Quick Curriculum Guide (Year Five)

We understand that children as well as parents of children that are home from school may be feeling a bit stressed at the current time. Our aim is to try to make mathematics a little more accessible for you. We have put together a simple overview of some of the Australian Mathematics Curriculum, for each year level from Foundation to Year 6. Please note, most States and territories have made some adjustments to the Curriculum.

About Year 5:

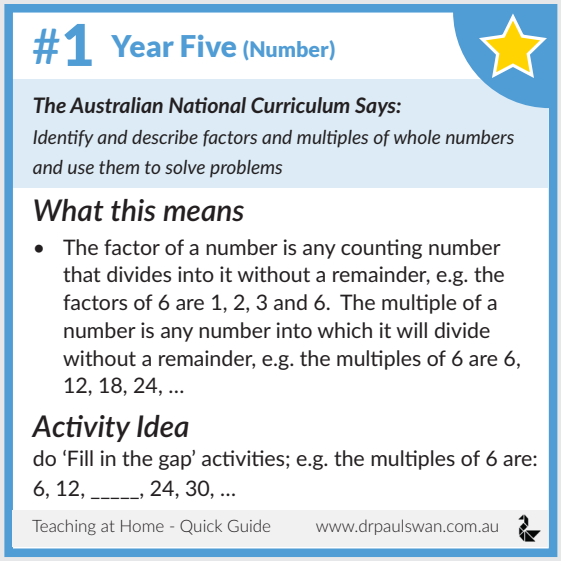
- Year 5 becomes a lot more formal. As a result, not every card can have a quick, suitable at-home activity.
- Because of this Year 5 represents the transition to more "paper and pencil" type work.

For Teachers:

- You are welcome to send home these cards and activities to parents. A great way of organising your term might be cutting up the cards and adding to the activities ideas.
- Please note, some states and territories do not 100% match the national Curriculum in their state curriculums.

For Parents:

- Keep in mind this is what children learn over the **whole year,** not just in one term.
- All children are different, so expectations will vary even between children within the same year level.
- For the listed activities, we think these are all worth trying / could be managed in a home setting even for those inexperienced with teaching at home. We have tried to avoid specialty equipment.
- Even if you're not too sure about teaching, just introducing the idea and some related vocabulary can be a great help.
- Regular routines are beneficial for children. Many of these activities can be repeated, which will help the children retain what they learn. You can do the activity the same way or make slight changes to keep it interesting. ***It is better to pick one or two activities and repeat them than it is to try them all once!***



A sample card

Note the features of these cards:

- The text from the Australian Curriculum
- The star in the top right
  - Filled in: this means this is a topic that in our opinion is vital, perhaps as a building block to concepts in later years.
  - Not filled in: while still important, we consider this secondary.
- A simplified explanation of what the curriculum is describing
- A single activity or game idea. Some will reference free games and downloadables that you can find on www.drpaulswan.com.au. The vast majority of these activity ideas can be done at home.

Note: Although we have put the entries of the Australian Curriculum in one box each, they are not equal in terms of their importance or the amount of time needed to provide an understanding. Some entries will only need one of two learning sessions. Others will benefit from more, and need re-visiting a number of times throughout the year. Some entries, after an initial learning session, can be given incidental mention as the occasion arises. Teachers will use their professional judgements when deciding how long to allow for each of the entries; often combining some of them within one or more learning sessions.

The full Australian Curriculum: Mathematics can be found at www.australiancurriculum.edu.au/f-10-curriculum/mathematics/

Acknowledgement to Linda Marshall for her assistance developing these notes.

#1 Year Five (Number)

The Australian National Curriculum Says:

Identify and describe factors and multiples of whole numbers and use them to solve problems

What this means

- The factor of a number is any counting number that divides into it without a remainder, e.g. the factors of 6 are 1, 2, 3 and 6. The multiple of a number is any number into which it will divide without a remainder, e.g. the multiples of 6 are 6, 12, 18, 24, ...

Activity Idea

do 'Fill in the gap' activities; e.g. the multiples of 6 are: 6, 12, _____, 24, 30, ...

#2 Year Five (Number)

The Australian National Curriculum Says:

Use estimating and rounding to check the reasonableness of answers to calculations

What this means

- When doing any calculation, the child should estimate what the answer will look like. So, if they are using a calculator to work out, e.g. 28 x 42, it will be about 30 x 40 which is 1200.

Activity Idea

Ask them to estimate answers such as the above calculation 28 x 42.

#3 Year Five (Number)

The Australian National Curriculum Says:

Solve problems involving multiplication of large numbers by one or two-digit numbers using efficient mental, written and appropriate digital technologies

What this means

- This can be done mentally, on paper or using a calculator.

