

### MATHEMATICS CURRICULUM

#### LEVEL 4

Solve problems involving multiplying or dividing natural numbers by multiples and powers of 10 without a calculator, using the multiplicative relationship between the place value of digits **(VC2M4N05)**

Develop efficient mental and written strategies and use appropriate digital tools for solving problems involving addition and subtraction, and multiplication and division where there is no remainder **(VC2M4N06)**

Choose and use estimation and rounding to check and explain the reasonableness of calculations, including the results of financial transactions **(VC2M4N07)**

Use mathematical modelling to solve practical problems that involve additive and multiplicative situations, including financial contexts; formulate the problems using number sentences and choose efficient calculation strategies, using digital tools where appropriate; interpret and communicate solutions in terms of the situation **(VC2M4N09)**

#### LEVEL 5

Express natural numbers as products of their factors, recognise multiples and determine if one number is divisible by another **(VC2M5N02)**

Recognise that 100% represents the complete whole and use percentages to describe, represent and compare relative size; connect familiar percentages to their decimal and fraction equivalents **(VC2M5N04)**

Solve problems involving multiplication of larger numbers by one- or two-digit numbers, choosing efficient mental and written calculation strategies and using digital tools where appropriate; check the reasonableness of answers **(VC2M5N06)**

Solve problems involving division, choosing efficient mental and written strategies and using digital tools where appropriate; interpret any remainder according to the context and express results as a whole number, decimal or fraction **(VC2M5N07)**

Check and explain the reasonableness of solutions to problems, including financial contexts using estimation strategies appropriate to the context **(VC2M5N08)**

Use mathematical modelling to solve practical problems involving additive and multiplicative situations, including simple financial planning contexts; formulate the problems, choosing operations and efficient mental and written calculation strategies, and using digital tools where appropriate; interpret and communicate solutions in terms of the situation **(VC2M5N09)**

#### LEVEL 6

Approximate numerical solutions to problems involving rational numbers and percentages, using appropriate estimation strategies **(VC2M6N08)**

Use mathematical modelling to solve practical problems involving rational numbers and percentages, including in financial contexts; formulate the problems, choosing operations and using efficient mental and written calculation strategies, and using digital tools where appropriate; interpret and communicate solutions in terms of the situation, justifying the choices made **(VC2M6N09)**

#### LEVEL 7

Compare, order and solve problems involving addition and subtraction of integers **(VC2M7N08)**

Use mathematical modelling to solve practical problems involving rational numbers and percentages, including financial contexts such as 'best buys'; formulate problems, choosing representations and efficient calculation strategies, designing algorithms and using digital tools as appropriate; interpret and communicate solutions in terms of the situation, justifying choices made about the representation **(VC2M7N10)**

NUMBER

MATHEMATICS CURRICULUM	LEVEL 4	LEVEL 5	LEVEL 6	LEVEL 7
ALGEBRA	Recall and demonstrate proficiency with multiplication facts up to $10 \times 10$ and related division facts, and explain the patterns in these; extend and apply facts to develop efficient mental and written strategies for computation with larger numbers without a calculator <b>(VC2M4A02)</b>	Recognise and explain the connection between multiplication and division as inverse operations and use this to develop families of number facts <b>(VC2M5A01)</b>	Recognise and use rules that generate visually growing patterns and number patterns involving rational numbers <b>(VC2M6A01)</b>	
SPACE	Create and interpret grid reference systems using grid references and directions to locate and describe positions and pathways <b>(VC2M4SP03)</b>	Construct a grid coordinate system that uses coordinates to locate positions within a space; use coordinates and directional language to describe position and movement <b>(VC2M5SP02)</b>		
STATISTICS	Analyse the effectiveness of different displays or visualisations in illustrating and comparing data distributions, then discuss the shape of distributions and the variation in the data <b>(VC2M4ST02)</b>	Acquire, validate and represent data for nominal and ordinal categorical and discrete numerical variables to address a question of interest or purpose using software including spreadsheets; discuss and report on data distributions in terms of highest frequency (mode) and shape, in the context of the data <b>(VC2M5ST01)</b>  Plan and conduct statistical investigations by posing questions or identifying a problem and collecting relevant data; choose appropriate displays and interpret the data; communicate findings within the context of the investigation <b>(VC2M5ST03)</b>	Interpret and compare data sets for ordinal and nominal categorical, discrete and continuous numerical variables using comparative displays or visualisations and digital tools; compare distributions in terms of mode, range and shape <b>(VC2M6ST01)</b>  Plan and conduct statistical investigations by posing and refining questions to collect categorical or numerical data by observation or survey, or identifying a problem and collecting relevant data; analyse and interpret the data and communicate findings within the context of the investigation <b>(VC2M6ST03)</b>	Acquire data sets for discrete and continuous numerical variables and calculate the range, median, mean and mode; make and justify decisions about which measures of central tendency provide useful insights into the nature of the distribution of data <b>(VC2M7ST01)</b>

