

Why is it important to understand physics if you are designing a rollercoaster?

Physics can help me understand a lot about the motion of a rollercoaster. Roller coasters have to have a lot of potential energy in order to go really far and fast. The higher up the rollercoaster is, the more potential energy there is. There has to be a lot of kinetic energy for a rollercoaster to be fun. The kinetic energy is the energy of motion, so the more potential energy, the more kinetic energy, the faster it'll go. Gravity is the force that pulls things down. In this case, it causes roller coasters to go really fast at a big drop or a loop. Without a lot of gravity, the rollercoasters wouldn't be nearly as thrilling. They wouldn't go nearly as fast or far. If we didn't know about physics, we wouldn't know anything about the motion of a roller coaster.

You also need to know about physics to understand safety of roller coasters. At the end of the rollercoaster, you come to a safe, steady stop. That stop is because of the friction on the tracks and the brakes. Another element is inertia. Inertia means that an object in motion stays in motion, unless interfered by an unbalanced force. The humans in this case are the objects, and the seatbelt is the unbalanced force. Once the roller coaster stops, the humans would go flying out of the car, but the seatbelts stop them. As you can see, physics also has a lot to do with the safety of a rollercoaster.