

Name: _____ Date: _____ Team Members: _____

S.T.E.A.M. Activity – Rockin’ Rollercoasters

Today, you will be engineers of a rockin’ rollercoaster!
The materials that you will use are:

- Foam insulation tubes (dissected)
- Masking tape
- 1 Marble



Vocabulary Terms
Force: a push or pull on an object
Gravity: the force that pulls objects to Earth’s center
Potential Energy: energy that is stored
Kinetic Energy: energy in motion

In your group, your objective is to create a rollercoaster that has at least 1 loop, AND your marble MUST reach the end of your track without stopping or flying off the track. As you plan, test and revise your design, think about what you know about gravity, friction, and potential and kinetic energy. This activity is about trial and error...Perseverance is KEY!

STEP 1 – PLAN: What designs do you plan on incorporating into your design? Brainstorm with your group to come up with ideas. _____

STEP 2 – DRAW A DIAGRAM: Once you and your group agree on a design that will be successful, draw a quick sketch of the design.

STEP 3 – CREATE & TEST: Gather your materials and create your rollercoaster. Now test it out!

Did your marble complete the track without flying out or stopping? Explain what happened. _____

STEP 4 – REVISE & IMPROVE: If your group’s marble flew off the track or didn’t make it to the end, make changes to your design. Be sure to write down what changes you made below. Make sure you ONLY change ONE thing at a time, and KEEP TRYING! 😊 If you need more space, ask for an extra sheet of paper.

- | | | | | |
|----|-------|--------------------------|-----|----|
| 1. | _____ | Did it work? Circle one. | YES | NO |
| 2. | _____ | Did it work? Circle one. | YES | NO |
| 3. | _____ | Did it work? Circle one. | YES | NO |
| 4. | _____ | Did it work? Circle one. | YES | NO |

STEP 5 – EVALUATE RESULTS: At this point, you should have found a way to get your marble to the end of the track, so CONGRATULATIONS!

S. How did you use gravity in your design to make the marble reach the end of the track? _____

T. What types of rollercoaster designs did you learn about in this activity that helped you? _____

E. What design helped you become successful in this challenge? _____

A. Use the next page to draw the final design that worked for your group.

M. Using measuring tape, measure the length of foam tubing you used to create your rollercoaster in centimeters. _____

Group _____'S Rockin' Rollercoaster

