Measurement & Geometry Year 4

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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

SPACE

Represent Location

- ☐ KU 1 Pg.
- ☐ KU 2 Pg.
- ☐ KU 3 Pg.

Represent Shape

- ☐ KU 1 Pg.
- ☐ KU 2 Pg.
- ☐ KU 3 Pg.

Represent Transformation

- ☐ KU 1 Pg.
- ☐ KU 2 Pg.
- ☐ KU 3 Pg.
- ☐ KU 4 Pg.

Reason Geometrically

- ☐ KU 1 Pg.
- ☐ KU 2 Pg.
- ☐ KU 3 Pg.
- ☐ KU 4 Pg.

SPACE

Understand Units

- ☐ 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.

Direct Measure

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

Indirect Measure

- ☐ KU 1 Pg.
- ☐ KU 2 Pg.
- ☐ KU 3 Pg.
- ☐ KU 4 Pg.

Estimate

- ☐ KU 1 Pg.
- ☐ KU 2 Pg.
- ☐ KU 3 Pg.

Year 3	Year 4	Year 5
USING UNITS OF MEASUREMENT	**USING UNITS OF MEASUREMENT**	**USING UNITS OF MEASUREMENT**
Measure, order and compare objects using familiar metric units of length, mass and capacity *[ACMMG061]* • recognising and using centimetres and metres, grams and kilograms, and millilitres and litres Tell time to the minute and investigate the relationship between units of time *[ACMMG062]* • recognising there are 60 minutes in an hour and 60 seconds in a minute	Use scaled instruments to measure and compare lengths, masses, capacities and temperatures *[ACMMG084]* - Reading and interpreting the graduated scales on a range of measuring instruments to the nearest graduation. Compare objects using familiar metric units of area and volume. *[ACMMG290]* - Comparing areas using grid paper, volume using centicubes Convert between units of time *[ACMMG085]* - Identifying and using the correct operation for converting units of time. Use am and pm notation and solve simple time problems *[ACMMG086]* - Calculating the time spent at school during a normal day - Calculating the time required to travel between two locations - Using units hours, minutes and seconds. - Determining the arrival time given the departure time.	Choose appropriate units of measurement for length, area, volume, capacity and mass *[ACMMG108]* - Recognising that some units of measurement are better suited to some tasks than others Calculate the perimeter and area of rectangles using familiar metric units *[ACMMG109]* - Exploring efficient ways of calculating the perimeters of rectangles such as adding the length and width together and doubling the result. Compare 12 and 24 hour time systems and convert between them. *[ACMMG110]*
SHAPE	**SHAPE**	**SHAPE**
Make models of three-dimensional objects and describe key features *[ACMMG063]* • exploring the creation of three-dimensional objects using origami, including prisms and pyramids	Compare the areas of regular and irregular shapes by informal means *[ACMMG087]* - Comparing areas using metric units, such as counting the number of square centimetres required to cover two areas by overlaying the areas with a grid of centimetre squares. Compare and describe two dimensional shapes that result from combining and splitting common shapes, with and without the use of digital technologies *[ACMMG088]* - Identifying common two-dimensional shapes that are part of a composite shape by recreating it from these shapes. - Creating two-dimensional shapes from written and verbal instructions.	Connect three dimensional objects with their nets and two-dimensional representations. *[ACMMG111]* - the shape and relative position of each face of a solid to determine the net of the solid, including that of prisms and pyramids. - Representing two-dimensional shapes such as photographs, sketches and images created by digital technologies.
LOCATION AND TRANSFORMATION	**LOCATION AND TRANSFORMATION**	**LOCATION AND TRANSFORMATION**
Create and interpret simple grid maps to show position and pathways *[ACMMG065]* Identify symmetry in the environment *[ACMMG066]*	Use simple scales, legends and directions to interpret information contained in basic maps. *[ACMMG090]* Create symmetrical patterns, pictures and shapes with and without digital technologies. *[ACMMG091]*	Use a grid reference system to describe locations. Describe routes using landmarks and directional language. *[ACMMG113]* Describe translations, reflections and rotations of two-dimensional shapes. Identify line and rotational symmetries. *[ACMMG114]* Apply the enlargement transformation to familiar two dimensional shapes and explore the properties of the resulting image compared with the original. *[ACMMG115]*
GEOMETRIC REASONING	**GEOMETRIC REASONING**	**GEOMETRIC REASONING**
Identify angles as measures of turn and compare angle sizes in everyday situations *[ACMMG064]*	Compare angles and classify them as equal to, greater than or less than a right angle. *[ACMMG089]*	Estimate, measure and compare angles using degrees. Construct angles using a protractor. *[ACMMG112]*

Year 4 Achievement Target

By the end of Year 4, students choose appropriate strategies for calculations involving multiplication and division. They recognise common equivalent fractions in familiar contexts and make connections between fraction and decimal notations up to two decimal places. Students solve simple purchasing problems. They identify unknown quantities in number sentences. They describe number patterns resulting from multiplication. Students compare areas of regular and irregular shapes using informal units. They solve problems involving time duration. They interpret information contained in maps. Students identify dependent and independent events. They describe different methods for data collection and representation, and evaluate their effectiveness.

Students use the properties of odd and even numbers. They recall multiplication facts to 10 x 10 and related division facts. Students locate familiar fractions on a number line. They continue number sequences involving multiples of single digit numbers. Students use scaled instruments to measure temperatures, lengths, shapes and objects. They convert between units of time. Students create symmetrical shapes and patterns. They classify angles in relation to a right angle. Students list the probabilities of everyday events. They construct data displays from given or collected data.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. ☐