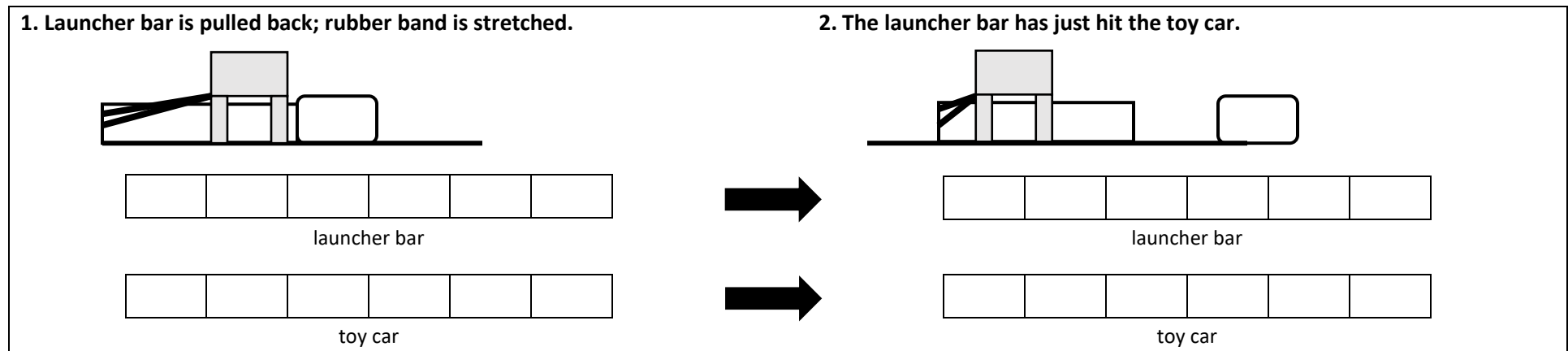


System Diagram Toy Car Launcher

1. Launcher bar is pulled back; rubber band is stretched.



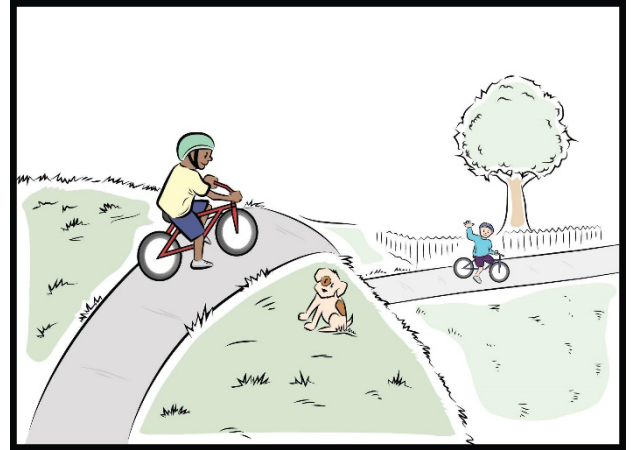
2. The launcher bar has just hit the toy car.



Mumford and Leroy's Big Crash!

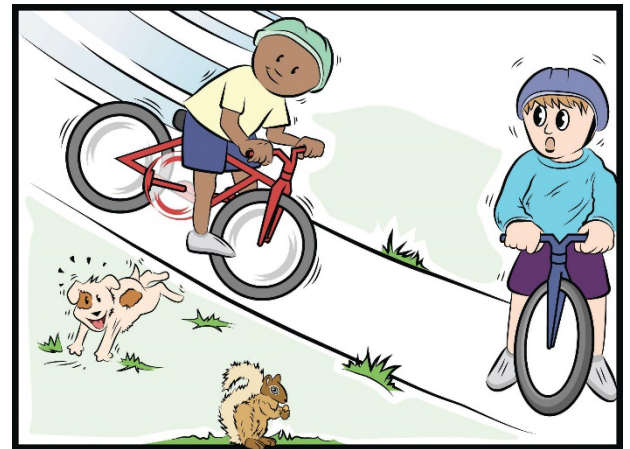
Part 1

It was a bright, warm spring morning when Mumford hopped on his bicycle to meet up with his friend Leroy for a day of adventure. His dog, Spots, was coming along and ran beside Mumford. He rode up to the top of the big hill that was between his house and Leroy's.