## MATHEMATICS CURRICULUM

### PROBABILITY

#### LEVEL 4

Describe possible everyday events and the possible outcomes of chance experiments and order outcomes or events based on their likelihood of occurring; identify independent or dependent events **(VC2M4P01)**

Conduct repeated chance experiments to observe relationships between outcomes in games and other chance situations, and identify and describe the variation in results **(VC2M4P02)**

#### LEVEL 5

List the possible outcomes of chance experiments involving equally likely outcomes and compare to those that are not equally likely **(VC2M5P01)**

Conduct repeated chance experiments, including those with and without equally likely outcomes, and observe and record the results; use frequency to compare outcomes and estimate their likelihoods **(VC2M5P02)**

#### LEVEL 6

Describe probabilities using fractions, decimals and percentages; recognise that probabilities lie on numerical scales of 0-1 or 0%-100%; use estimation to assign probabilities that events occur in a given context, using common fractions, percentages and decimals **(VC2M6P01)**

Conduct repeated chance experiments and run simulations with an increasing number of trials using digital tools; compare observations with expected results and discuss the effect on variation of increasing the number of trials **(VC2M6P02)**

#### LEVEL 7

Identify the sample space for single-stage experiments; assign probabilities to the possible outcomes and predict relative frequencies for related experiments **(VC2M7P01)**

GENERAL CAPABILITIES	YEAR 3&4 STUDENTS	YEAR 5&6 STUDENTS	YEAR 7&8 STUDENTS
<p><b>CRITICAL AND CREATIVE THINKING</b></p>	<p>Explore reactions to a given situation or problem and consider the effect of pre-established preferences <b>(VCCCTQ011)</b></p> <p>Identify and use 'If, then...' and 'what if...' reasoning <b>(VCCCTR016)</b></p> <p>Consider concrete and pictorial models to facilitate thinking, including a range of visualisation strategies <b>(VCCCTM018)</b></p> <p>Investigate a range of problem-solving strategies, including brainstorming, identifying, comparing and selecting options, and developing and testing hypotheses <b>(VCCCTM020)</b></p>	<p>Experiment with alternative ideas and actions by setting preconceptions to one side <b>(VCCCTQ022)</b></p> <p>Investigate common reasoning errors including contradiction and inconsistency, and the influence of context <b>(VCCCTR024)</b></p> <p>Consider the importance of giving reasons and evidence and how the strength of these can be evaluated <b>(VCCCTR025)</b></p> <p>Investigate how ideas and problems can be disaggregated into smaller elements or ideas, how criteria can be used to identify gaps in existing knowledge, and assess and test ideas and proposals <b>(VCCCTM031)</b></p>	<p>Suspend judgements temporarily and consider how preconceptions may limit ideas and alternatives <b>(VCCCTQ033)</b></p> <p>Examine common reasoning errors including circular arguments and cause and effect fallacies <b>(VCCCTR035)</b></p>
<p><b>PERSONAL AND SOCIAL CAPABILITY</b></p>	<p>Identify and explore the expression of emotions in social situations and the impact on self and others <b>(VCPSCSE016)</b></p> <p>Identify how persistence and adaptability can be used when faced with challenging situations and change <b>(VCPSCSE018)</b></p> <p>Identify the importance of including others in activities, groups and games <b>(VCPSCSO022)</b></p> <p>Demonstrate skills for effective participation in group tasks and use criteria provided to reflect on the effectiveness of the teams in which they participate <b>(VCPSCSO023)</b></p> <p>Identify conflicts that may occur in peer groups and suggest possible causes and resolutions <b>(VCPSCSO024)</b></p>	<p>Explore the links between their emotions and their behaviour <b>(VCPSCSE025)</b></p> <p>Describe what it means to be confident, adaptable and persistent and why these attributes are important in dealing with new or challenging situations <b>(VCPSCSE027)</b></p> <p>Identify the characteristics of an effective team and develop descriptions for particular roles including leadership, and describe both their own and their team's performance when undertaking various roles <b>(VCPSCSO032)</b></p> <p>Describe the various causes of conflict and evaluate possible strategies to address conflict <b>(VCPSCSO033)</b></p>	<p>Describe how and why emotional responses may change in different contexts <b>(VCPSCSE034)</b></p> <p>Discuss the range of strategies that could be used to cope with difficult tasks or changing situations <b>(VCPSCSE036)</b></p> <p>Perform in a variety of team roles and accept responsibility as a team member and team leader, assessing how well they support other members of the team <b>(VCPSCSO041)</b></p> <p>Identify ways to be proactive in initiating strategies to prevent and/or accomplish positive resolutions to conflict <b>(VCPSCSO042)</b></p>
<p><b>ETHICAL UNDERSTANDING</b></p>	<p>Discuss the role of personal values and dispositions in ethical decision-making and actions <b>(VCECD008)</b></p>	<p>Discuss the role and significance of conscience and reasoning in ethical decision-making <b>(VCECD013)</b></p>	<p>Explore the extent of ethical obligation and the implications for thinking about consequences and duties in decision-making and action <b>(VCECD017)</b></p>