

# Roller Coasters



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Roller coasters were inspired by giant ice slides in Russia.

# What Are Roller Coasters?

What goes up must come down.

Roller coasters are thrill rides. They're at **amusement parks**. People ride in wheeled cars. The cars ride on tracks. Chains carry cars up a steep slope. Cars reach the top. They roll down. They follow the track. They drop, rise, turn, loop, and stop.



Many people think roller coasters are exciting.

There are two types of roller coasters. Wooden roller coasters move up and down. They sway. Steel roller coasters have twists. They go high. They go fast.

Engineers must think about **forces** that affect human riders. Forces change. People need to feel the changes so that their muscles respond. If not, they could get hurt.



# Look!

^išit your člošešt amušešt park. Look at a roller čoašter. Iš it made of šteel or wood? ůow loů iš it? ůow ůi ů iš it? ůow maůy loopš đoeš it ůa<sup>v</sup>e?



Stored energy is potential energy. It changes to kinetic energy.



# How Do Roller Coasters Handle Energy?

Roller coasters don't have **engines**. They use potential **energy** from **gravity**. Cars are lifted to the top of the first hill. They collect energy this way. They store this energy. They have the most energy at the top. For big rides, engineers make bigger hills at the start of the ride. The first hills are the most important. This increases potential energy. Cars use their stored energy throughout the ride.



Gravity gives a downward force.

Cars go downhill. They go fast. They fall. Gravity pulls the cars down. Falling builds up energy. Stored energy changes to kinetic energy. Gravity is the force behind this energy. Cars zip around the tracks. Gravity keeps cars on the tracks. It keeps the ride going.



Cars at Canada's Wonderland can make it through loops because they have enough speed at the top of the loop.

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