Mumford stopped just before heading down the hill. This was his favorite part of riding to Leroy's house. With just a little push, his bicycle would pick up speed, faster and faster, as he coasted down the hill. Mumford could see Leroy waiting on his bicycle at the bottom of the hill. He decided he would let his bike coast right by Leroy. Mumford wanted all the speed he could get as he went down the hill. Leroy would have to catch up if he could!

Soon after Mumford took off, Spots started barking at a squirrel! Mumford took his eyes off the sidewalk to figure out why Spots was making so much noise. Mumford wasn't watching where he was going and didn't realize he was on a collision course headed straight for his friend Leroy!

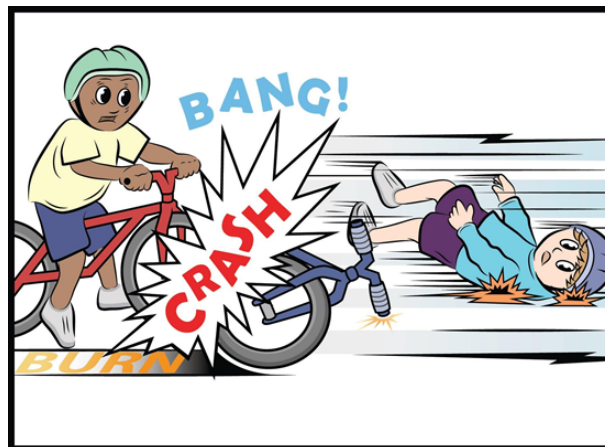


Make a prediction in your science notebook about what you think will happen next before reading Part 2 of the story.

Part 2

Mumford looked up just before he hit Leroy and used his brakes as hard as he could. He left warm rubber skid marks on the sidewalk.

Even though he used his brakes, Mumford was still traveling pretty fast when his bike hit Leroy. When the two boys and their bikes collided, there was a loud crash as Mumford and his bike came to a sudden stop.



Leroy, who had been standing still when Mumford crashed into him, skidded across the sidewalk several feet. Leroy's shirt had a hole and his shoulder felt hot where he slid on it across the sidewalk. Sparks went flying where the metal from Leroy's bike hit the concrete sidewalk.

