

Speed Test Lab

Use distance and time to find average speed.

GRADE 7 • TEKS 7.7.A

7.7.A "calculate average speed using distance and time measurements from investigations;"

NAME _____

DATE _____

FIND AVERAGE SPEED

Average speed tells how much distance an object travels in each unit of time. Divide total distance by total time: average speed = distance / time. For a trip with more than one part, add all distances and all times before dividing.

WORKED EXAMPLE

A cart travels 150 m in 30 s. What is its average speed?

1. Average speed = distance / time.
2. Average speed = 150 m / 30 s.
3. Average speed = 5 m/s.

Answer: 5 m/s

PRACTICE 6 problems

- 1** A marble rolls 84 m in 12 s. Calculate its average speed.

ANSWER _____

- 2** A runner travels 96 m in 16 s. Calculate the runner's average speed.

ANSWER _____

- 3** A remote-control car travels 72 m in 9 s. What is its average speed?

ANSWER _____

- 4** A scooter travels 132 m in 22 s. Calculate its average speed.

ANSWER _____

- 5** A cyclist travels 180 m in 45 s. What is the cyclist's average speed?

ANSWER _____

- 6** A toy car travels $\frac{3}{4}$ m in $\frac{1}{4}$ s. Calculate its average speed.

ANSWER _____

APPLY IT Show your work

- 1** A robotics club tests two robot carts. Which cart has the greater average speed? How much greater is its speed?

ROBOT CART INVESTIGATION

Cart	Distance (m)	Time (s)
A	96	16
B	126	18

ANSWER _____

- 2** During a school fun run, Jada travels $1\frac{1}{2}$ miles in $\frac{1}{2}$ hour. What is her average speed in miles per hour?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A drone travels 140 m in 20 s, then travels 210 m in 35 s. Calculate its average speed for the entire trip. Give an exact fraction in m/s and explain why you use the total distance and total time.

WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A marble rolls 84 m in 12 s. Calculate its average speed.	7 m/s
2	A runner travels 96 m in 16 s. Calculate the runner's average speed.	6 m/s
3	A remote-control car travels 72 m in 9 s. What is its average speed?	8 m/s
4	A scooter travels 132 m in 22 s. Calculate its average speed.	6 m/s
5	A cyclist travels 180 m in 45 s. What is the cyclist's average speed?	4 m/s
6	A toy car travels $\frac{3}{4}$ m in $\frac{1}{4}$ s. Calculate its average speed.	3 m/s

PART 2 • APPLY IT

- Cart B, by 1 m/s.** Cart A has an average speed of $96 / 16 = 6$ m/s. Cart B has an average speed of $126 / 18 = 7$ m/s, so Cart B is faster by 1 m/s.
- 3 mi/h** Divide distance by time: $1 \frac{1}{2} / \frac{1}{2} = 3$. Jada's average speed is 3 mi/h.

CHALLENGE

$70/11$ m/s, or $6 \frac{4}{11}$ m/s. Total distance is 350 m and total time is 55 s, so average speed is $350/55 = 70/11$ m/s. Average speed uses the total distance divided by the total time, not an average of the two speeds.

Accept equivalent simplified forms with correct units. For the challenge, accept $70/11$ m/s or $6 \frac{4}{11}$ m/s and an explanation that uses total distance divided by total time.