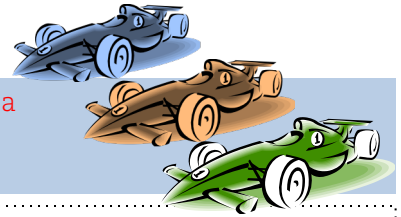


# Speed Racer



## Strands:

Number & Quantity	
Algebra	x
Functions	x
Geometry	
Statistics & Probability	

## Materials:

- Hot Wheels™ car, 1 per learner
- Metal rod, 1 per car
- Colored index card, 1 per car
- Scissors
- Measuring tape
- Stopwatch or timer
- Painter's tape
- File folder
- *Speed Racer Chart*, 1 copy per pair of racers

## Where:

Outside	
Inside	X
On-line	
On-site	

Challenge your friends to determine who can make a car go fastest with nothing but wind power in this activity for 6<sup>th</sup> through 8<sup>th</sup> grade learners.

### To Make your Speed Racer:

1. Use hot glue to attach a metal rod to the back of a Hot Wheels™ car. This is the mast.
2. Cut a sail from an index card. Try different shapes, if you like, or leave it rectangular.
3. Use the metal rod to poke a hole near the center bottom of the sail. Poke another hole the same distance from the top.
4. Without creasing the sail, bend it into an arc. Slide the sail onto the mast of the car through the two holes you just created. Push a tube over the top of the mast to keep the sail on the mast or use tape around the top of the mast so that the sail cannot slide off.

### To Race your Speed Racer:

1. Set up a racecourse.
  - a. On a large surface, use painter's tape to mark a starting line. Six feet from and parallel to the starting line, mark a finish line.
  - b. Use tape to mark 2 ft and 4 ft from the starting line.
2.
  - a. Use a file folder or something else to use as a fan to make your racer go.
  - b. Recruit another player to use the stopwatch to record your split times.
3. Place your racer at the starting line. When the person timing you says "GO", start fanning your speed racer.
4. As you race your car down the course, the timer records split times as the car reaches the 2 ft, 4 ft, and 6 ft marks. Write these values on the *Speed Racer* chart.
5. Repeat the race to complete 3 intervals.

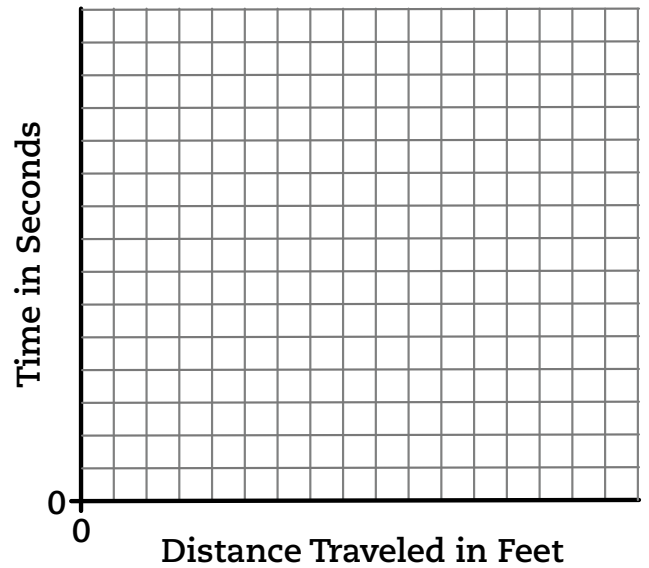
### To Win:

5. The winner is the person with the fastest speed in two of the three intervals.
6. How do we find out who has the fastest speed at each interval? Discuss this with your other speed racer buddies before moving on.
7. You should have found that the equation that you need is distance ( $d$ ) is equal to speed ( $s$ ) multiplied by time ( $t$ ),  $d = st$ . This equation is often written as  $d = vt$  where  $v$  represents velocity or  $d = rt$  where  $r$  stands for rate.
8. Plot the points that you record on a graph. See the attached graph for help. You should plot four points, your time at each distance, starting with 0 seconds at 0 feet.

# Speed Racer Chart

**Directions:** For each interval, record the time at which the Speed Racer reached each of the distances. Using a different color for each data set, graph the data for each interval. Include the point, (0, 0) in each graph.

Interval	2 ft	4 ft	6 ft	Speed for Interval
1				
2				
3				



Interval	2 ft	4 ft	6 ft	Speed for Interval
1				
2				
3				

