

GRADE 5 MATHEMATICS

SPEED, DISTANCE & TIME

Complete Worksheet Pack

- Speed, distance and time
- Finding missing values
- Time and unit conversions
- Distance-time tables
- Real-life applications

6 practice worksheets + separate answer keys

- Reasoning & challenges

Worksheet 1 • Understanding Speed, Distance & Time

Use the relationships: $\text{Speed} = \text{Distance} \div \text{Time}$; $\text{Distance} = \text{Speed} \times \text{Time}$; $\text{Time} = \text{Distance} \div \text{Speed}$.

A. Find the speed

1. A car travels 120 km in 2 hours. What is its average speed?

2. A cyclist travels 45 km in 3 hours. What is the average speed?

3. A train travels 300 km in 5 hours. What is its average speed?

4. A runner covers 12 km in 2 hours. What is the average speed?

5. A bus travels 180 km in 3 hours. What is its average speed?

B. Find the distance

6. A car travels at 60 km/h for 4 hours. How far does it travel?

7. A cyclist travels at 15 km/h for 3 hours. How far does the cyclist travel?

8. A train travels at 80 km/h for 5 hours. How far does it travel?

9. A boat travels at 25 km/h for 4 hours. How far does it travel?

C. Think carefully

10. Two cars travel for 3 hours. Car A travels 180 km and Car B travels 210 km. Which car has the greater average speed?

11. What information do you need to calculate speed?

12. Explain why a higher speed does not always mean a longer journey.

Worksheet 1 • Understanding Speed, Distance & Time

Answer Key

A

1. 60 km/h 2. 15 km/h 3. 60 km/h 4. 6 km/h 5. 60 km/h

B

6. 240 km 7. 45 km 8. 400 km 9. 100 km

C

10. Car B: 70 km/h; Car A: 60 km/h. 11. Distance and time. 12. A journey can be shorter or longer regardless of speed; speed describes how quickly distance is covered.

Worksheet 2 • Finding Time & Converting Units

Work with hours, minutes and simple unit conversions.

A. Find the time

1. A car travels 240 km at 60 km/h. How long does the journey take?

2. A train travels 360 km at 90 km/h. How long does it take?

3. A cyclist travels 48 km at 12 km/h. How long does the journey take?

4. A bus travels 150 km at 50 km/h. How long does it take?

B. Convert time

5. 2 hours = ____ minutes.

6. 3 hours 30 minutes = ____ minutes.

7. 150 minutes = ____ hours ____ minutes.

8. 1 hour 45 minutes = ____ minutes.

9. 240 minutes = ____ hours.

C. Reasoning

10. A journey takes 2 hours 30 minutes. How many minutes is this?

11. A student says 180 minutes is 2 hours. Is the student correct? Explain.

12. Why is it important to use matching units when calculating speed?

Worksheet 2 • Finding Time & Converting Units

Answer Key

A

1. 4 hours 2. 4 hours 3. 4 hours 4. 3 hours

B

5. 120 minutes 6. 210 minutes 7. 2 hours 30 minutes 8. 105 minutes 9. 4 hours

C

10. 150 minutes. 11. No; 180 minutes = 3 hours. 12. Because the units must be consistent; for example, km and hours give km/h.

Worksheet 3 • Distance-Time Tables & Comparing Journeys

Read tables, identify patterns and compare journeys.

A. Complete the table

1. A cyclist travels at 20 km/h. Complete: 1 h = ____ km; 2 h = ____ km; 3 h = ____ km; 5 h = ____ km.

2. A car travels at 60 km/h. Complete: 1 h = ____ km; 2 h = ____ km; 4 h = ____ km; 6 h = ____ km.

3. A train travels at 90 km/h. How far does it travel in 2.5 hours?

B. Compare

4. Car A travels 240 km in 4 hours. Car B travels 270 km in 5 hours. Find each average speed.

5. Runner A covers 15 km in 1.5 hours. Runner B covers 18 km in 2 hours. Who has the greater average speed?

6. A bus travels 100 km in 2 hours. Another bus travels 150 km in 3 hours. Compare their average speeds.

C. Reasoning

7. A distance-time table shows 50 km after 1 hour, 100 km after 2 hours and 150 km after 3 hours. What is the speed?

8. If the distance doubles while the time stays the same, what happens to the speed?

9. If the same distance is travelled in less time, what happens to the average speed?

Worksheet 3 • Distance-Time Tables & Comparing Journeys

Answer Key

A

1. 20, 40, 60, 100 km. 2. 60, 120, 240, 360 km. 3. 225 km.

B

4. A = 60 km/h; B = 54 km/h; A is faster. 5. A = 10 km/h; B = 9 km/h; A is faster. 6. Both are 50 km/h.

C

7. 50 km/h. 8. The speed doubles. 9. The average speed increases.

Worksheet 4 • Speed, Distance & Time in Real Life

Apply the ideas to travel, sport and everyday situations.

