

- In 1997, Thrust SSC, the world's fastest jet-engine car, travelled 604 m at an average speed of 341 m/s. Calculate the length of time in minutes needed to travel this distance.
- A car travels 30 km in 45 minutes on a straight highway. What is its average speed in m/s?
- A VW Beetle is travelling down the road at 40 km/h when the driver suddenly notices a roadblock 75 m up ahead. She applies the brakes as soon as she notices the roadblock. Her reaction time is 0.40 seconds.
 - Convert 45 km/h to metres per second (m/s).
 - Calculate the distance she travels in the 0.4 seconds it takes her to apply the brakes.
- The speed of sound in air is 332 m/s at 0 degrees Celsius. At 0 degrees Celsius, a student bangs two blocks of wood together, causing a very loud bang, in order to carry out an experiment to measure the speed of sound in air. It takes 0.500 seconds for the sound to travel from the wooden blocks to the wall and return to the student with the wooden blocks. How far is the student from the wall?
- In 1979, Bryan Allen pedalled the *Gossamer Albatross* aircraft 35.0 km across the English Channel in a time of 169 minutes.
 - Calculate the average speed of the aircraft in m/s.
 - Assuming that he maintained this same average speed, what total distance in metres could he cover in 5.3 hours?
- You are taking a trip from Oshawa to Niagara Falls in your family car. The total distance from Oshawa to Niagara Falls is 170 km. In the pursuit of science, you decide to measure certain physical quantities. The odometer on the car reads 28 456.0 km at the beginning of the time interval measured, and at the end of the time interval of 1.35 hours it reads 28 577.5 km.
 - Determine the average speed of the car during this time period in kilometres per hour.
 - Assuming this average speed will be maintained, how long will it take to travel to Niagara Falls from Oshawa in hours?
- It has been proven that one-quarter of all vehicle accidents occur because the driver is distracted. "Drive-Thru" dining is a convenience we take for granted in our modern society. Assume that a driver was eating french fries while driving and dropped one of the french fries on the seat. He looks down, sees the fry, and reaches to pick it up. It takes him approximately 3.0 s to look and pick up the french fry. How far in metres does the car travel in this time if he is travelling at a constant speed of 100 km/h?
- Several of Hank's friends are positioned 20.0 m apart with stopwatches. All the friends start their stopwatches when Hank starts to pedal his bike in a straight line. Each friend stops her watch when Hank reaches her position.

Hank's Bike Ride	
Distance (m)	Time (s)
0.0	0.0
20.0	6.0
40.0	9.0
60.0	16.0
80.0	19.0
100.0	25.0

- Plot a distance-time graph of Hank's bike ride.
- Calculate the slope of the best-fit line and determine Hank's average speed over the 100 m.

