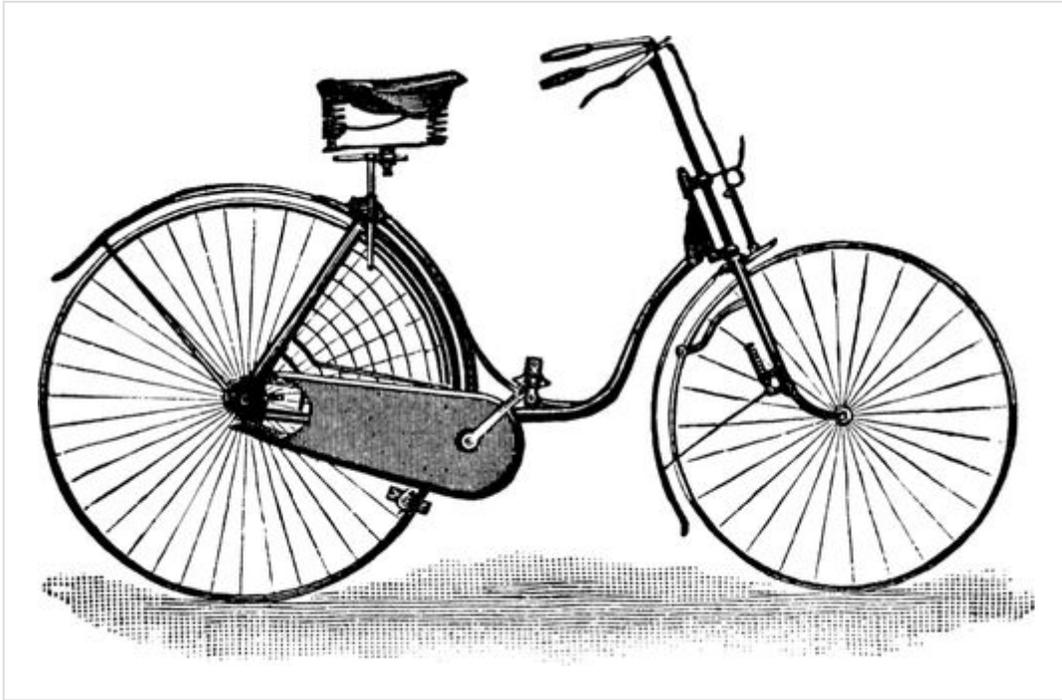


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Fixing My Sister's Bike



I love to fix things. I'm only eight years old, but I can figure lots of stuff out by myself. I want to be a scientist when I grow up.

Last week, the red, shiny reflector came off my sister's bicycle seat. My sister Ariel said she wanted to take it to the bicycle repair shop to be fixed.

"No way!" I stopped her. "I know how to fix things, so I'll fix this too!"

"Well, it had better work!" Ariel said. She looked like she didn't believe me.

I got some rope from the closet, and I tied the reflector right back onto the bike. It dangled a little bit, but it still worked just fine.

"It looks messy," Ariel said.

When my dad came home, I showed him how I had fixed the bike.

“Do you think that’s the best solution?” he asked me.

I looked over at the reflector. On second glance, it didn’t look that secure after all. There were some pieces of rope hanging off.

I shrugged.

“Yes! It’s fine!” I said.

I thought it was the best solution. I had come up with it, after all, so it had to be the best.

“Okay,” he said. “Let’s see how long it stays attached to the bike.”

My dad said he was proud of me for taking initiative. That means I see something that needs to be fixed and do it without being told!

“I think I have a new lesson for you, though,” Dad said. “I want to show you how to conduct an experiment.”

I had come up with a solution to a problem, and now the second step was to test it under different conditions.

I asked my sister when she was planning to go for a bike ride. She said at 2:00 p.m.

I grabbed a pen and a piece of paper and made two columns on the paper. One column said GOOD, and one column said BAD. At 2:00, I went outside to watch her ride.

First, she rode down the sidewalk and the reflector stayed on. I made a checkmark in the GOOD column.

Next, she went over a bump and the reflector stayed on. I made another checkmark. Good again!

Then, she rode underneath a tree. *Uh oh!* I knew what was coming next.

One of the branches from the tree swept across the back of her bike, and the next thing I knew the whole reflector was untied and on the ground!

Ariel cried out, "My reflector!"

I made another checkmark, this time in the column that said BAD.

"Back to the drawing board!" I said.

"Grrr!" said Ariel.

Later that night, my dad and I sat down with my paper to look at the checkmarks.

"Under what conditions did the reflector stay on the bike?" he asked me.

I looked. "Well, it stayed on when the bike was riding normally, but it fell off when it was hit by that tree branch."

"What you have on that sheet of paper is called *scientific data*," Dad said. "What do you think you can learn from this?"

"I don't think the rope worked very well," I said.

"I don't think so, either," he said. "But you did have to test it first to be sure."

"Well, I tested it and now I know."

"What will hold the reflector on a little bit better?"

"Let's use glue!" I said.

We went downstairs, where the family keeps all our tools. Dad pulled the bike up onto the bench and took out the Super Glue.

I'm not allowed to use strong glue by myself. So we did this part together.

We let the glue dry overnight, and the next day I conducted my experiment all over again.

“You’re not going to break my reflector again, are you?” my sister asked. She looked a little mad and suspicious.

“Well, I don’t think so,” I told her. “But that’s what this experiment is for. Do you trust me?”

“I guess so,” Ariel said. “But mainly because Dad helped this time!” She stuck her tongue out at me.

I made her ride the bike exactly the same way she had the last time so that we could try to recreate the conditions. This is important in a scientific experiment.

She rode down the sidewalk. The reflector stayed on. So far, so good!

Then, I had her go over the bump again. The reflector stayed on. I made another checkmark. But now it was time for the final test.

“Okay, get ready!” I yelled. “It’s time to ride under the tree!”

Just like last time, my sister rode under the tree. However, this time, the reflector stayed on the bike.

“Yay! It didn’t fall off!” Ariel squealed happily.

I was pretty proud myself. I made a great big checkmark in the GOOD column, and then drew a smiley face just for fun.

I turned around to see that my dad had been watching the entire time.

“Excellent work, little scientist,” he said. “You recreated the experiment and found the solution to your sister’s bike problem.”

“And I saved us a trip to the bike shop!” I said.

“You sure did,” Ariel said. And then she gave me a great big hug.