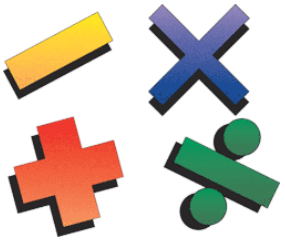
Mathematics Overview of Learning

Week 5/6 Term 2



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

Addition and Subtraction MAe1-5NA
Represent practical situations to model addition and sharing (ACMNA004)

Multiplication and Division MAe1-6NA
Investigate and model equal groups
Record grouping and sharing using informal method

Activities to support learning at home:

(Addition and Subtraction)

- "Friends of Ten" - this is a key concept for students to begin to consolidate in Kindergarten. It involves students being able to very quickly match two numbers that they KNOW will add to 10. For example, 3 and 7; 4 and 6; 5 and 5; 9 and 1 etc.
- This concept could be discussed and modelled in many ways around the house. Find every opportunity you can to discuss this concept.

➔ Place some teddies on the bed and ask how many more teddies are needed to make 10.

➔ When hanging out the washing, pick up 3 pegs and ask your child how many more you need to have 10 pegs. Then perhaps you could line up the pegs on the line and count them. While the pegs are on the line, move them along the line to demonstrate other "friends of ten" combinations.

➔ Setting the table - how many people are having dinner? How many more would make 10?

- There are many incidental opportunities at home where this can be demonstrated and consolidated:

➔ Using their toys, line up 3 toys and ask your child to work out how many more are needed to be added to make 10 toys.

➔ When pegging out the washing, take four pegs and ask your child to give you more pegs so that you have ten - place the pegs on the line and move them to demonstrate different combinations that add to ten.

➔ How many people are coming to dinner? How many more people would need to come to have ten people altogether?

➔ The opportunities are endless. Be sure to also demonstrate this concept by "taking away" from ten and so on.

➔ https://www.youtube.com/watch?v=QS5w8LRnnp0

(Multiplication and Division)

- All you need are some manipulatives like Cheerios or peanuts and some toy characters. As an example, use 3 characters. Ask your child to give each character 2 Cheerios. Now ask them how many Cheerios they have altogether. Your child will count the Cheerios to get a total of 6.
- Do one simple and quick problem on paper per day. For example, a farmer is collecting eggs from his hens. He has 2 boxes and he puts 4 eggs into each. How many eggs did he collect altogether? Draw a picture of this problem and have your child count the eggs. First write 4 + 4 = 8. Explain to your child that adding is one way to find out how many eggs the farmer collected.

Stage 1

Addition and subtraction MA1-5NA
Represent and solve simple addition and subtraction problems using a range of strategies, including counting on, partitioning and rearranging parts (ACMNA015)
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Multiplication and Division MA1-6NA
Recognise and represent division as grouping into equal sets (ACMNA032) /
Represent division as grouping into equal sets and solve simple problems using these representations (ACMNA032))

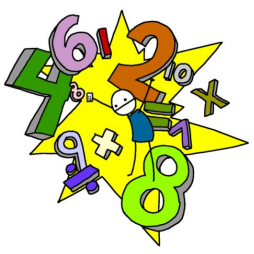
Activities to support learning at home:

(Addition and Subtraction)

- Draw a number line on a piece of paper with a variety of numbers missing. Ask your child to fill in the missing numbers and explain how they knew where the missing numbers went. Eg, the number line could have 8 __ __ __ 12. Your child could also explain that 10 is two more than 8 and two less than 12.
- For this activity use pegs for a piece of paper. Attach eight pegs on one side and one peg on another side. Ask your child what number sentence could be written and have them write it on a piece of paper. Write the number sentence again underneath, but switch the two numbers. Ask your child what is the same and what is different. Point out the fact that when the larger number is first it is quicker to count on. Complete this activity with various numbers.
- Using a 100's chart count forwards and backwards from a given number
- How many different ways can you make 20c, 50c, $1; recognise equivalent amounts using different denominations.
- Draw a number of dots on a piece of paper (or use counters) eg. 8 and say "I wish I had 30. How many more do I need?"
- "The answer is ____What is the question?" Write a number on a piece of paper and get your child to generate questions to match the answer using addition or subtraction.

(Multiplication and Division)

- Get your child to draw 5 flower pots with 3 flowers in each pot. Discuss: How many pots are there? How many flowers in each pot? What is the total?
- In pairs, give your child a picture showing a given number of groups with an even number of objects. Get your child to describe their picture with the number of groups and number of objects. Eg I have 4 groups with 3 flowers in each group. Their partner then draws this and finds total. It is checked to see if it matches. You could then swap and describe a picture and get your child to draw what they hear.
- **Rows and columns-** Use egg cartons and counters to show 2 rows of 6 and 6 rows of 2, discuss number of rows and columns and the number
- Work with your child to effectively count a pile of counters (or group of objects) by twos ,fives and tens.
- Present 12 objects. Discuss the easiest way to display the objects so that they can be counted easily, ie repeated addition, skip counting
- Carl's Cookie Capers http://www.multiplication.com/games/play/carls-cookie-capers



Stage 2

Multiplication and Division MA2-6NA
Recall multiplication facts of two, three, five and ten and related division facts (ACMNA056
Recall multiplication facts up to 10 × 10 and related division facts (ACMNA075)
Fractions and Decimals MA2-7NA
Model and represent unit fractions, including 1/2, 1/4, 1/3 and 1/5 and their multiples, to a complete whole (ACMNA058)
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)

Activities to support learning at home:

Multiplication and Division

- Times tables, times tables, times tables!!! Particularly focus on times tables facts for twos, threes, fives and tens.
- Focus on all times tables facts, up to 10 x 10.
- https://www.youtube.com/watch?v=gBKOWRSQyi8

