The loops turn you upside down. The hills take you high. Then you come down fast.

Making roller coasters could be one of the coolest jobs ever. Yet creating a roller coaster isn't simple. It's not only about planning where loops and twists go. Yes, a roller coaster must be fun. It also must be safe.

About 100 American companies create coasters. These companies have many different types of engineers, or people who create the ride. Some engineers create how the roller coaster looks. Other engineers plan how it will run. Others decide how to build the cars.

**Ask Questions First, Design Later**
Engineers must first ask what the park wants. Will the coaster’s tracks be made from wood or steel? How many riders must it fit? Will it be a gentle, slow ride? Or is the ride fast with tall hills and loops?

Coasters can still be made with wooden tracks. Most use steel, though. Steel is a hard and heavy metal material. Many buildings use steel.

Most wooden coasters have no loops. They also aren’t as fast. Coasters with steel tracks can have steeper hills and deeper drops. Yet wooden coasters sway when you ride them!

**Engineers Decide Where The Drops Go**

Engineers might not want only big hills. One other possibility is adding a drop with a quick change to a flat part. This is called a "slammer." Riders are slammed back into their seats.

Engineers can use computers to find just the right force. They do not want riders to pass out!

![Diagram showing roller coaster track with hills and drops.](Image 3. This graphic is meant to show how a roller coaster's hills tend to get less steep as the ride goes on. This is important for the roller coaster designer. Image: Wikimedia Commons)

After the park approves the plan, the coaster is built. Workers build steel tracks in parts. Later, they’re put together at the park. Wooden tracks are built at the park.

**Coaster Cars Are Made From Fiberglass**
Other workers build the roller coaster cars. The cars are made from hard elements including fiberglass. This is another hard material. Some boats are made of fiberglass. It is the material on the outside of the car.

Finally, the coaster is tested for safety. The cars are filled with sandbags. The bags weigh as much as riders. Government workers must approve. Usually a year from the start of creating the ride, the day comes. Roller coaster fans line up for the first ride!

**Engineers Learn On The Job**

Roller coaster engineers do not go to special schools. They go to college for engineering. After that, they learn from others who make coasters. Kent Seko creates roller coasters. Seko says his job is great.

So grab your pencil and start drawing. Maybe someday you'll make the next amazing coaster!
Dream Jobs: Designing thrilling rides

Write a short paragraph that explains the central idea of the article. Use at least two details from the article to support your response.

Central Idea:

Fact 1

Fact 2

Would You Like to Build a Roller Coaster? [Watch this video on how one roller coaster was built]