



A STEAM Energizer: Rollercoasters

STEAM Energizers by the Bucks IU FAB Lab Team are STEAM activities that are based off of Scholastic's Learning at Home resources, a free online resource for families. Click to read ["Built for Thrills"](#)!

No-Tech Activities:

- **Option 1 – Design a Rollercoaster:** Have your children/students sketch a design of a rollercoaster on paper. Using materials collected from around the house, have them build their design. They can test it out using a toy car or any object that will roll (oranges, marbles, etc.). Ask them how the angle or height impacts how fast the object moves. If you don't have materials, use a notebook or book and change the angle for you children/students to roll their objects
- **Option 2 – Potential and Kinetic Energy:** The science behind rollercoasters lies in the differences and changes in potential and kinetic energy. In order to help your children/students understand this concept, you will need either rubber bands or hair elastics and a ruler or an object to use to launch the elastic bands. Using the elastic bands and the ruler/object, children/students can experiment how pulling the elastic back to different lengths can impact the distance it travels. If you have chalk, you can take this experiment outside and mark the distance for every launch. NOTE: For safety, remind children/students that no one should be standing in front of the elastic bands during the experiment.

Some-Tech Activities:

- **Option 1 – Scholastic's Roller Coaster Engineer Game:** The link at the bottom of the "Built for Thrills" article allows children/students to create an online rollercoaster using a game! Check out ["Roller Coaster Engineer"](#) and use Scholastic's 'Continue the Learning Journey' to make a poster about the rollercoaster!
- **Option 2 – Virtual Rollercoaster Rides:** There are several rollercoasters that you can ride "virtually". Check out one of the tallest in the world, [Kingda Ka](#), at Six Flags in New Jersey. While you ride the rollercoaster discuss how the potential and kinetic energy changes throughout the ride. Take it a step further and try to design a model of some of Kingda Ka's features with recycled materials you have around the house!

