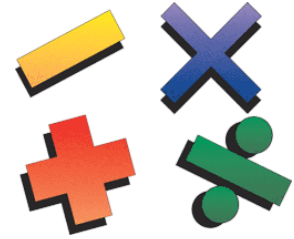# Mathematics Overview of Learning
Week 6-8 Term 4

Black indicates the content descriptor from the beginning of the continuum of learning in each stage (as stated by the Australian Curriculum).
Red indicates the content descriptor aligned with further understanding later in the continuum of learning in each stage (as stated by the Australian Curriculum).

Kindergarten

Week 6 Time MAe1-13MG
Compare and order the duration of events using the everyday language of time (ACMMG007)
Connect days of the week to familiar events and actions (ACMMG008)
Tell time on the hour on analog and digital clocks

Week 7 Data MAe1-17SP
Answer yes/no questions to collect information (ACMSP011)
Organise objects into simple data displays and interpret the displays

Week 8 Position MAe1-16MG
Describe position and movement (ACMMG010)

Activities to support learning at home:
Time
- When having conversations, use terms such as 'daytime', 'night-time', 'yesterday', 'today', 'tomorrow', 'before', 'after', 'next', 'morning' and 'afternoon' and ensure your child has a clear understanding of these terms
- Compare the duration of two events using everyday language, eg 'It takes me longer to eat my lunch than it does to clean my teeth'
- Have your child describe events that take 'a long time' and events that take 'a short time'
- Create a timetable with days of the week placing familiar events and actions that occur on particular days
- Practise naming and ordering the days of the week, classifying weekdays and weekend days
- Take opportunities to tell time on the hour on analog and digital clocks, particularly reinforcing the hour using the term 'o'clock' and discussing the position of the hands.

Data
- Group objects according to characteristics to form a simple data display, eg sort blocks or counters according to colour and then compare the sizes of groups of objects by counting
- To take it a step further, arrange the objects in rows or columns according to characteristics to form a data display, eg arrange the blocks in columns according to colour
Position
- Give and follow simple directions to position an object or themselves, eg 'Put the blue teddy in the circle'
- Find opportunities for your child to describe the position of an object in relation to themselves or in relation to another object using everyday language, such as 'between', 'next to', 'behind' or 'inside', eg 'The table is behind me' or 'The book is inside the box'
- Consolidate the use of the terms 'left' and 'right' by describing the positions of objects in relation to themselves using these terms eg 'The tree is on my right'

Stage 1

Activities to support learning at home:

2D Shapes

- Help your child identify vertical, horizontal and parallel lines in pictures and the environment and discuss other everyday examples of parallel lines, eg railway tracks

- Describe and sort two-dimensional shapes by a given attribute, eg by the number of sides or vertices and get your child to practise explaining the attribute used when sorting two-dimensional shapes

- Sorting 2D shapes worksheet https://www.mathworksheets4kids.com/shapes/color-basic1.pdf

- recognise that rectangles and squares are quadrilaterals - worksheet https://www.mathworksheets4kids.com/shapes/color-rectangles1.pdf

- In conversations,use the term 'two-dimensional' to describe plane (flat) shapes, help your child to name the shape and recognise that the name of a shape does not change if its size or orientation is changed.

- Use the terms 'slide' and 'flip' to describe the movement of the shape and recognise that sliding or flipping a shape does not change its size or features. To take it further, have your child describe the result of a one-step slide or flip of a shape, eg 'When I flip the shape, it is the same but backwards'

- Slide, flip or turn worksheet https://www.mathworksheets4kids.com/transformation/slide-flip-turn/write-real-life1.pdf

- Make designs with line symmetry using paper-folding, pattern blocks, drawings and paintings. As a challenge, complete the following worksheet https://www.mathworksheets4kids.com/symmetry/recognize1.pdf

Mass

- In everyday language: identify materials that are light or heavy; discuss how we could compare the mass of two objects using a pan balance; sort objects on the basis of their mass.

- Heavy and Light Worksheet https://www.mathworksheets4kids.com/heavy-light/seesaw-1.pdf

- Compare and order the masses of two or more objects by hefting.

- Discuss and recognise that mass is conserved, eg the mass of a lump of plasticine remains constant regardless of the shape it is moulded into or whether it is divided up into smaller pieces.