Fractions and Decimals (Week 6)

- **Circular Fractions:** Students are given paper circles and asked to imagine that it is the top view of a cake. They use pencils or popsticks to show where they would cut the cake to have two, three, four, five and eight equal slices. Guide the students to use fractional language: I have cut my cake into fifths, thirds, etc.
- Using small disposable plates (2, 4 or 8) share a collection of counters etc so that each plate has an equal share. Students describe them using labels of half, quarter or eighth.
- Using lengths of string, ribbon or strips of paper students discuss how they could divide them into halves, quarters or eighths.
- Pose students with a problem. If we wanted to share 3 pikelets between 2 people, how could we do it? How many pikelets would each person receive? Students draw and explain their responses. (Alternatively, alter the number of people and pikelets in the initial question (eg 5 people / 4 pikelets)
- Cut fruit, chocolate, cupcake into half. One half is held up; this is one piece out of two. The notation is written as ½. Repeat this activity using ¼'s and 1/8's
- Making a cake out of paper. Children are given one half of a cake template; they are to draw around the piece and move the piece to form a whole cake, likewise they are given a quarter and an eighth of the cake to draw around to form a whole cake.
- Fraction fiddle: matching cake fractions http://splash.abc.net.au/res/i/L2801/index.html
- Equivalent fractions http://www.mathplayground.com/visual_fractions.html

Stage 3

Time MA3-13MG
Compare 12- and 24-hour time systems and convert between them (ACMMG110)
Determine and compare the duration of events
Interpret and use timetables (ACMMG139)
Draw and interpret timelines using a given scale

Position MA3-17MG
Use a grid-reference system to describe locations (ACMMG113);
Describe routes using landmarks and directional language (ACMMG113)

Activities to support learning at home:

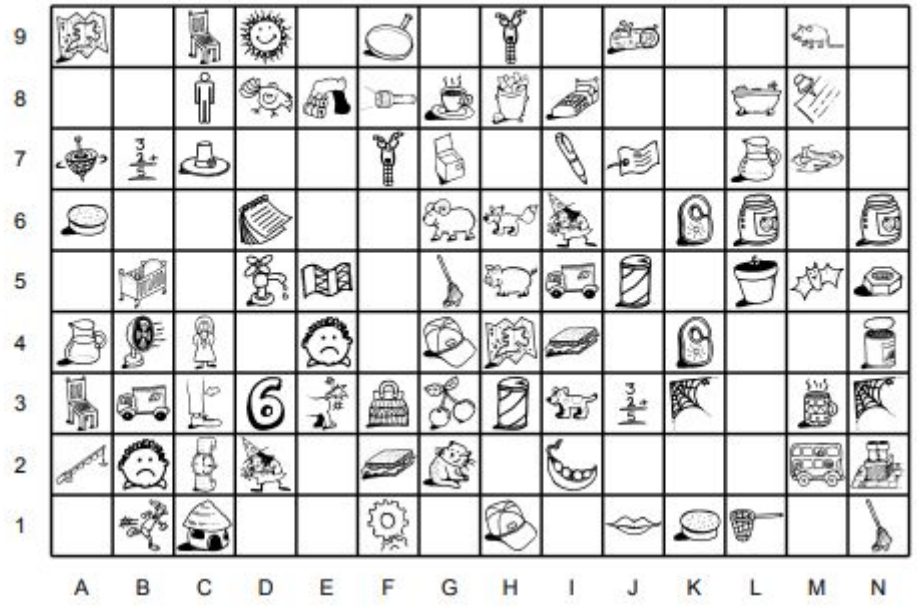
(Time)

- Tell the time accurately using 24-hour time, eg '2330 is the same as 11:30 pm'
- Have students make a clock face with the twelve-hour markings shown in the inner circle and the twenty-four markings on an outer circle. Use this to convert between am/pm notation and 24-hour time.
- 24 hour snap - http://www.bbc.co.uk/skillswise/game/ma25time-game-24-hour-snap
- Try this problem: David has a lot of homework to do. He starts his reading homework at 3:45 and ends at 4:30. Then he does math from 4:30 until 5:00. Lastly, he studies for a science test from 5:00 - 5:30. How much total time did David spend on his homework and studying?
- Look at real-life timetables -

➔ e.g. Sydney trains http://www.sydneytrains.info/timetables/#landingPoint
➔ TV guide https://au.tv.yahoo.com/tv-guide/
➔ Ask a variety of questions about different scenarios involving these timetables. *(Please note: interpreting a timetable is often one of the more challenging skills and requires constant explanation and assistance!!)*
➔ Add and subtract time mentally using bridging strategies, eg from 2:45 to 3:00 is 15 minutes and from 3:00 to 5:00 is 2 hours, so the time from 2:45 until 5:00 is 15 minutes + 2 hours = 2 hours 15 minutes

(Position)

- Find locations on maps, including maps with legends, given their grid references AND describe particular locations on grid-referenced maps, including maps with a legend, eg 'The post office is at E4'
- Describe routes using landmarks and directional language(ACMMG113)
- Find a location on a map that is in a given direction from a town or landmark, eg locate a town that is north-east of Broken Hill
- Describe the direction of one location relative to another, eg 'Darwin is north-west of Sydney'



1. What is in square (L,5)?
2. What is in square (N,3)?
3. What is in square (B,2)?
4. What is in square (B,1)?
5. What is in square (M,7)?
6. What is in square (J,1)?
7. What is in square (L,6)?
8. What is in square (B,7)?
9. What is in square (F,9)?
10. What is in square (E,4)?
11. What is in square (H,8)?
12. What is in square (I,7)?
13. What is in square (I,5)?
14. What is in square (A,2)?
15. What is in square (G,8)?
16. What is in square (H,5)?

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