# Number and Algebra Year 5



Teacher: Date:

A Local Public School

## Cross Curriculum Priorities

- Aboriginal and Torres Strait Islander histories and culture
- Asia and Australia's engagement with Asia
- Sustainability

## General Capabilities

- Literacy
- Numeracy
- ICT Competence
- Critical and Creative Thinking
- Intercultural Understanding
- Personal and Social Competence
- Ethical Behaviour

### First Steps Links

**Understand Whole and Decimal Numbers**

- ☐ KU 1 Pg.
- ☐ KU 2 Pg.
- ☐ KU 3 Pg.
- ☐ KU 4 Pg.
- ☐ KU 5 Pg.
- ☐ KU6 Pg.
- ☐ KU 7 Pg.
- ☐ KU 8 Pg.

**Understand Fractional Numbers**

- ☐ KU 1 Pg.
- ☐ KU 2 Pg.
- ☐ KU 3 Pg.
- ☐ KU 4 Pg.
- ☐ KU 5 Pg.
- ☐ KU 6 Pg.
- ☐ KU 7 Pg.

**Understand Operations**

- ☐ KU 1 Pg.
- ☐ KU 2 Pg.
- ☐ KU 3 Pg.
- ☐ KU 4 Pg.
- ☐ KU 5 Pg.
- ☐ KU 6 Pg.
- ☐ KU 7 Pg.
- ☐ KU 8 Pg.
- ☐ KU 9 Pg.

**Calculate**

- ☐ KU 1 Pg.
- ☐ KU 2 Pg.
- ☐ KU 3 Pg.
- ☐ KU 4 Pg.
- ☐ KU 5 Pg.
- ☐ KU 6 Pg.
- ☐ KU 7 Pg.
- ☐ KU 8 Pg.
- ☐ KU 9 Pg.
- ☐ KU 10 Pg.

| Year 4 | Year 5 | Year 6 |
|---|---|---|
| **NUMBER AND PLACE VALUE** | **NUMBER AND PLACE VALUE** | **NUMBER AND PLACE VALUE** |
| Investigate and use the properties of odd and even numbers *[ACMNA071]*<br><br>Recognise, represent and order numbers to at least tens of thousands *[ACMNA072]*<br><br>Apply place value to partition, rearrange and regroup numbers to at least tens of thousands to assist calculations and solve problems *[ACMNA073]*<br><br>Investigate number sequences involving multiples of 3, 4, 6, 7, 8, and 9 *[ACMNA074]*<br><br>Recall multiplication facts up to 10 • 10 and related division facts *[ACMNA075]*<br><br>Develop efficient mental and written strategies and use appropriate digital technologies for multiplication and for division where there is no remainder *[ACMNA076]* | Identify and describe factors and multiples of whole numbers and use them to solve problems *[ACMNA098]*<br><br>Use estimation and rounding to check the reasonableness of answers to calculations *[ACMNA099]*<br><br>Solve problems involving multiplication of large numbers by one- or two-digit numbers using efficient mental, written strategies and appropriate digital technologies *[ACMNA100]*<br><br>Solve problems involving division by a one digit number, including those that result in a remainder *[ACMNA101]*<br><br>Use efficient mental and written strategies and apply appropriate digital technologies to solve problems *[ACMN291]* | Identify and describe properties of prime, composite, square and triangular numbers *[ACMNA122]*<br><br>Select and apply efficient mental and written strategies and appropriate digital technologies to solve problems involving all four operations with whole numbers *[ACMNA123]*<br><br>Investigate everyday situations that use positive and negative whole numbers and zero. Locate and represent these numbers on a number line *[ACMNA124]* |
| **FRACTIONS AND DECIMALS** | **FRACTIONS AND DECIMALS** | **FRACTIONS AND DECIMALS** |
| Investigate equivalent fractions used in contexts *[ACMNA077]*<br><br>Count by quarters halves and thirds, including with mixed numerals. Locate and represent these fractions on a number line *[ACMNA078]*<br><br>Recognise that the place value system can be extended to tenths and hundredths. Make connections between fractions and decimal notation *[ACMNA079]* | Compare and order common unit fractions and locate and represent them on a number line Investigate strategies to solve problems involving addition and subtraction of fractions with the same denominator *[ACMNA103]*<br><br>Recognise that the number system can be extended beyond hundredths *[ACMNA104]*<br><br>Compare, order and represent decimals *[ACMNA105]* | Compare fractions with related denominators and locate and represent them on a number line *[ACMNA125]*<br><br>Solve problems involving addition and subtraction of fractions with the same or related denominators *[ACMNA126]*<br><br>Find a simple fraction of a quantity where the result is a whole number, with and without digital technologies *[ACMNA127]*<br><br>Add and subtract decimals, with and without digital technologies, and use estimation and rounding to check the reasonableness of answers *[ACMNA128]*<br><br>Multiply decimals by whole numbers and perform divisions that result in terminating decimals, with and without digital technologies *[ACMNA129]*<br><br>Multiply and divide decimals by powers of 10 *[ACMNA130]*<br><br>Make connections between equivalent fractions, decimals and percentages *[ACMNA131]* |
| **MONEY AND FINANCIAL MATHEMATICS** | **MONEY AND FINANCIAL MATHEMATICS** | **MONEY AND FINANCIAL MATHEMATICS** |
| Solve problems involving purchases and the calculation of change to the nearest five cents with and without digital technologies *[ACMNA080]* | Create simple financial plans *[ACMNA106]* | Investigate and calculate percentage discounts of 10%, 25% and 50% on sale items, with and without digital technologies *[ACMNA132]* |
| **PATTERNS AND ALGEBRA** | **PATTERNS AND ALGEBRA** | **PATTERNS AND ALGEBRA** |
| Explore and describe number patterns resulting from performing multiplication *[ACMNA081]*<br><br>Solve word problems by using number sentences involving multiplication or division where there is no remainder *[ACMNA082]*<br><br>Use equivalent number sentences involving addition and subtraction to find unknown quantities *[ACMNA083]* | Describe, continue and create patterns with fractions, decimals and whole numbers resulting from addition and subtraction *[ACMNA107]*<br><br>Use equivalent number sentences involving multiplication and division to find unknown quantities *[ACMNA121]* | Continue and create sequences involving whole numbers, fractions and decimals. Describe the rule used to create the sequence. *[ACMNA133]*<br><br>Explore the use of brackets and order of operations to write number sentences [*ACMNA134]* |

