



Activity: Car Race

What You'll Need:

Included in the kit:

- 2 mini cars (or you can also use your own small cars, like Hot Wheels)

Not included in the kit:

- Paper
- Glue
- Sand

Procedure:

CAR RACE: MOTION AND FRICTION
<p style="text-align: center;">Step 1</p> <p style="text-align: center;">Locate a large level surface for this experiment.</p>
<p style="text-align: center;">Step 2</p> <p>Next, we will create our racetrack surfaces. You will need at least 2 pieces of paper. Use a glue stick or a small amount of glue to adhere bits of sand to a piece of paper. Then, let it dry. Optional: Create additional racetracks using sandpaper, wax paper, paper towel, cling wrap, foil, etc. This is how we create surfaces with different friction to test the car's motion. For comparison, you should also have a plain piece of paper, to compare race results on that 'track' with the other 'track' surfaces you create.</p>
<p style="text-align: center;">Step 3</p> <p>Now you can test each track to see how your cars perform as your cars race on different track surfaces. Record your results each time and then study what you've written down. Which track had the most friction, causing the car to be slowest? Which one was the car fastest on?</p>

The purpose of this experiment is to find out whether the texture of a surface will affect the distance or speed traveled by the car.

OPTIONS

See what happens when you find a ramp for your cars to travel down. (A ramp is an inclined plane, a flat supporting surface tilted at an angle, with one end higher than the other.) If you place each 'surface' created on a ramp, do you think the outcome will be different?



The Science Behind It:

By observing the speed of a toy car on different surfaces, we can identify and describe friction as a force that opposes motion. When the cars race on the different 'racetrack' surfaces, we are able to see changes in position, direction, and speed of the car.

Friction can be both a positive and negative thing in our everyday lives. For example, when we ride in a vehicle, friction slows down the vehicle when the driver uses the breaks; this is a positive as it keeps us safe by helping to prevent accidents. On the other hand, there are times friction makes things difficult for us; pushing furniture around on carpet is one example. What if you tried to wear soccer cleats to play basketball on a regular basketball court? Those are shoes that have spikes on the cleats to help with playing on a surface such as grass outside. On a smoother surface, like a basketball court, you would experience friction wearing soccer cleats, making it difficult to move around on the basketball court.