West Torrens Partnership *(Draft 15/09/14)*	Australian Curriculum Mathematics V7.0	Year 6

Year Level Description

The proficiency strands *Understanding, Fluency, Problem Solving and Reasoning* are an integral part of mathematics content across the three content strands: *Number and Algebra, Measurement and Geometry, and Statistics and Probability*. The proficiencies reinforce the significance of working mathematically within the content and describe how the content is explored or developed. They provide the language to build in the developmental aspects of the learning of mathematics. *At this year level:*

- *Understanding* includes describing properties of different sets of numbers, using fractions and decimals to describe probabilities, representing fractions and decimals in various ways and describing connections between them, and making reasonable estimations
- *Fluency* includes representing integers on a number line, calculating simple percentages, using brackets appropriately, converting between fractions and decimals, using operations with fractions, decimals and percentages, measuring using metric units, and interpreting timetables
- *Problem Solving* includes formulating and solving authentic problems using fractions, decimals, percentages and measurements, interpreting secondary data displays, and finding the size of unknown angles
- *Reasoning* includes explaining mental strategies for performing calculations, describing results for continuing number sequences, explaining the transformation of one shape into another, explaining why the actual results of chance experiments may differ from expected results

Achievement Standard

By the end of Year 6, students recognise the properties of prime, composite, square and triangular numbers. They describe the use of integers in everyday contexts. They solve problems involving all four operations with whole numbers. Students connect fractions, decimals and percentages as different representations of the same number. They solve problems involving the addition and subtraction of related fractions. Students make connections between the powers of 10 and the multiplication and division of decimals. They describe rules used in sequences involving whole numbers, fractions and decimals. Students connect decimal representations to the metric system and choose appropriate units of measurement to perform a calculation. They make connections between capacity and volume. They solve problems involving length and area. They interpret timetables. Students describe combinations of transformations. They solve problems using the properties of angles.

Students compare observed and expected frequencies. They interpret and compare a variety of data displays including those displays for two categorical variables. They evaluate secondary data displayed in the media. Students locate fractions and integers on a number line. They calculate a simple fraction of a quantity. They add, subtract and multiply decimals and divide decimals where the result is rational. Students calculate common percentage discounts on sale items. They write correct number sentences using brackets and order of operations. Students locate an ordered pair in any one of the four quadrants on the Cartesian plane. They construct simple prisms and pyramids. Students list and communicate probabilities using simple fractions, decimals and percentages.

Content Descriptors

Number and Algebra

- Identify and describe properties of prime, composite, square and triangular numbers
- Select and apply efficient mental and written strategies and appropriate digital technologies to solve problems involving all four operations with whole numbers
- Investigate everyday situations that use positive and negative whole numbers and zero. Locate and represent these numbers on a number line.
- Compare fractions with related denominators and locate and represent them on a number line
- Solve problems involving addition and subtraction of fractions with the same and related denominators
- Find a simple fraction of a quantity where the result is a whole number, with or without digital technologies
- Add and subtract decimals, with and without digital technologies, and use estimation and rounding to check the reasonableness of answers
- Multiply decimals whole numbers and perform divisions that result in terminating decimals, with and without technologies
- Multiply and divide decimals by powers of 10
- Make connections between equivalent fractions, decimals and percentages
- Investigate and calculate percentage discounts of 10%, 25% & 50% on sale items, with and without digital technologies
- Continue and create sequences involving whole numbers, fractions and decimals. Describe the rule used to create the sequence.
- Explore the use of brackets and order of operations to write number sentences

Measurement and Geometry

- Connect decimal representations to the metric system
- Solve problems involving the comparison of lengths and areas using appropriate units
- Convert between common metric units of length, mass and capacity
- Connect volume and capacity and their units of measurement
- Interpret and use timetables
- Construct simple prisms and pyramids
- Investigate combinations of translations, reflections and rotations, with and without digital technologies
- Introduce the Cartesian coordinates system using all four quadrants
- Investigate, with and without digital technologies, angles on a straight line, angles at a point and vertically opposite angles. Use results to find unknown angles.

Statistics and Probability

- Describe probabilities using fractions, decimals and percentages
- Conduct chance experiments with both small and large numbers of trials using appropriate digital technologies
- Compare observed frequencies across experiments with expected frequencies
- Interpret and compare a range of data displays, including side-by-side column graphs for two categorical variables
- Interpret secondary data presented in digital media and elsewhere