

# Eduardo and Maria's Wonderful Summer

## A Frictional Adventure

### CHAPTER 1

"I'm bored!" said Eduardo.

"Me, too!" said Maria.



"Now children, school has only been out for a week," said their mother. "Surely you can't be bored so soon!"

"There's nothing to do," said Maria.

"All our friends are at camp," said Eduardo.

"Well," said their mother, "you're going to do something much better than camp! Next week you're going to visit your friend Albert. The week after that you'll stay with Jennifer."

"What's so great about Albert and Jennifer?" asked Eduardo. "We haven't seen them since they were little kids."

"You were little kids, too, back then," reminded their mother. "You all are almost the same age. Besides it's not just Albert and Jennifer who are exciting – it's where they live! Albert lives in Sticky World and Jennifer lives in Slippery World. Just wait till you see what that's like!"

"OK," said Eduardo, "but this better be good!"

*Guess what will be unusual about "sticky world" and "slippery world".*

## CHAPTER 2

"Notice how slow the bus is going?" asked Eduardo. He was looking out the window at the trees inching past.

"Yeah," agreed Maria. "It's been doing that ever since we entered Sticky World. The motor sounds like it's working really hard, too!"

"I hope we make it!" said Eduardo.

Just then the bus driver called out, "Ladies and gentlemen, we're about to stop in Sticky World, Mind your step as you exit the bus – things are a little different here from what you're used to!"

The bus came to a sudden stop. Maria and Eduardo looked out and saw Albert and his Mom and Dad standing on the sidewalk. They waved to them. Then they got their luggage out of the rack and ran to the front of the bus to be the first ones off.

"Careful!" said the bus driver, but Eduardo and Maria weren't listening. They jumped off the bus and tried to run to their friend, but as soon as their feet touched the pavement they stuck there. Eduardo and Maria fell over and lay on the sidewalk, looking up at Albert who was coming to them as fast as he could.



There was something strange about the way Albert was moving. For one thing, he wasn't moving very fast. Also, he was picking his feet up awfully high with every step he took.

"Hi!" said Albert, when he finally got close enough to talk without yelling, "I'm glad you made it! Did you have a good trip? Here, let me help you up." Albert held out a hand to Maria and yanked her to her feet, and then he did the same thing for Eduardo.

"Don't be embarrassed about falling down like that," Albert said. "Everybody does it the first time. Sticky World takes a little getting used to."

"You see," he continued, "Sticky World is just like Normal World where you come from, except for one thing: the force of friction is much greater here than in Normal World."

"What's friction?" asked Eduardo. He thought he knew the answer, but he wasn't sure.

"Friction is the force that sticks things together," answered Albert. "It's what keeps you from slipping and sliding all over the place."

"I get it," said Maria. "That's why our feet stuck to the pavement when we got off the bus."

"And we tripped!" said Eduardo.

"Right," said Albert, "Around here you have to learn to walk like this." And he showed them how to pick their feet straight up so they wouldn't get stuck.

"This stinks!" said Eduardo. He said it softly, but Albert heard him anyway.

"Oh, no, it doesn't!" He said, "Wait till you see all the neat things you can do in Sticky World!"

## CHAPTER 3

As soon as Eduardo and Maria had met Albert's parents they all piled into their car and took off for home. On the way, Eduardo and Maria noticed that the car was going awfully slowly even though the road was perfectly flat. They were getting sadder and sadder – what fun could you have in a world where everything stuck together like this?

When they got to Albert's house, though, they started to change their mind. For one thing, it was a very pretty house, made of brick and two stories high with an extra room way at the top where the chimney came out. There were boxes under every window full of red and yellow flowers, and a tall oak tree in the front yard.

"That's my room," said Albert, pointing to the little room at the top. "Watch how I get to it."

Albert walked over to the house and then a surprising thing happened! Albert walked right up the wall, using his hands and feet like Spiderman! Eduardo and Maria were amazed!



In no time at all, Albert had reached the roof of the house. He walked along the wall sideways until he came to his room. Then he opened the window with one hand, holding on with the other. He crawled in, turned around, and reappeared at the window, smiling down at them and waving.

"How did you do that?" yelled Maria. "What are you, some kind of acrobat?"

"Anyone can do it," Albert called down. "Come on, you try!"

So they did. It was a little scary at first, but Maria and Eduardo found that it was really pretty easy to walk up and down walls in Sticky World. They spent the rest of the afternoon practicing, and pretty soon they were almost as good as Spiderman himself.



## CHAPTER 4

The week had gone by very quickly.

"Goodbye," said Maria. "I had a wonderful time!"

"Me, too!" said Eduardo. "It's going to feel strange going back to not sticking to things."

