



First State Amusements Seeking Proposals for New Theme Park

The First State Amusement Park Co. has received approval to develop a new theme park in the state of Delaware! The company is looking for young creative companies to design exciting new rides. The new park will offer rides that demonstrate motion, force, and mechanical energy.

Your challenge is to create a design for one roller coaster ride that is safe and fun and demonstrates motion, force, and energy. Your

design will be submitted as part of a proposal that will include a poster, brochure, research, and a mini-design challenge.

Good luck!!



Project Specifications

1. Design a poster (model, or simulation, if your teacher prefers) that clearly depicts the entire ride. Give the ride a clever science-related name.
2. Create a brochure that explains the science features of the ride. The brochure may include words, diagrams, and pictures. The brochure must be included with your poster or model and must:
 - Explain how the ride safely transports passengers. (Use Newton's First Law in your explanation.)
 - Explain where the passengers are traveling the fastest speed.
 - Explain where the passengers will have the most force on them. (Hint: It is the section of track where the change in motion is the greatest)
 - Explain where work was done on the roller coaster car.
- Include an energy transfer diagram showing the varying amounts of potential energy, kinetic energy, and thermal energy at five different positions on the ride.

Project Research

In order to successfully design your coaster, you will need to understand how motion, force, and mechanical energy are related. You have already studied how motion and force are related by investigating automobile safety. You can apply the same ideas to a roller coaster car. Your teacher will guide you through a series of activities to help you get started. He/she may ask you to keep all of your work in a portfolio to hand in with your project.