

Name: _____

Period: _____

7th GRADE TECHNOLOGY
Marble Rollercoaster



OBJECTIVE: Create a rollercoaster track for a marble with the LONGEST RUN TIME from start to finish.

Watch the videos and answer the following questions:

Define: _____

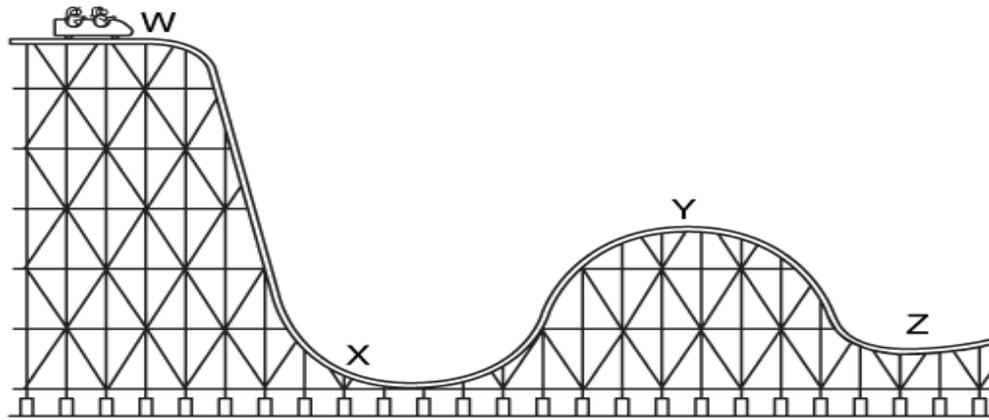
Law of Conservation of Energy-

Work-

Energy-

Kinetic Energy-

Potential Energy-



Use '<' and '>' signs to describe kinetic and potential energy at each of the following points

W:	Kinetic Energy	_____	Potential Energy
X:	Kinetic Energy	_____	Potential Energy
Y:	Kinetic Energy	_____	Potential Energy
Z:	Kinetic Energy	_____	Potential Energy

RULES:

- Teams will be assigned by the teacher.
- ONLY the materials provided can be used.
- You will have **3 days** to construct your coaster.
- You only get 1 set of materials per group. NO RESTARTING the project.
- Interfering with another team's structure will result in a loss of points for your team.
- Each team member must complete his/her own Activity Sheet and hand it in on time.
- Each team is responsible for cleaning up their area BEFORE the class ends each day.
- A ten minute and five minute warning will be given.
 - No further construction may occur beyond the five minute warning. CLEAN UP ONLY
- Testing will be done officially by the teacher and will occur on the final day of the project. Students may unofficially test their coasters on their own as much as they want.
- You CANNOT alter the base.
- Your final score is the average of three (3) official timed runs.

CRITERIA:

- The marble must start in the TOP LEFT and finish in the BOTTOM RIGHT corner of your coaster.
- The entire coaster must fit within a 12" x 10" x 18" box
- There must be a minimum of (1) free fall for the marble for at least 1".

- There must be one tunnel/ tube (fully enclosed) element a minimum of 4" long. The free fall cannot occur in the tunnel.
- Your roller coaster must have a name and a theme.
- There must be a bucket element at the end of the coaster to catch the marble.

SUPPLIES:

You can only use the following materials:

- 1- 12" x 10" poster board base
- 2- 11" x 17" (or 4- 8.5" x 11") sheets of construction paper
- 2- manila folders
- Masking tape
- Markers

You can use the following tools:

- Scissors
- Marbles (for unofficial testing only)

BRAINSTORMING IDEAS:

Create some sketches of ideas that you would like to use (FILL THIS SPACE)

FINAL DESIGN:

After building your coaster and testing it, draw your final design. Draw it from the top and side views

