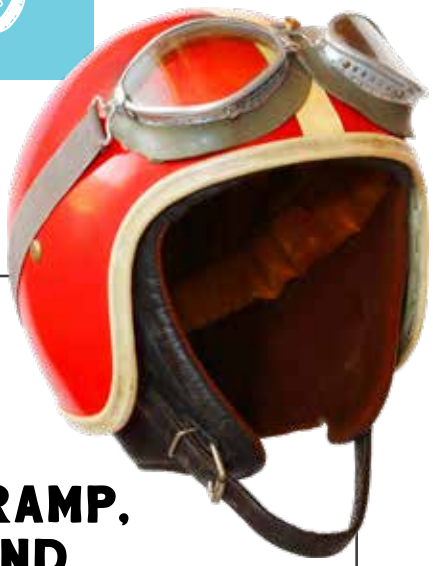
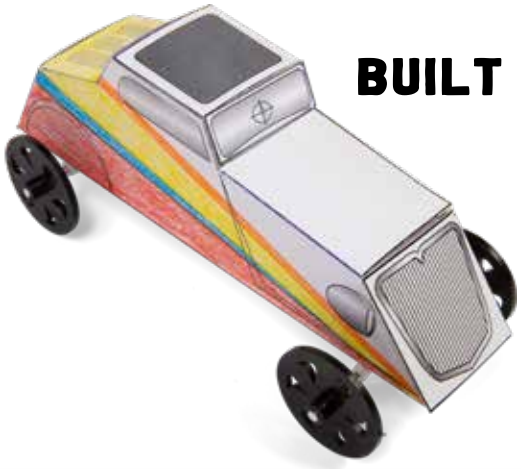
ACTIVITY 1
THE NEED FOR SPEED

GATHER YOUR SUPPLIES

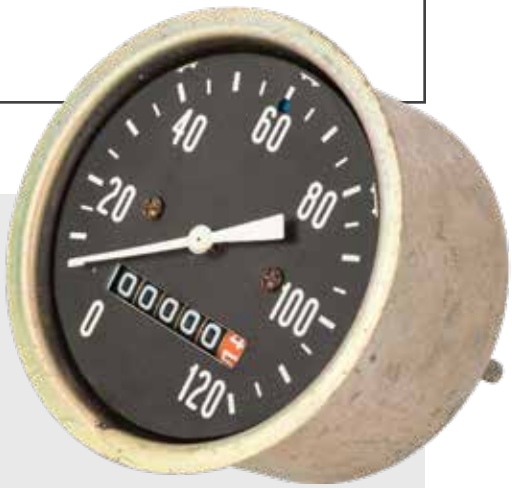
So we can get things rolling!





BUILT CAR

NOT INCLUDED: RAMP, STOPWATCH, AND MEASURING TAPE



Real automobiles have speedometers that tell the driver how fast they are going, and this speed is often measured in miles per hour (mph). Cars going 30 mph travel 30 miles in an hour. Cars traveling at 40 mph go 40 miles in the same hour . . . you get the idea.

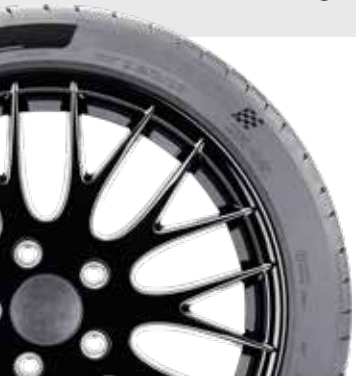
Speed is defined as the **distance** you travel in a certain period of **time**. While real car speeds might be measured in miles per hour, speeds for our model cars might be better measured in feet per second – meaning how many feet the car travels in during one second.

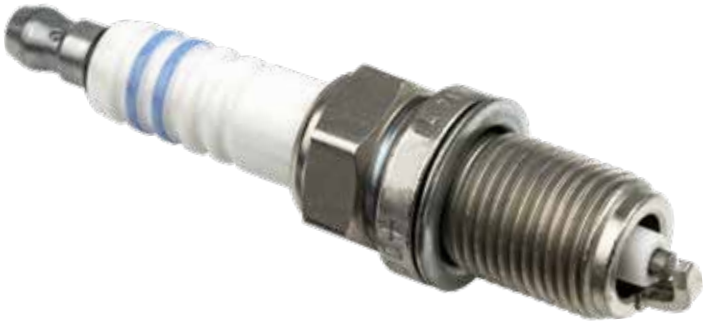
Let's measure the speed of your car as it travels down the ramp. To do this, you will need a stopwatch or a stopwatch app on a phone. And you will need to use a measuring tape or yardstick to measure the length of your ramp in inches.

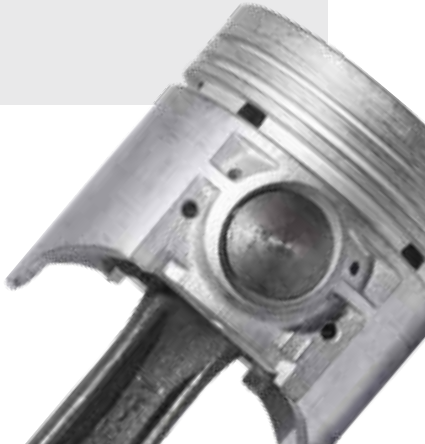
What is the length of your ramp in inches? _____

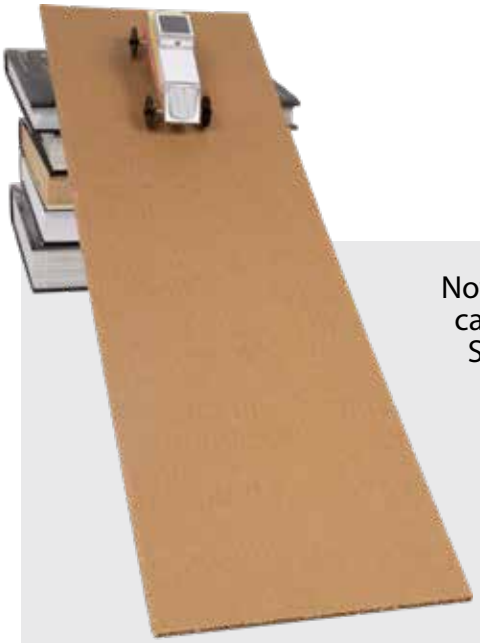
Now we need to convert that length in inches to a length in feet. To do that we divide the number of inches by 12 – because there are 12 inches in one foot. So, divide the length of your ramp in inches by 12. You can use a calculator if you like.

What is the length of your ramp in feet? _____









Now comes the fun part. Get your timing device ready and put your car at the top of the ramp. When you let the car go, start the timer. Stop the timer when the back of the car goes off the ramp.

How long (in seconds) did it take for your car to go down the ramp? _____

Now we know how long it took to go a specific distance, so we can determine the speed by dividing the distance by the time. In the following blanks, fill in your data (what you measured) for your car:

Distance _____(feet) ÷ Time _____ (seconds) = Speed _____ (feet per second)

We want to be sure our measurement of the speed is accurate, so we will repeat this process two more times, measuring the time and dividing the distance (which remains the same) for each trial. Fill in your data and calculations here:

Trial	Distance (feet)	Time (seconds)	Speed (feet/second)
1			
2			
3			

THINK ABOUT IT

ASK THE QUESTION

Because understanding the why is important.

What remained constant (the same) for each trial?

Explain to a peer or family member what the abbreviation mph means. Research how speed on roadways is measured in countries outside of the United States. How does it compare to mph?

What was the average speed? To find this, add the three speeds from the last column and then divide that number by three.