"I can't imagine what that's like," said Albert, who had lived his whole life in Sticky World. "I'd probably fall down all the time."

"That may happen to us, too," said Maria. "Remember, we're not going home yet. We're going directly from here to our friend Jennifer's house. She lives in Slippery World where there's practically no friction at all. I wonder what that will be like."

"Here comes your bus," said Albert's mother. "Do you have all your stuff with you? Do you have your tickets?"

Eduardo and Maria got on the bus.

"Have a good time," said Albert's mother. "I'm sure you'll find interesting things to do in Slippery World!"

## CHAPTER 5

"I'm going to be real careful getting off the bus this time," said Maria. They had just stopped at Slippery World. Maria and Eduardo could see their friend Jennifer waving at them madly. She was trying to say something, but they couldn't hear her through the bus window.

"Watch your step!" said the bus driver, as Eduardo stepped out of the bus. "It's kind of slippery out there!"

Oops! Eduardo was careful but not careful enough. His feet slipped out from under him and he sat down rather suddenly. From the bus, the ground where he was sitting had seemed perfectly level but now that he was sitting on it he found that it sloped slightly. He started to slide downhill, going faster and faster, until he banged up against a wall and stopped.



"Look out, here I come!" Maria yelled. She had fallen down too and now she was sliding right at Eduardo. She slammed into the wall beside him. "Oof!" she said.

"Boy, this place is really dangerous," said Eduardo. "I wonder how Jennifer can stand it!"

"Well, you can ask her," replied Maria, "because here she comes."

Jennifer was gliding over to them. She was wearing ordinary shoes, but she seemed to be ice skating. It looked very graceful and easy. It also looked like a lot of fun!

"Welcome to Slippery World!" said Jennifer, "I'm sorry you fell. There's a bit of a hill, I'm afraid. Are you hurt?"

Eduardo's arm was scraped where he had hit the wall, but he said: "No, I'm fine." Maria said: "I guess we're going to have to learn to walk all over again."

"It's not hard," said Jennifer, "you just dig your heel in like this and push off." And she demonstrated, gliding away just as if she were on skates.

"The thing is," she added, over her shoulder, "there isn't much friction here, so you have to pull or push on something if you want to stop or change direction." She demonstrated by digging in her heel again, making little ruts in the ground and coming to a stop.



"It looks like this place might be fun, too," said Eduardo.

## CHAPTER 6

Eduardo and Maria practiced and practiced until they were pretty good at sliding around in Slippery World. They learned how to start and how to turn. Stopping was the hardest. When they tried to dig their heels in the way Jennifer had done, they would lose their balance and sit down very suddenly. And then they would keep right on sliding until they hit something. It took quite a while for them to get it right.

Finally Jennifer announced, "I think it's time for us to go home now. This street leads to my house. It dips down a bit, so you'll get going faster and faster, but don't worry. After a while it goes up and that will slow you down. Just keep both feet on the ground, don't try anything fancy, and you'll coast to my house with no effort at all."

"How far is it?" asked Eduardo.

"About three miles."

"And we can coast the whole way?"

"Sure! Sometimes we'll be going pretty fast, like down in the valley, and other times we'll go more slowly, but we'll get there. As long as you don't hit anything!"

Jennifer pushed off on one foot and headed slowly down the street. Eduardo and Maria followed her cautiously. Although they hadn't noticed it before, the street sloped downward just a bit and without even trying they found that they were going faster and faster.

"This must be what Jennifer meant when she talked about going into the 'valley,'" said Maria.

"It's not much of a valley!" said Eduardo.

"It's not much, but it's enough to get us going pretty fast, anyway!" said Maria. Indeed, she and Eduardo were going so fast that she could feel the wind in her face. She started to worry that she was going to hit a tree or something.

Just when Maria was about to try digging in her heels to slow down, the street started to slope upward and she and Eduardo started to slow down.

"Whew!" said Maria. "That was scary!"

Jennifer was waiting for them at the top of this hill, standing in front of her house. She clapped her hands as they skated up to her. "That was great," she said. "You guys are really good skaters!"

## CHAPTER 7

A week had gone by and Maria and Eduardo were back at the bus station.

"It's been a lot of fun," said Eduardo, "and I'm really going to miss you, but..."

"I know," said Jennifer, "I'm sure you miss your Mom and Dad, too."

"It's not just that," said Maria. "There are a lot of cool things about a world with practically no friction, but I don't know..."

"It's just not the same." Eduardo said. "I mean, it's cool to be able to skate everywhere, and those slides in the park are really great, but I'm really looking forward to having my dinner plate stay where I put it."

"You know what?" said Maria, as the bus came into view, "There's just no place like home."

**THE END**



What is friction?

Which would you rather visit, Slippery World or Sticky World? Why?