- Challenge - balance scale worksheet
  https://www.mathworksheets4kids.com/addition/two-digit/balancing-scales-easy1.pdf

Position

- Use the terms 'left' and 'right' to describe the positions of objects in relation to themselves and from the perspective of a person facing in the opposite direction, eg 'The ball is on her left'

- Give and follow directions, including directions involving turns to the left and right, to move between familiar locations, eg within the house or school

- Have your child attempt to draw a map of their bedroom, describing the location of features in the room.
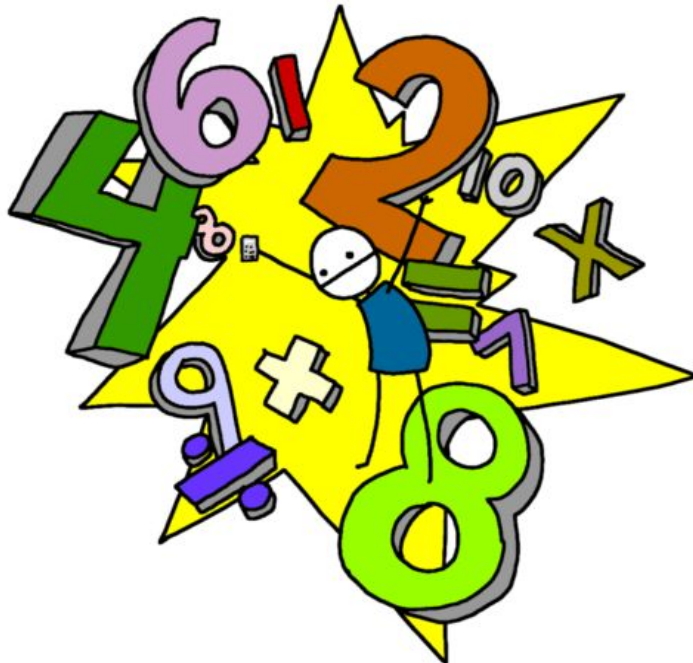
Stage 2

<u>Week 6 and 7 Fractions and Decimals</u> MA2-7NA
Count by quarters, halves and thirds, including with mixed numerals; locate and represent these fractions on a number line (ACMNA078)
Investigate equivalent fractions used in contexts (ACMNA077)
Recognise that the place value system can be extended to tenths and hundredths, and make connections between fractions and decimal notation (ACMNA079)

<u>Week 8 Patterns and Algebra</u> MA2-8NA
Investigate the conditions required for a number to be even or odd and identify even and odd numbers (ACMNA051)
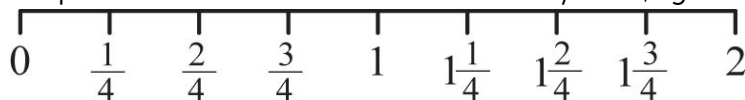Investigate and use the properties of even and odd numbers (ACMNA07

<u>Activities to support learning at home:</u>
Fractions and Decimals
- Place halves, quarters, eighths and thirds on number lines between 0 and 1, eg

$$0 \quad\quad \frac{1}{2} \quad\quad 1$$

$$0 \quad \frac{1}{4} \quad \frac{2}{4} \quad \frac{3}{4} \quad 1$$

$$0 \quad \frac{1}{3} \quad \frac{2}{3} \quad 1$$
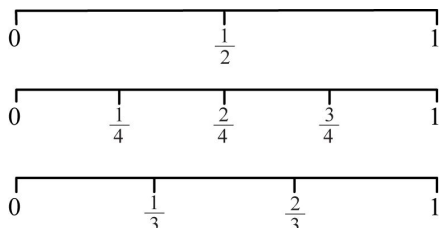
- Place halves, thirds and quarters on number lines that extend beyond 1, eg

$$0 \quad \frac{1}{4} \quad \frac{2}{4} \quad \frac{3}{4} \quad 1 \quad 1\frac{1}{4} \quad 1\frac{2}{4} \quad 1\frac{3}{4} \quad 2$$

- Worksheet http://math.kids-theme.com/math-worksheets/fraction/basic-fraction-1.pdf
- Reinforce the concept of equivalent fractions by drawing pictures and dividing each picture to represent the denominator eg

$$\frac{1}{2} \quad\quad \frac{2}{4} \quad\quad \frac{4}{8}$$
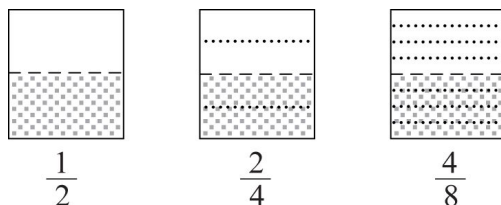
- Equivalent fractions worksheet – click here
- Recognise and apply decimal notation to express whole numbers, tenths and hundredths as decimals, eg 0.1 is the same as 1/10. This can often be demonstrated using a calculator and completing 1 divided by 10 to show 0.1
- Discuss the use of hundredths to represent amounts of money in decimal form, eg five dollars and 35 cents is 5 35/100, which is the same as $5.35

Patterns and Algebra
- Model even and odd numbers of up to two digits using two rows. Then create two rows to represent an odd number and describe the difference between models of even numbers and models of odd numbers.

