Objective

By the end of this lesson, you will understand the basic principles of roller coasters and how they work.

Materials and Prep

- Paper
- Pencils
- Ruler
- Scissors
- Tape
- Optional: Toy cars or marbles

No prior knowledge is required for this lesson.

Activities

- Create a Roller Coaster Model: Using the materials provided, design and build your own mini roller coaster. Use the paper to create the track, and experiment with different shapes and slopes. Test your roller coaster by rolling a toy car or marble along the track to see how it behaves.
- 2. Roller Coaster Research: Research different types of roller coasters and their features. Find out about the tallest, fastest, and most thrilling roller coasters in the world. Make a list of interesting facts and create a poster or presentation to share your findings.
- 3. Virtual Roller Coaster Ride: Take a virtual roller coaster ride by watching videos of roller coasters in action. Pay attention to the different elements such as loops, twists, and drops. Write down your observations and discuss what makes a roller coaster exciting and fun.
- 4. Roller Coaster Safety: Learn about the importance of safety measures on roller coasters. Create a safety checklist that includes things like seat belts, height restrictions, and operator instructions. Discuss why these safety measures are necessary to protect riders.

Talking Points

- Roller coasters are thrilling amusement park rides that use gravity and momentum to create excitement.
- They are made up of tracks with various elements like drops, loops, twists, and turns.
- Gravity is the force that pulls objects towards the Earth. It helps roller coasters move downhill and gain speed.
- Momentum is the force that keeps objects moving. Roller coasters use momentum to carry riders through the track.
- When a roller coaster goes down a hill, it gains speed due to gravity. The higher the hill, the faster the coaster goes.
- Loops in roller coasters create the sensation of going upside down. The loop's shape and speed keep riders safely in their seats.
- Twists and turns in roller coasters add excitement and change the direction of the ride. They can make riders feel weightless or pressed against their seats.
- Roller coaster designers prioritize safety by including features like seat belts, height restrictions, and operator instructions.