

Speed Racer



Materials

- Hot wheels™ car with mast attached
- Colored index cards
- Scissors
- Tape measure
- Stop watch or timer
- Painter's tape
- File folder
- Metal rods
- Speed Racer chart

To make your speed racer:

1. Cut out a sail from an index cards. You may try different shapes if you would like or leave rectangular.
2. Use the included metal rods to poke a hole near the bottom of the sail. This hole should be as centered as possible. Poke another hole the same distance from the top.
3. Without creasing the paper, bend the paper into an arc. Slide the paper onto the mast of the car through the two holes you just created.
4. Push the tube over the top of the mast to keep the sail on the mast to adjust the height of the sail by raising or lowering the tube along the mast. Your speed racer is now finished.

How to race your speed racer:

1. Set up the race course. On the ground, mark out a 6ft. length using painter's tape. The tape marks the start and finish lines. Also place markers at the 2ft and 4ft marks.
2. Use a file folder or something else to use as a fan to make your racer go. You will also need a stop watch and someone to record your split times.
3. Place your racer at the start line. When the person timing you says "GO", start fanning your racer.
4. The timer will record the times as the car reaches the 2ft, 4ft and 6ft marks as you race your speed racer down your course. Record these values on the Speed Racer chart.

How you win:

1. The winner will be the person who has the fastest speed. There are three intervals, so the winner will be the one who wins two out of the three intervals.
2. How do we find out who has the fastest speed at each interval? Discuss this with your other speed racer buddies before moving on.
3. You should have found that the equation that you need is distance (d) = speed (s) multiplied by time (t) or simply ($d=st$). This equation is often written as $d=vt$ where v stands for velocity or $d = rt$ where r stands for rate.
4. 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.