- Identify even or odd numbers of up to four digits – worksheet
  https://www.mathworksheets4kids.com/odd-even/write-odd-even1.pdf

- The higher level of understanding investigates and generalises the result of adding, subtracting and multiplying pairs of even numbers, pairs of odd numbers, or one even and one odd number, eg even + odd = odd, odd × odd = odd

- Try this quiz (at the end of the webpage) https://www.mathsisfun.com/numbers/even-odd.html

Stage 3

<u>Week 6 Patterns and Algebra MA3-8NA</u>
Use equivalent number sentences involving multiplication and division to find unknown quantities (ACMNA121)
Introduce the Cartesian coordinate system using all four quadrants (ACMMG143

<u>Week 7 Volume and Capacity MA3-11MG</u>
Choose appropriate units of measurement for volume and capacity (ACMMG108
Calculate the volumes of rectangular prisms (ACMMG160)
Connect volume and capacity and their units of measurement (ACMMG138);
Connect decimal representations to the metric system (ACMMG135); Convert between common metric units of capacity (ACMMG136)

<u>Week 8 3D MA3-14MG</u>
Compare, describe and name prisms and pyramids
Connect three-dimensional objects with their nets and other two-dimensional representations (ACMMG111)
Construct simple prisms and pyramids (ACMMG140

<u>Activities to support learning at home:</u>

Patterns and Algebra
- Complete number sentences that involve more than one operation by calculating missing numbers, eg $5×\square=4×10$, $5×\square=30-10$
- Identify and use inverse operations to assist with the solution of number sentences, eg $125÷5=\square$ becomes $\square×5=125$

- Recognise that the number plane (Cartesian plane) is a visual way of describing location on a grid
- Become familiar with the Cartesian Number Plane
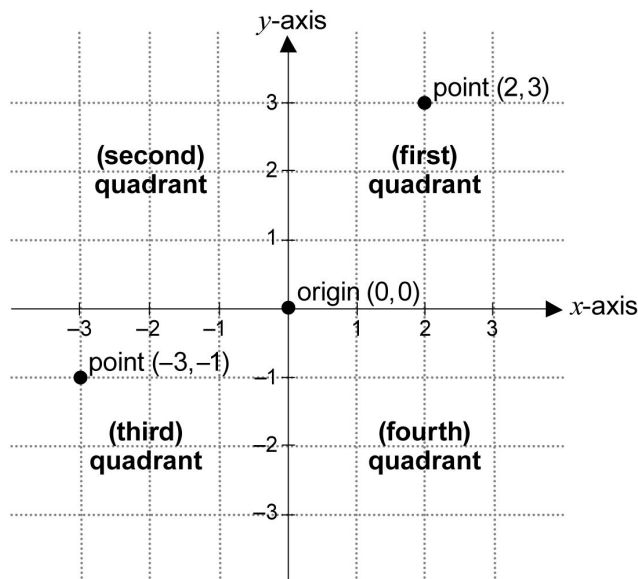
- Challenge - fun using the Cartesian Number Plane
https://www.mathworksheets4kids.com/ordered-pairs/mystery-picture-single1.pdf

Volume and Capacity
- The main concept for this strand, at this stage of learning, is for students to select and use appropriate units to measure the capacities of a variety of containers, eg millilitres for a drinking glass, litres for a water urn
- They will also consolidate the use of cubic centimetres to measure volume and capacity, and the need for the cubic metre.
- Choosing appropriate unit of measure quiz
https://au.ixl.com/math/year-5/choose-the-appropriate-metric-unit-of-measure

- Challenge - converting between units of measurement
  https://au.ixl.com/math/year-5/convert-between-cubic-centimetres-and-millilitres
- Describe the 'length', 'width' and 'height' of a rectangular prism as the 'dimensions' of the prism
- Use repeated addition to find the volumes of rectangular prisms, eg 'My rectangle has 3 layers of 6 cubes, so the total number of cubes is 6 plus 6 plus 6, or 18'
- Use the formula for calculating the volume of prisms to complete problems.
- Worksheet https://www.mathworksheets4kids.com/volume/customary/counting-cubes-easy-1.pdf
- Worksheet https://www.mathworksheets4kids.com/volume/customary/rectangular-prism-easy-1.pdf

3D Shapes

- identify, describe and compare the properties of prisms and pyramids, including:

- number of faces

- shape of faces

- number and type of identical faces

- number of vertices

- number of edges

- Labelling prisms and pyramids worksheet
  https://www.mathworksheets4kids.com/solid-shapes/label-prisms-pyramids-type1-color.pdf

- Construct three-dimensional models of prisms and pyramids and sketch the front, side and top views

- Try this quiz!!! https://www.ixl.com/math/grade-7/front-side-and-top-view

Websites to further develop times tables recall:
http://tablestest.com/
http://www.topmarks.co.uk/maths-games/7-11-years/times-tables