Activity Idea

Try to find real-life examples, e.g;

- 5 movie tickets at $22 per ticket. (Mental)
- 8 movie tickets at $22.79 (Paper or calculator or rounding)

#4 Year Five (Number)

The Australian National Curriculum Says:

Solve problems involving division by a one digit number, including those that result in a remainder

What this means

50 ÷ 5 = 10 (no remainder)

50 ÷ 4 = 12 r 2 (12 remainder 2) or 12.5

Activity Idea

Try to find real-life examples, e.g. a $240 shared between five people will give each person $48 (240 ÷ 5). If it is to be shared between nine people, each person will get about $26.65 (249 ÷ 9).

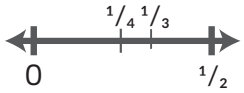
#5 Year Five (Number)

The Australian National Curriculum Says:

Compare and order common unit fractions and locate and represent them on a number line

What this means

- Unit fractions have a numerator (top number) of 1, e.g. $^1/_2$, $^1/_3$ & $^1/_4$, etc.



Activity Idea

Locate $^1/_2$, $^1/_3$, $^1/_4$, $^1/_5$, $^1/_6$, $^1/_8$, $^1/_{10}$ on the number line

#6 Year Five (Number)

The Australian National Curriculum Says:

Investigate strategies to solve problems involving addition and subtraction of fractions with the same denominators

What this means

- The denominator in a fraction is the bottom number; it indicates the fraction name; e.g. with $^1/_5$, the denominator is 5 which tells us that the whole has been divided into 5 equal parts, and each part is called one fifth.
- *Same denominators:* This is asking you to do calculations like $^1/_5 + {}^2/_5$ and $^5/_8 - {}^2/_8$.

#7 Year Five (Number)

The Australian National Curriculum Says:

Recognise that the place value system can be extended beyond hundredths

What this means

- In our decimal place value system, the value of a digit depends on its position in a numeral. To the left, the numbers increase ten-fold; to the right they decrease by powers of ten.

2.165
thousandths
hundredths
tenths

Activity Idea

Split (partition) numbers like the above example. See Year 4 Quick Guide for more information.

#8 Year Five (Number)

The Australian National Curriculum Says:

Compare, order and represent decimals

What this means

- ***Compare:*** Compare the size of two decimals
- ***Order:*** 3 or more decimals.
- ***Represent:*** Best done on a number line.
- Watch for the common misconception that the longer decimal is larger. For example, some students at first believe that 4.106 is larger than 4.2. This may stem from them incorrectly reading the number as "four point one-hundred and six."

#9 Year Five (Number)

The Australian National Curriculum Says:

Create simple financial plans

What this means

A financial plan may look at costs (expenses or expenditure) and profits (money left over). Or at savings and expenditure.

Activity Idea

Have the child plan a simple meal and work out the cost of the ingredients. If they are given $50, what will they get as change?

#10 Year Five (Measurement)

The Australian National Curriculum Says:

Choose appropriate units of measurement for length, area, volume, capacity and mass.

What this means

- The key word here is 'Choose'. The child thinks about which unit is appropriate. For example, we would not work out the mass (weight) of an egg using kilograms; grams would be more appropriate.

Activity Idea

Make up a fictional recipe.

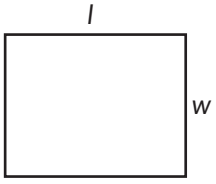
#11 Year Five (Measurement)

The Australian National Curriculum Says:

Calculate perimeter and area of rectangles using familiar metric units

What this means

- The perimeter of a rectangle is the distance around the outside of it. It is calculated using $l + w + l + w$ or $2 \times l + 2 \times w$
- The area of a rectangle is the inside of it. It is calculated using $l \times w$.



#12 Year Five (Measurement)

The Australian National Curriculum Says:

Compare 12- and 24-hour time and convert between them

What this means

- This is useful when reading bus or plane timetables.

Activity Idea

Play "POP 12 Hour to 24 Hour" 1 and 2 (free games from www.drpaulswan.com.au)

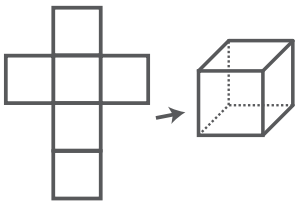
#13 Year Five (Geometry)

The Australian National Curriculum Says:

Connect three-dimensional objects with their nets and other two-dimensional representations

What this means

- A net is a 2D pattern which can be folded to make a model of a 3D object.



Activity Idea

Play "POP 3D Objects Nets" (free game from www.drpaulswan.com.au)
Make some nets from card and fold.

