

Grade

6

Rollercoaster Mania

SCIENCE



Driving Question: Why is the first hill on a rollercoaster the longest?

Project Description:

Working in teams students designed, constructed and tested a roller coaster made out of piping insulation. Using a marble as a vehicle and through the testing of the model, they discovered how potential and kinetic are related and how they transform. Students tried and failed with multiple ideas until they came up with the best design. In addition, students discussed thermal and gravitational energy in relation to what they had learned, and submitted a short write up about their learning.



Student Products

- ▶ Design a rollercoaster using piping insulation
- ▶ Write rationale for design explaining key concepts

Teacher Reflection

"The roller coaster engineering challenge is an example of a high engagement, high-level thinking project. As students collaborate to create their coasters, they are continually having to identify weaknesses or problems in their designs in order to create solutions. I totally geek out as a teacher when I hear kids arguing over the positions of loops or the steepness of hills, all backed up with evidence and concepts of potential and kinetic energy!" - Brian Hall

"It is the project that the kids get most excited about. The one they are most involved in for 3 hours, it's one they can relate to.; rollercoasters make sense to them. It's one that is very accessible to all students, anyone can make a rollercoaster." - Jeff Barrons

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