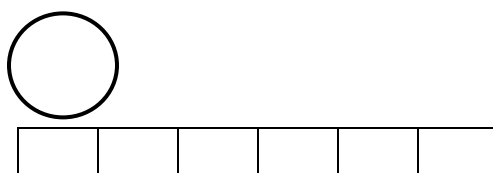
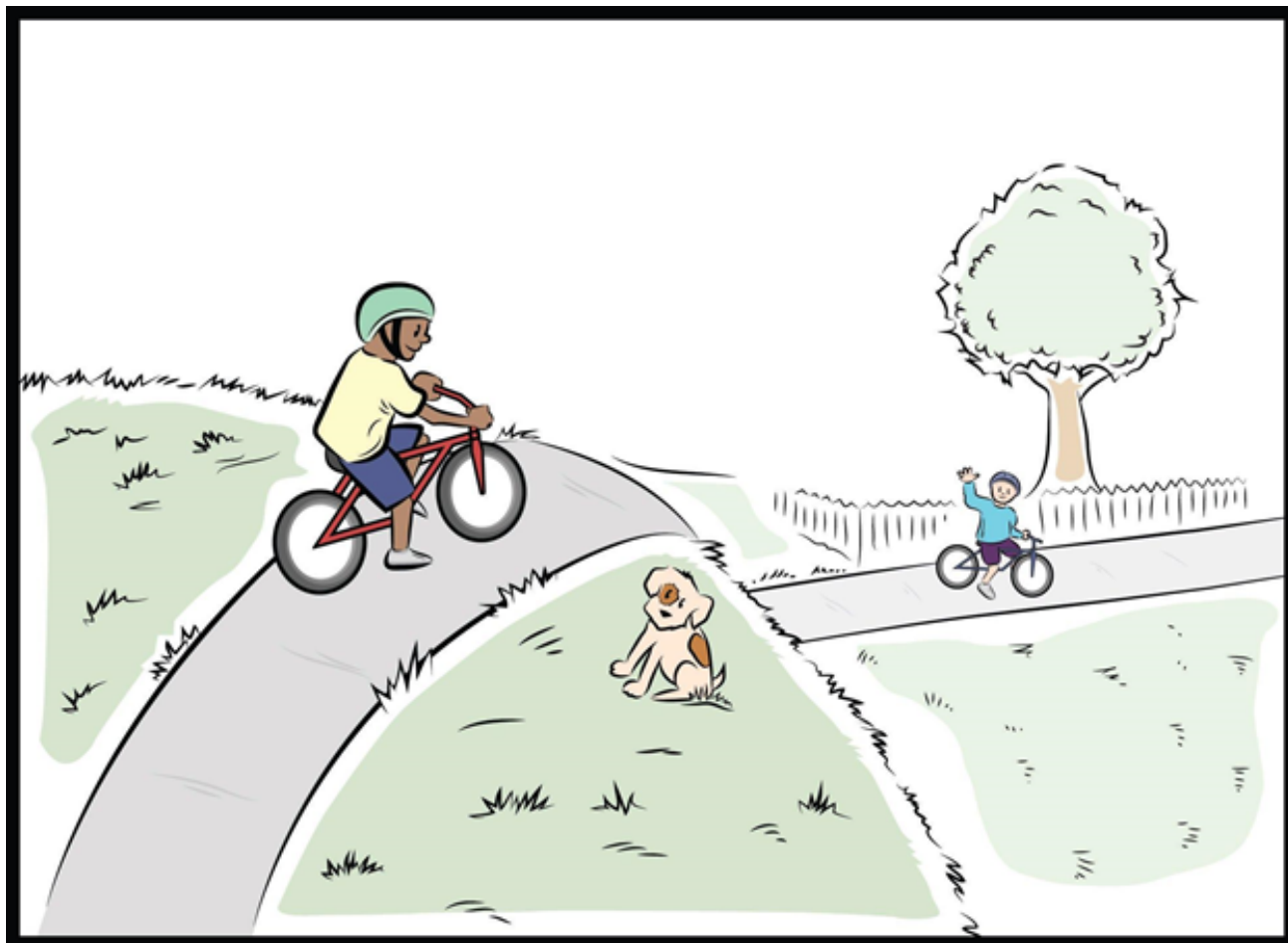
Leroy and Mumford were both wearing their bike helmets. They were very lucky that neither one of them was hurt when their bicycles collided. Mumford apologized to Leroy and promised to watch where he was going from now on. Both boys laughed and rode off to continue their adventure.



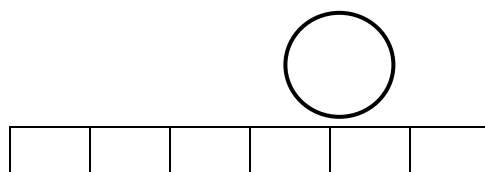
Make a list of all the observable changes that happened when Mumford started down the hill and then collided with Leroy.

