



Year 9 Numeracy

Learners are able to:

Develop Numerical Reasoning

Identify Processes and Connections

- ❖ transfer mathematical skills across the curriculum in a variety of contexts and everyday situations
- ❖ select, trial and evaluate a variety of possible approaches and break complex problems into a series of tasks
- ❖ prioritise and organise the relevant steps needed to complete the task or reach a solution
- ❖ choose an appropriate mental or written strategy and know when it is appropriate to use a calculator
- ❖ use a scientific calculator to carry out calculations effectively and efficiently using the available range of function keys
- ❖ identify, measure or obtain required information to complete the task
- ❖ identify what further information might be required and select what information is most appropriate
- ❖ select appropriate mathematics and techniques to use
- ❖ estimate and visualise size when measuring and use the correct units

Represent and Communicate

- ❖ explain results and procedures precisely using appropriate mathematical language
- ❖ refine methods of recording calculations
- ❖ use appropriate notation, symbols and units of measurement, including compound measures
- ❖ select and construct appropriate charts, diagrams and graphs with suitable scales
- ❖ interpret graphs that describe real-life situations
- ❖ interpret graphical representations used in the media, recognising that some graphs may be misleading

Review

- ❖ select and apply appropriate checking strategies
- ❖ interpret answers within the context of the problem and consider whether answers, including calculator displays, are sensible
- ❖ verify and justify results or solutions, including discussion on risk and chance where relevant
- ❖ interpret mathematical information; draw inferences from graphs, diagrams and data, including discussion on limitations of data
- ❖ draw conclusions from data and recognise that some conclusions may be misleading or uncertain



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Use Number Skills

Number Facts and Relationships

- ❖ use powers and understand the importance of powers of 10
- ❖ show awareness of the need for standard form and its representation on a calculator

Fractions, Decimals, Percentages and Ratio

- ❖ use equivalence of fractions, decimals and percentages to select the most appropriate for a calculation
- ❖ use and interpret different representations of fractions, e.g. mixed numbers and improper fractions
- ❖ express one quantity as percentage of another
- ❖ calculate a percentage increase or decrease
- ❖ use ratio and proportion to calculate quantities

Calculate Using Mental and Written Methods

- ❖ use efficient written methods to add and subtract numbers and decimals of any size, including a mixture of large and small numbers with differing numbers of decimal places
- ❖ multiply and divide whole numbers and decimals
- ❖ use the order of operations including brackets and powers

Estimate and Check

- ❖ make and justify estimates and approximations of calculations
- ❖ choose the appropriate degree of accuracy to present answers

Manage Money

- ❖ calculate using foreign money and exchange rates
- ❖ understand the risks involved in different ways of saving and investing
- ❖ describe why insurance is important and understand the impact of not being insured



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Use measuring skills

Length, weight (mass) and Capacity

- ❖ find circumferences of circles
- ❖ make links between time, speed and distance

Temperature

- ❖ convert temperatures between appropriate temperature scales
- ❖ Area Volume and Angles
- ❖ find areas of circles
- ❖ apply understanding of bearings and scale to interpret maps and plans, and to create plans and drawings to scale

Use Data Skills

Collect and record data present and analyse data and interpret results

- ❖ test simple hypotheses, making decisions about how best to record and analyse the information from large data sets
- ❖ construct and interpret graphs and diagrams (including pie charts) to represent data, with the learner choosing an appropriate scale
- ❖ select and justify statistics most appropriate to the problem considering extreme values (outliers)
- ❖ examine results critically, select and justify choice of statistics recognising limitations of any assumptions and their effect on the conclusions
- ❖ drawn
- ❖ use appropriate mathematical instruments and methods to construct accurate drawings