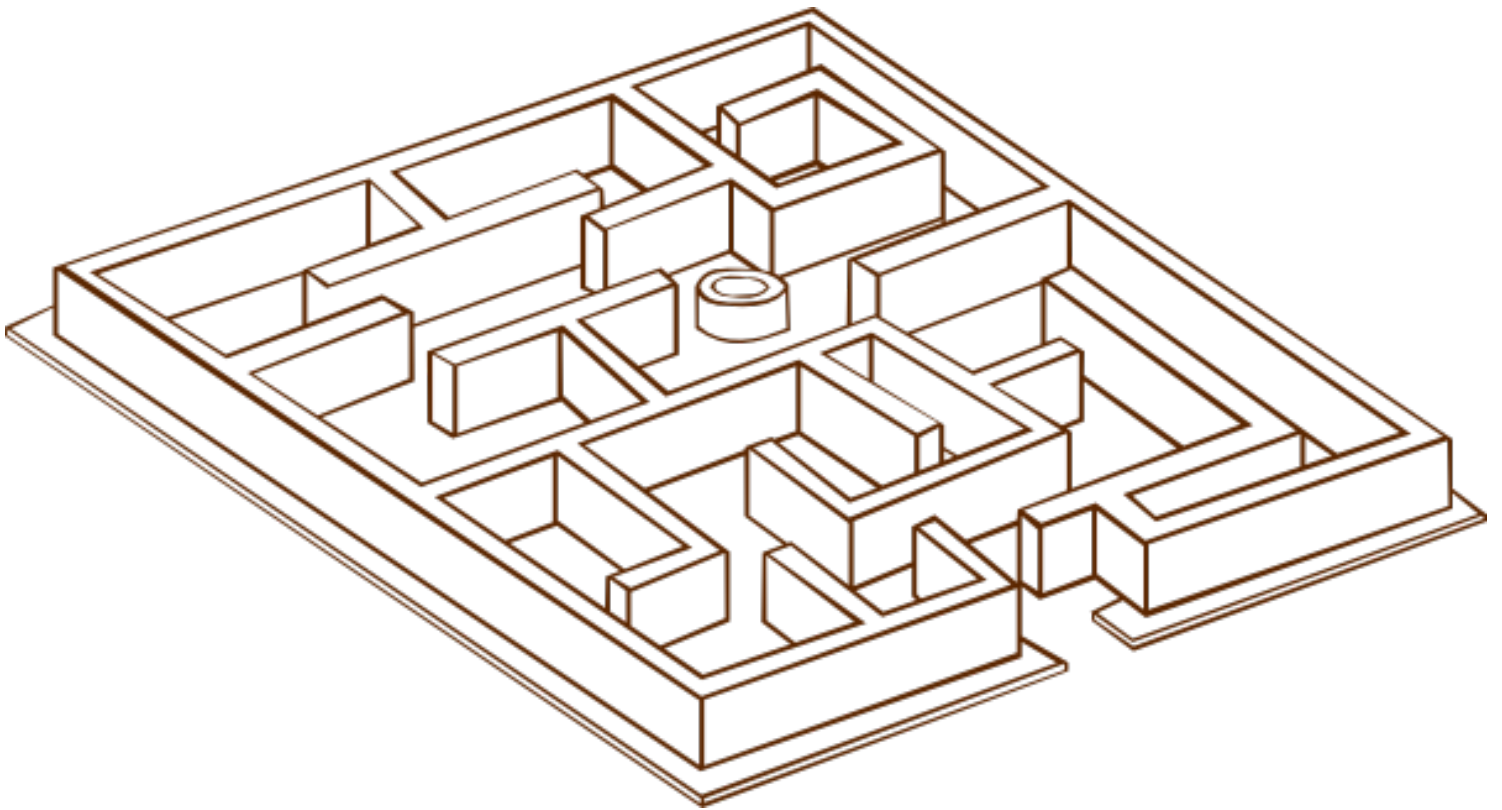


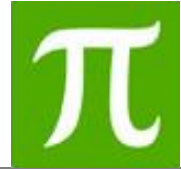


STEM MARBLE MAZE STUDENT PACKET

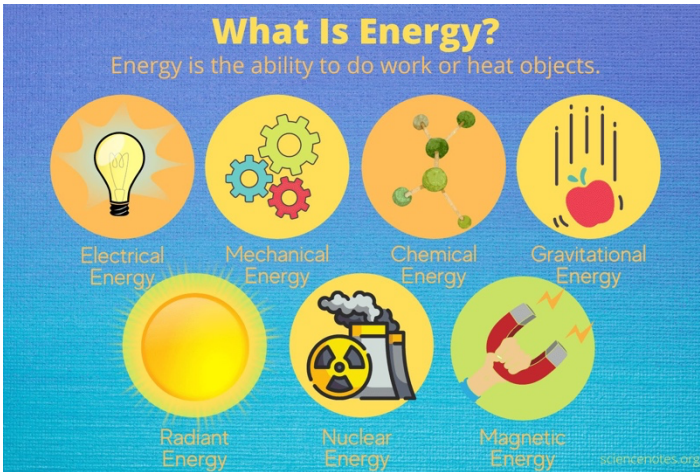


NAME

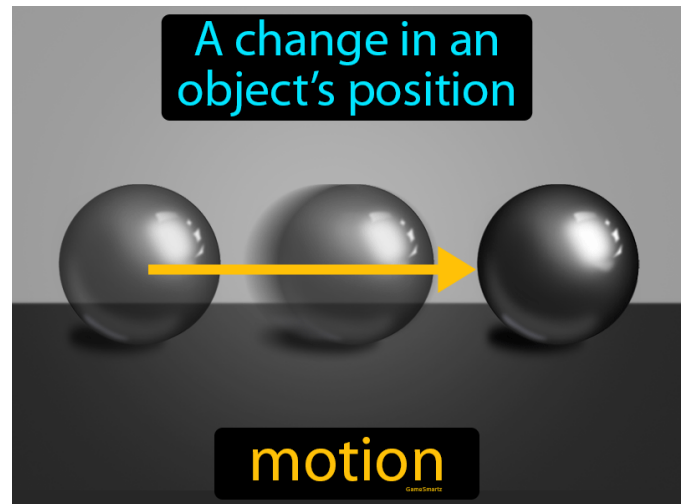
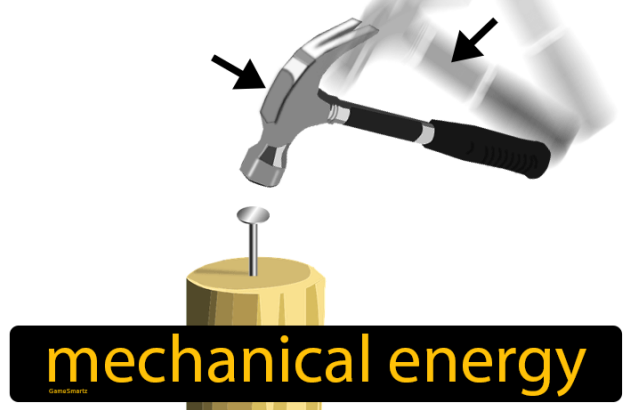
SECTION



STEM VOCABULARY



The sum of the kinetic and the potential energy of an object



pushes and pulls - forces and motion





STEM- Marble Maze

Building Background Knowledge

Working Packet

Directions: Click on the following links and respond to the questions below.

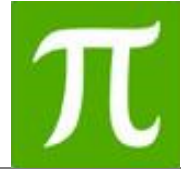
<https://app.discoveryeducation.com/learn/player/892d4ebe-8260-45e1-ba8d-330b167edf08?shared=true>

<https://www.campsilos.org/the-story-of-corn/students/amazing-mazes/>

<https://youtu.be/xnVHbxHBIAo?si=Ya6QLtrDVzjAnaIE>

Respond

1. What is the difference between a labyrinth and a maze?
2. What forces are needed to complete a marble maze?



Research

STEM Marble Maze

Group # _____

Section: _____

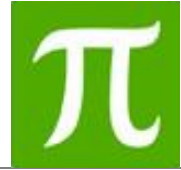
Student Name: _____

Partner's Name: _____

Challenge: How can you design and build a maze with two right angles and two dead ends, that can get a marble from beginning to end in less than 10 seconds?

Research

Directions: Search the internet and find **pictures and text** about different types of mazes.



Group # _____

Section: _____

Student Name: _____

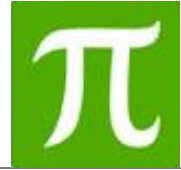
Partner's Name: _____

Design the Prototype

(Create a labeled diagram of your prototype.)

Materials

- | | |
|---|---|
| <ul style="list-style-type: none">• Construction paper• Cardstock paper• Index cards• Recycled pizza boxes | <ul style="list-style-type: none">• Crayons/pencils/colored pencils• Scissors• Ruler• Masking tape |
|---|---|



Group # _____

Section: _____

Student Name: _____

