

## Level description: Year 4

In Year 4, learning in Mathematics builds on each student's prior learning and experiences. Students engage in a range of approaches to learning and doing mathematics that develop their understanding of and fluency with concepts, procedures and processes by making connections, reasoning, problem-solving and practice. Proficiency in mathematics enables students to respond to familiar and unfamiliar situations by employing mathematical strategies to make informed decisions and solve problems efficiently. Students further develop proficiency and positive dispositions towards mathematics and its use as they:

- **draw on their proficiency with number facts, fractions and decimals to deepen their appreciation of how numbers work**
- **develop and use strategies for multiplication that are based on their understanding of multiplication as an operation and their knowledge of laws for arithmetic operations**
- **choose and use efficient strategies when modelling problems, communicating their solutions within the context of the situation**
- **use algorithms to generate sets of numbers, recognising and describing any patterns that emerge**
- **become aware of the importance of context and purpose when they make judgements and reflect on the reasonableness of measurements and the results of calculations, and how they choose to represent mathematics and mathematical information**
- **measure and estimate common attributes of objects using conventional instruments and appropriate metric units**
- **develop and use surveys to obtain data that is directly relevant to their statistical investigations**
- **draw on their reasoning skills to analyse, categorise and order chance events and identify independent and dependent events**
- **investigate variability by conducting repeated chance experiments and observing results.**

## Achievement standard: Year 4

By the end of Year 4, students use their understanding of place value to represent tenths and hundredths in decimal form and to multiply natural numbers by multiples of 10. They use mathematical modelling to solve financial and other practical problems, formulating the problem using number sentences, solving the problem choosing efficient strategies and interpreting results in terms of the situation. Students use their proficiency with addition and multiplication facts to add and subtract, multiply and divide numbers efficiently. They choose rounding and estimation strategies to determine whether results of calculations are reasonable. Students use the properties of odd and even numbers. They recognise equivalent fractions and make connections between fraction and decimal notations. Students count and represent fractions on a number line. They find unknown values in numerical equations involving addition and subtraction. Students follow and create algorithms that generate sets of numbers and identify emerging patterns. They use scaled instruments and appropriate units to measure length, mass, capacity and temperature. Students measure and approximate perimeters and areas. They convert between units of time when solving problems involving duration. Students compare angles relative to a right angle using angle names. They represent and approximate shapes and objects in the environment. Students create and interpret grid references. They identify line and rotational symmetry in plane shapes and create symmetrical patterns. Students create many-to-one data displays, assess the suitability of displays for representing data and discuss the shape of distributions and variation in data. They use surveys and digital tools to generate categorical or discrete numerical data in statistical investigations and communicate their findings in context. Students order events or the outcomes of chance experiments in terms of likelihood and identify whether events are independent or dependent. They conduct repeated chance experiments and describe the variation in results.