## Year 5 Achievement Target

By the end of Year 5, students solve simple problems involving the four operations using a range of strategies. They check the reasonableness of answers using estimation and rounding. Students identify and describe factors and multiples. They explain plans for simple budgets. Students connect three-dimensional objects with their two- dimensional representations. They describe transformations of two-dimensional shapes and identify line and rotational symmetry. Students compare and interpret different data sets.

Students order decimals and unit fractions and locate them on number lines. They add and subtract fractions with the same denominator. Students continue patterns by adding and subtracting fractions and decimals. They find unknown quantities in number sentences. They use appropriate units of measurement for length, area, volume, capacity and mass, and calculate perimeter and area of rectangles. They convert between 12 and 24 hour time. Students use a grid reference system to locate landmarks. They measure and construct different angles. Students list outcomes of chance experiments with equally likely outcomes and assign probabilities between 0 and 1. Students pose questions to gather data, and construct data displays appropriate for the data.

**PROFICIENCY STRANDS**

### Understanding

Students build a robust knowledge of adaptable and transferable mathematical concepts. They make connections between related concepts and progressively apply the familiar to develop new ideas. They develop an understanding of the relationship between the 'why' and the 'how' of mathematics. Students build understanding when they connect related ideas, when they represent concepts in different ways, when they identify commonalities and differences between aspects of content, when they describe their thinking mathematically and when they interpret mathematical information. ☐

### Problem Solving

Students develop the ability to make choices, interpret, formulate, model and investigate problem situations, and communicate solutions effectively. Students formulate and solve problems when they use mathematics to represent unfamiliar or meaningful situations, when they design investigations and plan their approaches, when they apply their existing strategies to seek solutions, and when they verify that their answers are reasonable. ☐

### Fluency

Students develop skills in choosing appropriate procedures, carrying out procedures flexibly, accurately, efficiently and appropriately, and recalling factual knowledge and concepts readily. Students are fluent when they calculate answers efficiently, when they recognise robust ways of answering questions, when they choose appropriate methods and approximations, when they recall definitions and regularly use facts, and when they can manipulate expressions and equations to find solutions. ☐

### Reasoning

Students develop an increasingly sophisticated capacity for logical thought and actions, such as analysing, proving, evaluating, explaining, inferring, justifying and generalising. Students are reasoning mathematically when they explain their thinking, when they deduce and justify strategies used and conclusions reached, when they adapt the known to the unknown, when they transfer learning from one context to another, when they prove that something is true or false and when they compare and contrast related ideas and explain their choices. ☐

## Resources Being Used