Partner's Name: _____

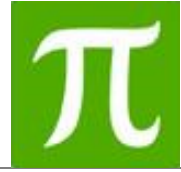
Test your Prototype - Collect your Data

Original Prototype

Calculate Perimeter ($P=2(l + w)$)

Calculate Area ($A=l \times w$)

Time (seconds):



Group # _____

Section: _____

Student Name: _____

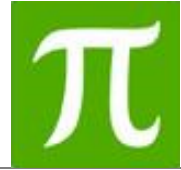
Partner's Name: _____

Improve the Prototype

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

Materials

- | | |
|---|---|
| <ul style="list-style-type: none">• Construction paper• Cardstock paper• Index cards• Recycled pizza boxes | <ul style="list-style-type: none">• Crayons/pencils/colored pencils• Scissors• Ruler• Masking tape |
|---|---|



Group # _____

Section: _____

Student Name: _____

Partner's Name: _____

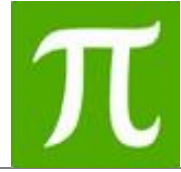
Test your Prototype - Collect your Data

Improved Prototype

Calculate Perimeter ($P=2(l + w)$)

Calculate Area ($A=l \times w$)

Time (seconds):



Group # _____

Section: _____

Student Name: _____

Partner's Name: _____

Reflection

1. In what way did you improve your prototype?

2. Do you expect the improved prototype to pass the challenge?
Why?

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

4. Record a video of each person in your group communicating the results of the challenge by sharing the following information and share it on Seesaw along with your graph.

- what was the project about
- what were the results of the 2 designs when tested
- what did you change in your redesign
- what would you do better



Create a Graph – Use Numbers and following the instructions below and create a graph. Share the graph on **Seesaw**.

Instructions: Create a graph on Numbers using the following parameters:

1. Must have a **title**.
2. Labeled X Axis (independent)
3. Labeled Y Axis (dependent)
4. Must be a Bar Graph