

Year 7 Forces - Speed

Name of unit	
Expected Outcomes • Students will understand how to measure and calculate speed. • Students will be able to describe the relationship between distance, time, and speed. • Students will interpret distance-time graphs. • Students will carry out simple practical's to collect data on motion and speed. • Students will begin to identify variables and record results accurately.	
Developmental Focus Opportunities • Practical skills: Planning and carrying out investigations to measure speed. • Numeracy: Using the speed formula ($\text{Speed} = \text{Distance} \div \text{Time}$) and interpreting graphs. • Scientific literacy: Explaining motion using scientific vocabulary. • Working scientifically: Developing skills in identifying variables and drawing conclusions from data.	
Key Learning Points	Powerful Knowledge
• What speed is and how to calculate it using a formula. • How to use measuring equipment (e.g., timers, rulers, trundle wheels). • How to plot and interpret a distance-time graph. • Differences between constant and changing speed.	• Understanding how speed affects real-life situations (e.g., transport, safety). • Developing transferable problem-solving and data analysis skills. • Applying knowledge of motion to explain events in daily life and in sport. • Laying foundations for future physics topics such as acceleration, velocity, and forces.
Subject-Specific Vocabulary	Reading Opportunities
• Speed • Distance • Time	• Informational texts or case studies on transport systems. • Excerpts from STEM magazines or news articles on speed and performance (e.g., athletes or vehicles).

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• Average speed • Constant speed • Variable • Distance-time graph • Gradient	• Short comprehension activities using distance-time graphs.
Possible Misconceptions	Cross-Curricular Links
• Confusing speed with velocity. • Believing that speed is always constant in real life. • Not understanding the need for consistent units (e.g., mixing metres and kilometres). • Thinking a steep graph means “faster time” rather than “greater speed.”	• Maths: Graphing skills, units of measurement, calculating averages. • PE: Understanding performance metrics like running speed. • Geography: Travel times and interpreting scale distances.