A. Travel

1. A family drives 210 km in 3 hours. Find the average speed.

2. A train travels at 100 km/h for 3 hours. Find the distance.

3. A bus travels 240 km at 60 km/h. Find the journey time.

4. A cyclist rides 72 km at 18 km/h. Find the journey time.

B. Sport & activities

5. A runner completes 20 km in 2.5 hours. Find the average speed.

6. A swimmer covers 4 km in 2 hours. Find the average speed.

7. A hiker walks at 5 km/h for 3.5 hours. How far does the hiker walk?

C. Multi-step problems

8. A car travels 120 km in the first 2 hours and 90 km in the next 1.5 hours. Find the total distance and average speed for the whole journey.

9. A family travels 180 km to a destination at 60 km/h and returns at 45 km/h. Find the time taken each way and the total journey time.

10. A bus leaves at 8:15 a.m. and travels for 2 hours 30 minutes. What time does it arrive?

Worksheet 4 • Speed, Distance & Time in Real Life

Answer Key

A

1. 70 km/h. 2. 300 km. 3. 4 hours. 4. 4 hours.

B

5. 8 km/h. 6. 2 km/h. 7. 17.5 km.

C

8. Total distance 210 km; total time 3.5 h; average speed = 60 km/h. 9. Outward = 3 h; return = 4 h; total = 7 h.
10. 10:45 a.m.

Worksheet 5 • Estimation, Reasoning & Error Analysis

Check whether answers are sensible and identify mistakes.

A. Estimate first

1. A car travels about 200 km in about 4 hours. Is an average speed of about 50 km/h reasonable?

2. A cyclist travels 90 km in 3 hours. Would 30 km/h or 300 km/h be a sensible average speed? Explain.

3. A train travels 500 km in 5 hours. Estimate its speed before calculating exactly.

B. Find the error

4. Sam calculates $180 \text{ km} \div 3 \text{ hours} = 540 \text{ km/h}$. What did he do incorrectly?

5. Mia says a car travelling at 60 km/h for 2 hours covers 30 km. Correct her answer and explain.

6. A student calculates $240 \text{ km} \div 60 \text{ km/h} = 4 \text{ km}$. What unit should the answer have?

C. Reasoning

7. Two journeys are both 120 km. Journey A takes 2 hours and Journey B takes 3 hours. Compare their average speeds.

8. A driver increases speed but travels for a shorter time. Can the driver still travel the same distance? Give an example.

9. Which gives more information about a journey: distance alone, time alone, or both together? Explain.

Worksheet 5 • Estimation, Reasoning & Error Analysis

Answer Key

A

1. Yes; about 50 km/h is reasonable. 2. 30 km/h is sensible. 3. 100 km/h.

B

4. He multiplied 180 by 3 instead of dividing; $180 \div 3 = 60$ km/h. 5. 120 km; $60 \times 2 = 120$. 6. The unit should be hours; $240 \div 60 = 4$ hours.

C

7. A = 60 km/h; B = 40 km/h. 8. Yes; for example, 120 km at 60 km/h takes 2 h, while 80 km/h for 1.5 h also gives 120 km. 9. Both distance and time together are needed to calculate average speed.

Worksheet 6 • Speed, Distance & Time Challenge

Use multiple steps and explain your thinking.

A. Challenge

1. A car travels 150 km in 2.5 hours. Find its average speed.

2. A train travels at 80 km/h. How long will it take to travel 320 km?

3. A cyclist travels at 18 km/h for 2 hours 20 minutes. How far does the cyclist travel?

4. A journey is 420 km. The first 180 km is travelled at 60 km/h and the remaining distance at 80 km/h. Find the total journey time.

B. Compare & reason

5. Car A travels 300 km in 5 hours. Car B travels 240 km in 4 hours. Compare their average speeds.

6. A runner completes 10 km in 50 minutes. Another runner completes 12 km in 1 hour. Who has the greater average speed in km/h?

7. A bus travels 90 km in 1.5 hours, stops for 30 minutes, then travels another 60 km in 1 hour. Find the total distance and the total elapsed time, including the stop.

C. Think like a mathematician

8. Give two different distance-time combinations that produce an average speed of 60 km/h.

9. Explain why average speed for a whole journey may be different from the speed shown on a car's speedometer at one moment.

10. Create your own speed, distance or time problem with an answer of 75 km/h, 300 km or 4 hours.

Worksheet 6 • Speed, Distance & Time Challenge

Answer Key

A

1. 60 km/h. 2. 4 hours. 3. 42 km. 4. First 180 km: 3 h; remaining 240 km: 3 h; total 6 h.

B

5. Both are 60 km/h. 6. Runner A = 12 km/h; Runner B = 12 km/h; equal. 7. Total distance 150 km; total elapsed time = 1.5 h + 0.5 h + 1 h = 3 h.

C

8. Examples: 60 km in 1 h; 120 km in 2 h. 9. Average speed uses total distance ÷ total time, so stops and changes in speed affect the whole-journey average. 10. Answers vary; check that the stated answer follows from the problem.