The Thrill of the Ride
Lesson 128
Paired with Mysterious Laws of Motion
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The sun peeked through the only two clouds in the sky. Amir and Salma watched the morning light fall on an enormous Ferris wheel, towering roller coasters, and endless rows of carnival games. Thrillsville Gardens was theirs for one whole day.

“What should we do first?” Salma asked.

“It’s so hard to decide,” Amir replied. “I mean, look at all this stuff.”

“Hey, I have an idea! Let’s find the fastest ride in the park and start there,” Salma said.

Amir’s smile grew as wide as a house. “You’re a genius,” he said. “But how do we know which one is the fastest?”

“Let’s ask at the information booth,” Salma said. “I see it over there.”

“Excuse me,” Amir said to the booth attendant. “Can you tell us which ride in the park is the fastest?”

“You can read all about the park in this brochure,” the attendant replied, and he handed each of them a little book called All About Thrillsville Gardens.

Salma looked down at the brochure and thumbed through a few pages. “Look, Amir,” she said. “Here’s a bar graph that shows us how fast some of the rides go.”

“Yeah, I’ve seen bar graphs like this in math class,” Amir said. “Each ride has two colored bars that match up with numbers on the left side of the graph. I think the numbers tell us how fast the rides go. The blue bars show each ride’s speed in kilometers per hour, and the red bars show each ride’s speed in miles per hour. The ride with the tallest bars on the graph must be the ride with the fastest speed.”

“So it looks like Roller Coaster 2 is the fastest in the park,” Salma said.
“Wow! I don’t know about you,” Amir said, “but I’m ready to try it!”

Salma was already off and running. “I’ll beat you there!” she called out behind her.

When they finally reached the roller coaster, they were at the end of the longest line of people they had ever seen.

“It looks like everyone else in the park beat us both here,” Amir said with a sigh. “I guess we’ll be waiting awhile.”

He looked down at the brochure in his hand. “Do you think there’s anything else about roller coasters in here?”

“Hmm, let me see,” Salma said as she looked through the rest of the brochure. “Here’s something—listen to this:

“Part of the thrill of a roller coaster comes from all the changes in speed and direction you experience during the ride. Sir Isaac Newton’s First Law of Motion says that objects keep moving at the same speed and in the same direction, unless something else affects them.”

Amir looked up at the people zooming around on the roller coaster while Salma kept reading.

“After the roller coaster speeds down a big hill, your body wants to keep moving downward in the same direction you are currently moving. So when the roller coaster quickly changes direction and starts moving up the next hill at a fast speed, you feel pushed down in your seat and you feel very heavy.”
“When you reach the top of the next hill, your body wants to keep moving upward in the same direction you are currently moving. So when you suddenly change direction and start traveling downhill again, you might feel very light—almost like you’re floating out of your seat.

“You experience a similar effect when the roller coaster suddenly turns left or right. You might even feel like you’re going to fly off the side of the track, which some say is part of the fun! On a roller coaster ride, your body feels many intense forces, at high speeds, in a short amount of time.”

Amir was still gazing up at the roller coaster. “No wonder it’s such a rush!” he said. “I can’t wait!”

“It looks like you won’t have to,” Salma replied. The line had moved quickly, and it was finally their turn to get on the fastest ride at Thrillsville Gardens.

And they spent the rest of the day moving up, down, and side to side on every ride in the park.