

Describing Motion (KS3)

Section A – Recall (1–2 marks each)

Q1 (1 mark)
What is speed?

Q2 (1 mark)
What unit is speed measured in?

Q3 (1 mark)
What does a distance–time graph show?

Q4 (1 mark)
What does a steeper line on a distance–time graph mean?

Q5 (2 marks)
State TWO factors needed to calculate speed.

Q6 (1 mark)
What is meant by relative motion?

Section B – Understanding (2–3 marks each)

Q7 (2 marks)
Explain how to calculate average speed.

Q8 (3 marks)
Explain what a straight line on a distance–time graph shows in terms of speed, distance, time and acceleration.

Q9 (2 marks)

Explain what happens when a car is stationary on a distance-time graph.

Q10 (2 marks)

Explain what relative motion means between two moving objects.

Section C – Application (3-4 marks)

Q11 (3 marks)

A cyclist travels 100 m in 20 s. Calculate the speed.

Use: $\text{speed} = \text{distance} \div \text{time}$

Q12 (3 marks)

A runner travels 60 m in 12 s. Calculate the speed.

Q13 (3 marks)

A car travels 150 m in 10 s. Calculate the speed.

Q14 (3 marks)

A train travels 300 m in 15 s. Calculate the speed.

Q15 (3 marks)

A train travels 600 m in 30 s. Calculate the speed.

Q16 (4 marks)

A cyclist travels 240 m at a speed of 6 m/s. Calculate the time taken.

Use: $\text{speed} = \text{distance} \div \text{time}$ (Rearrange to find time).

Q17 (4 marks)

A car travels 180 m in 9 s. Calculate the speed, then calculate how far it would travel in 15 s at the same speed.

Q18 (4 marks)

A distance of 200 m is covered in 25 s. Calculate the speed, then calculate the time needed to travel 400 m at the same speed.

Q19 (4 marks)

A train travels at 20 m/s for 50 s. Calculate the distance travelled.

Use: $\text{speed} = \text{distance} \div \text{time}$ (rearrange to find distance)

Q20 (4 marks)

A car travels 12 m/s for 40 s. Calculate the distance travelled. Include the formula.

Q21 (4 marks)

Two cars travel in the same direction. Car A moves at 25 m/s and Car B moves at 18 m/s. Calculate the relative speed and explain what it means.

Q22 (4 marks)

Two trains move in opposite directions at 20 m/s and 15 m/s. Calculate the relative speed and explain what happens as they pass.

Section D – Extended Response (6 marks)

Q23 (6 marks)

Explain how motion can be described using speed calculations, distance-time graphs, and relative motion between objects.

Total: ____ / 65
Percentage: ____%