Mumford and Leroy's Collision

1. Mumford is at the top of the hill. Leroy is at the bottom of the hill.



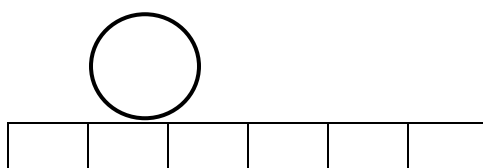
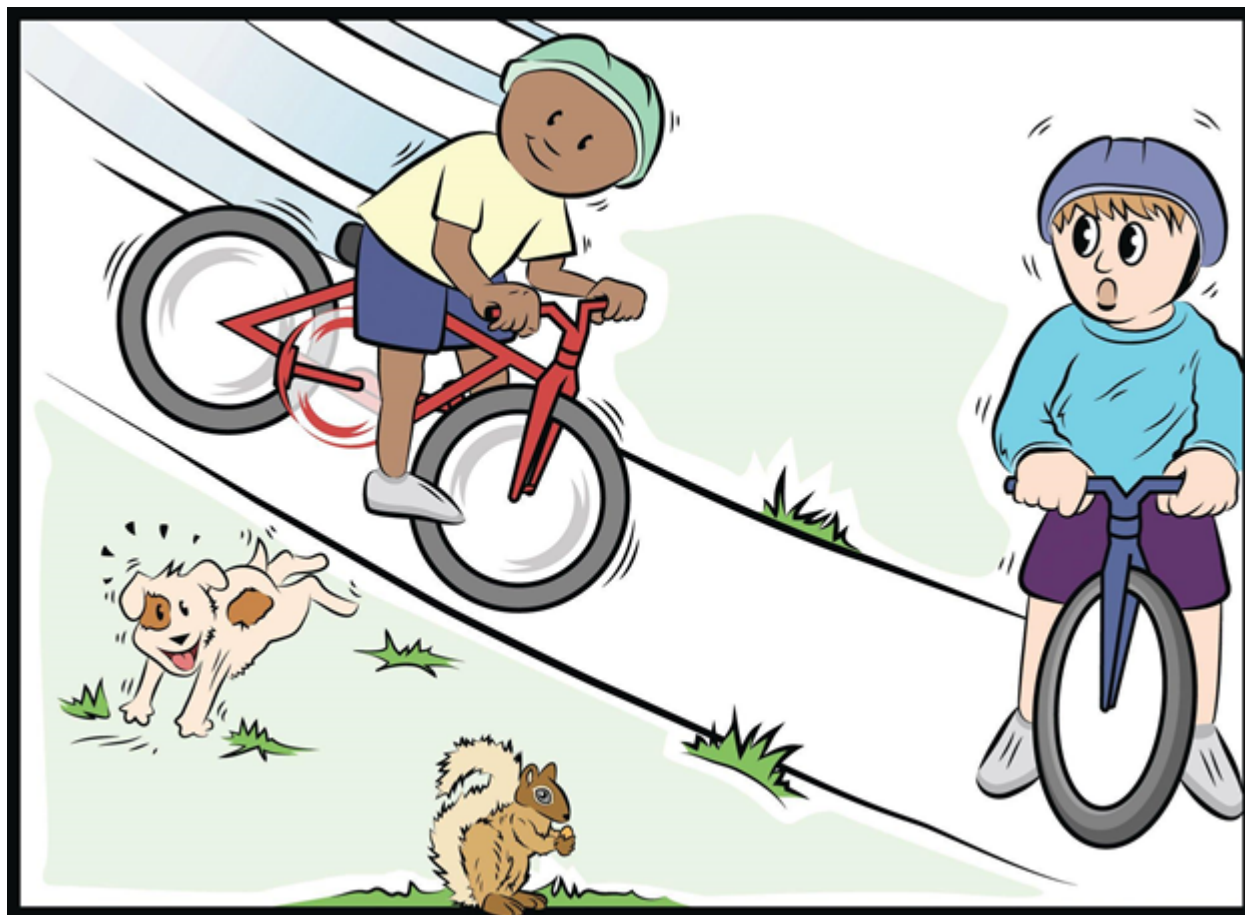
Mumford (red bicycle)



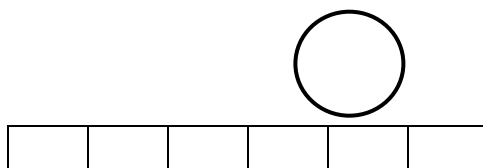
Leroy (blue bicycle)