#14 Year Five (Geometry)

The Australian National Curriculum Says:

Use a grid reference system to describe locations. Describe routes using landmarks and directional language

What this means

- See image. The landmark in this case would be at D2.
- Always read horizontally then vertically.
- Describe with directional language (e.g. left, right)

6						
5						
4						
3						
2				×		
1						
	A	B	C	D	E	F

Activity Idea

Make a grid reference map of your bedroom.

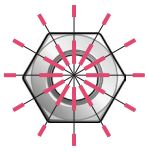
#15 Year Five (Geometry)

The Australian National Curriculum Says:

Describe translations, reflections and rotations of two-dimensional shapes. Identify line and rotational symmetries.

What this means

- Translation: a.k.a 'sliding'
- Reflection
- Rotation: a.k.a 'turning'
- Line symmetry: see image 1
- Rotational symmetry: see image 2



Activity Idea

Start with a shape and do a translation, reflection, etc.

#16 Year Five (Geometry)

The Australian National Curriculum Says:

Apply the enlargement transformation to familiar two dimensional shapes and explore the properties of the resulting image compared with the original.

What this means

- With an enlargement transformation, the object or figure is made larger by a certain factor (e.g. doubled or trebled), but the same shape is maintained.

Activity Idea

On grid paper, scale up a simple shape (e.g. a rectangle) by doubling its side lengths.

#17 Year Five (Geometry)

The Australian National Curriculum Says:

Estimate, measure and compare angles using degrees. Construct angles using a protractor

What this means

- The most common angle we refer to is the right angle (90°). Other types of angles are compared to this, e.g. an acute angle is less than 90°, an obtuse angle is between 90° and 180° (two right angles), etc. See *https://www.youtube.com/watch?v=852yX-5-_N4*
- *While most protractors are 180 degrees we prefer the 360 degree (full circle) protractors because many students confuse the double scale on the 180 degree protractor.*

#18 Year Five (Stats & Probability)

The Australian National Curriculum Says:

List outcomes of chance experiments involving equally likely outcomes and represent probabilities of these outcomes using fractions

What this means

- When a dice is thrown, there is an equal chance of getting a 1, or a 2, or a 3, etc. When a coin is tossed, there is an equal chance of getting a Head or a Tail.

Activity Idea

Flip a coin 50 times and record results.

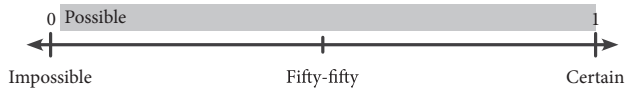
#19 Year Five (Stats & Probability)

The Australian National Curriculum Says:

Recognise that probabilities range from 0 to 1

What this means

- No probability at all (impossible) is a 0 chance. Absolute certain probability is 1.



Activity Idea

Write chance words onto a probability number line e.g. “likely”, “unlikely”, “maybe”, “once in a blue moon” etc.

#20 Year Five (Stats & Probability)

The Australian National Curriculum Says:

Pose questions and collect categorical or numerical data by observation or survey

What this means

- e.g. “Which colour car passes the window the most?” Collect data to answer the question.

Activity Idea

Collect data and make a table/graph.

#21 Year Five (Stats & Probability)

The Australian National Curriculum Says:

Construct displays, including column graphs, dot plots and tables appropriate for data type, with and without digital technologies

What this means

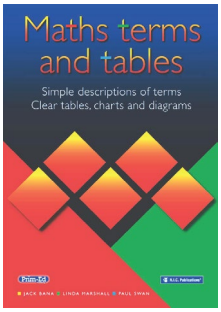
- Data displays = a graph or table.
- Dot plot is new at this year level, students will have encountered column graphs in Year 4.

Activity Idea

Explore making a graph in a Microsoft Excel spreadsheet or similar program.

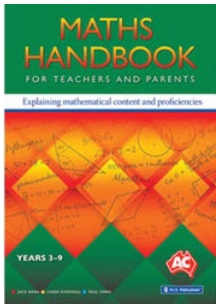
Further Support

Maths Terms and Tables



Definitions of mathematical terms

Maths Handbook for Teachers and Parents



Explains mathematical content

Further Support: Games

The **Multispin** and **Spindiv** games are perfect for practising the multiplication (2x - 9x) and division (÷2 - ÷9) facts.

Purchase from www.drpaulswan.com.au/shop

Free games for fractions and downloadable pages for grids can be downloaded from www.drpaulswan.com.au

Further Support: Tables

The **Networking Tables** series of books is available for ebook download

Available from www.drpaulswan.com.au/shop
You can buy the full set at a discount.