

Teacher Page - Objectives

7.P.2

Explain how kinetic and potential energy contribute to the mechanical energy of an object

7.P.2.2 Explain how energy can be transformed from one form to another (specifically potential energy and kinetic energy) using a model or diagram of moving object (roller coaster, pendulum, or cars on ramps as examples).

7.P.2.4 Recognize that energy can be transferred from one system to another when two objects push or pull on each other over a distance (work) and electrical circuits require a complete loop through which an electrical current can pass.

- Title: Roller Coaster Tycoons
- Vocabulary: Potential Energy
- Kinetic Energy
- Mechanical Energy
- Redstone
- Rail
- Powered Rail

Activities -

- Information on Science Facts
- Video on how to build coasters
- Challenge - coolest coaster by October 9th gets a prize.
- Drawn diagram of coaster
- Each day show inspiring coaster vids to give ideas.
- Coaster Day on Oct 9th - Ms. Skipper or Science Teacher rides coasters and judges
- Evaluation: Rubric - Function, Appearance, Thrill



- ***FOR THE NEXT COUPLE WEEKS (TIL OCTOBER 9TH) WE ARE BUILDING ROLLER COASTERS IN JJ!***
- ***YOU CAN WORK IN GROUPS OF 2 OR BY YOURSELF IF YOU LIKE.***
- ***EACH DAY YOU WILL BE REQUIRED TO WORK ON THE COASTERS FOR AT LEAST 40 MINUTES.***
- ***THE REST OF CLASS, YOU ARE FREE TO EXPLORE THE WORLD AS YOU SEE FIT.***
- ***ON OCTOBER 9TH, WE WILL JUDGE THE COASTERS IN EACH CLASS.***
- ***THE ENGINEERS OF THE WINNING COASTER WILL WIN A PRIZE!***



To make RollerCoasters you need to know basic Science terms and a few basic Minecraft items. Knowing more wouldn't hurt :)

SCIENCE: Energy - force in an object that allows the object to do work.

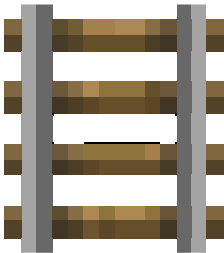
Potential Energy - Energy an object has because of where it is located due to gravity. *The higher the object, the more potential energy it has.*

Kinetic Energy - Energy that an object has because it is in motion. *Objects with more motion have more kinetic energy.*

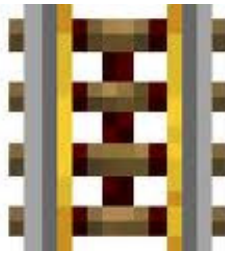
Acceleration - Is like speed (velocity) but it marks the change in speed within an object. *(Change in speed from stop to start).*

MINECRAFT:

RAIL



POWERED RAIL



REDSTONE TORCH



MINECART





YOURS WILL BE JUDGED ON THE FOLLOWING:

- 1. FUNCTION**
- 2. APPEARANCE**
- 3. THRILL**

HERE'S AN AMAZING ROLLERCOASTER TO GET YOU INSPIRED FOR AWESOMENESS!





YOUR JOB:

1. **DECIDE IF YOU ARE WORKING WITH A PARTNER OR ALONE.**
2. **FIND A PLACE IN JJ NEAR YOUR HOME THAT YOU CAN FIND AGAIN EASILY.**
3. **WORK ON YOUR ROLLERCOASTER FOR THE FIRST 40 MINUTES OF MINECRAFT CLASS.**
4. **WHEN THE ROLLERCOASTER TIME IS OVER, YOU MAY WORK ON OTHER PROJECTS IN MINECRAFT OR CONTINUE BUILDING THE BEST ROLLERCOASTER EVER!**

- **TIP: PLAN YOUR COASTER - THINK OF THE COASTERS YOU'VE RIDDEN IN YOUR LIFE.**
- **THINK ABOUT SCENERY (APPEARANCE) - IS IT INSIDE, OUTSIDE, OVER WATER, UNDERGROUND?**
- **IS IT THRILLING AND EXCITING OR ARE THERE SO MANY TURNS AND DIPS IT WOULD MAKE YOU PUKE?**

Mine on!