Mumford and Leroy's Collision

2. Mumford is rolling down the hill. Leroy is at the bottom of the hill.



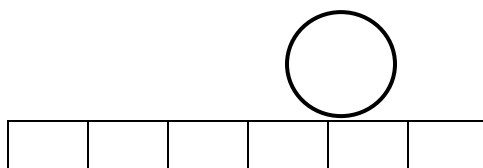
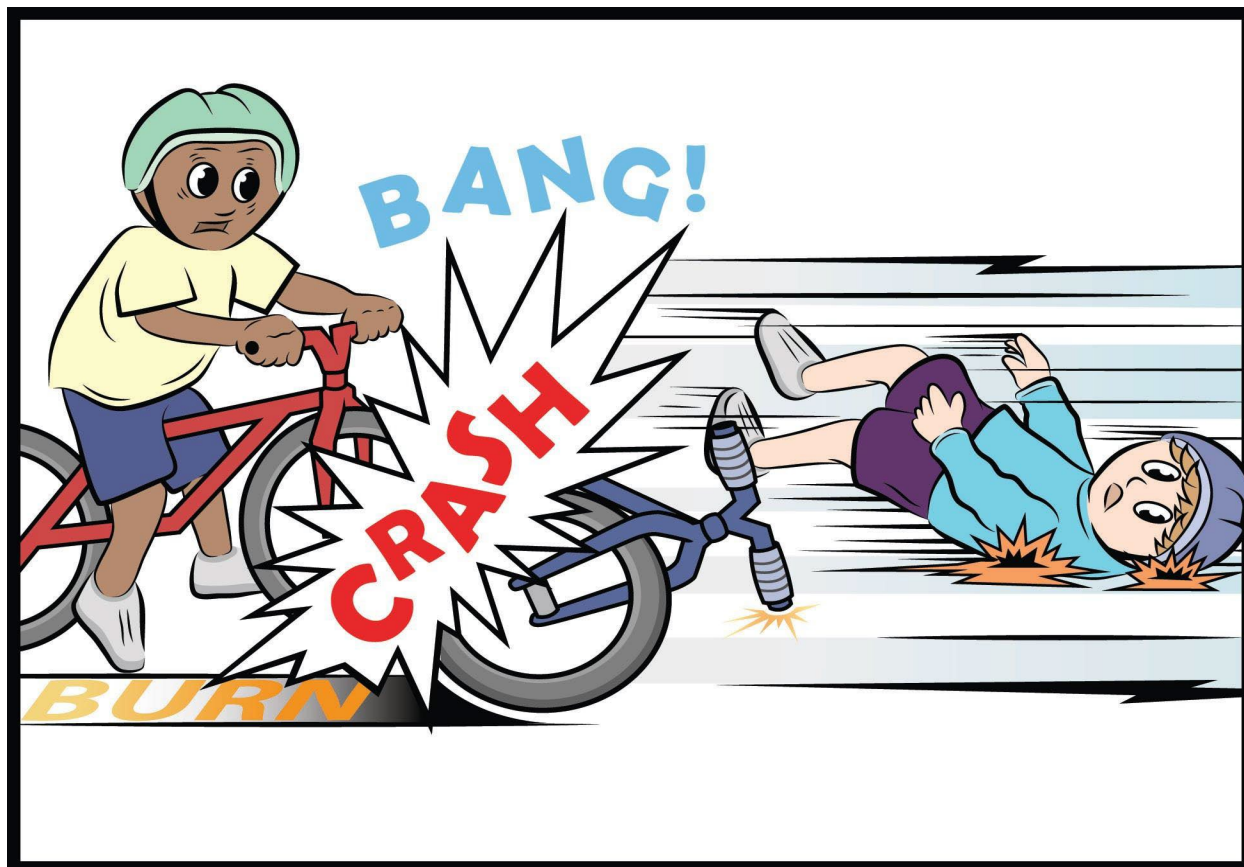
Mumford (red bicycle)



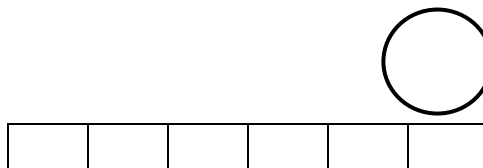
Leroy (blue bicycle)

Mumford and Leroy's Collision

3. Mumford collides with Leroy.



Mumford (red bicycle)



Leroy (blue bicycle)