Velocity Race Simulator

Speed Calculation Worksheet — Fenwick Tutoring

Name: _____ Date: _____ Class: _____

Formula

speed = distance ÷ time	**v = d ÷ t**	units: m / s

Worked Example

Set screen width to **26 cm**. Race **Speed of snowflakes** against **Ketchup motion**. Read the distance from the arrow bar beneath the track, and the time from each lane's label.

Racer	Distance (m)	Time (from screen)	Time (seconds)	Calculation	Speed (m/s)
Speed of snowflakes	0.240	0.160 s	0.160	0.240 ÷ 0.160	1.50
Ketchup motion	0.240	240 s	240	0.240 ÷ 240	0.00100

Hard (mixed units) mode tip: When the time label shows a prefix (e.g. 160 ms, 3.2 ns, 4.5 years), convert it to plain seconds before calculating. Use the *Time (seconds)* column to record your conversion. For example: 160 ms = 0.160 s | 3.2 ns = 3.2×10^{-9} s | 4.5 years = 1.42×10^{8} s

Calculation Table — fill in after each race

#	Racer	Distance (m)	Time (from screen)	Time (seconds)	Speed (m/s)
1	African elephant (top speed)				
2	Air in throat when sneezing				
3	Avg speed of oxygen molecule				
4	Crack propagation in breaking silicon				
5	Cracking whip's end				
6	Deep sea manganese crust growth				
7	Electron drift in metal wire				
8	Electrons inside colour TV tube				
9	Fastest badminton smash				
10	Fastest bird (Falco peregrinus)				
11	Fastest running animal (Cheetah)				
12	Fastest swimming fish (Sailfish)				
13	Fastest throw (Cricket ball)				
14	Formula One car (top speed)				
15	Freely falling human				
16	Global sea level rise				
17	Helios II satellite				
18	Highest macroscopic speed in galaxy				
19	Human childhood growth				
20	Ketchup motion				

#	Racer	Distance (m)	Time (from screen)	Time (seconds)	Speed (m/s)
21	Lichen growth				
22	Lightning tip				
23	Signal speed in human nerves				
24	Slowest speed of light (in matter)				
25	Speed of Earth through universe				
26	Speed of a rifle bullet				
27	Speed of light at Sun's centre				
28	Speed of radio messages in space				
29	Speed of rain drops				
30	Speed of snowflakes				
31	Speed of sound in dry air				
32	Speed of the equator				
33	Speed sailing record (Hydroptere)				
34	Sperm motion				
35	Stalagmite growth				
36	Tree growth				
37	Typical motion of continents				
38	Usain Bolt (top speed)				
39	Wind speed (Hurricane)				