Quick Curriculum Guide for Parents and Teachers (Year Three)

These Quick Curriculum Guides have been designed to take a look at the Australian Mathematics Curriculum, explain the terminology and provide a few interpretations. This tool has been designed as a document to assist both parents and teachers. The activity ideas only use a minimum of materials, most of which can be found at home and can easily be adapted to the classroom. In places where there is ambiguity, Linda and I have used our professional judgement to put forward what we feel is **appropriate for students at this year level.**

About Year Three:

- In Year 3 children are expected to recall the basic addition facts (0 + 0 to 9 + 9) and related subtraction facts (fact families)
  e.g. 7 + 2 = 9, 2 + 7 = 9
  9 - 2 = 7, 9 - 7 = 2
- In Year 2 they learned strategies for this but in Year 3 they are expected to be able to recall them.
- Children start their multiplication (a.k.a the tables) facts.

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!***

#1 Year Three (Number)

The Australian National Curriculum Says:
Investigate the conditions required for a number to be odd or even and identify odd and even numbers

What this means

- Be able to identify odd and even.
- Be able to notice patterns when working with odd and even numbers, e.g. odd + odd = even.

Activity Idea

Line up pairs of objects to show even numbers (2, 4, 6, ...) With an odd number, you cannot make pairs, there's 1 left over (1, 3, 5, ...).

Play "Odd One Out" (free game) from drpaulswan.com.au

Teaching at Home - Quick Guide www.drpaulswan.com.au

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 Three (Number)

The Australian National Curriculum Says:

Investigate the conditions required for a number to be odd or even and identify odd and even numbers

What this means

- Be able to identify odd and even.
- Be able to notice patterns when working with odd and even numbers, e.g. odd + odd = even.

Activity Idea

Line up pairs of objects to show even numbers (2, 4, 6, ...) With an odd number, you cannot make pairs, there's 1 left over (1, 3, 5, ...).

Play "Odd One Out" (free game) from drpaulswan.com.au

#2 Year Three (Number)

The Australian National Curriculum Says:

Recognise, model, represent and order numbers to at least 10 000

What this means

- The child can read four-digit numbers in numerals (e.g. 4002) and translate them to words ("four thousand and two") and vice versa.
- Be able to read numbers such as 4 520 and know that it is one more than 4 519.

Activity Idea

Write four-digit numbers on sticky notes and have the child arrange them in order.

#3 Year Three (Number)

The Australian National Curriculum Says:

Apply place value to partition, rearrange and regroup numbers to at least 10 000 to assist calculations and solve problems

What this means

- In Year 3 children learn how to split up numbers make it easier to do calculations.
- Caution: Schools teach this in slightly different ways across the country.

Activity Idea

Check with your child's school for their preferred method.

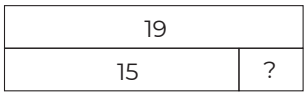
#4 Year Three (Number)

The Australian National Curriculum Says:

Recognise and explain the connection between addition and subtraction.

What this means

The child can explain all these parts are related,



e.g.: 15 + 4 = 19, 15 + ? = 19, 19 - ? = 15, *etc.*

Activity Idea

Draw "Part Part Whole" diagrams as above and put numbers in them.

#5 Year Three (Number)

The Australian National Curriculum Says:

Recall addition facts for single-digit numbers and related subtraction facts ...

What this means

- In Year 2 they learn the facts 0 + 0 to 9 + 9 (and related subtraction) with the help of materials, in Year 3 they are expected to ***remember*** the facts.
- ***This does not mean they have to be able to recite it instantly. Under 3 seconds is a good benchmark.***

Activity Idea

If struggling, play "Build To" and "Doubles Games" (free games from drpaulswan.com.au)

#6 Year Three (Number)

The Australian National Curriculum Says:

Recall multiplication facts of two, three, five and ten, and related division facts

What this means

- Note ***Recall***, as per Card 5.
- Typically called 'the tables' note that division is also included.
- ***Related facts*** means one fact: 3 x 4 = 12 has related facts 4 x 3 = 12, 12 ÷ 4 = 3 and 12 ÷ 3 = 4.

Activity Idea

Play "Arrays Game (Milestones Edition)" from www.drpaulswan.com.au (free games)

#7 Year Three (Number)

The Australian National Curriculum Says:

Represent and solve problems involving multiplication using efficient mental and written strategies and appropriate digital technologies

What this means

- Understands multiplication words such as 'by', 'lots of', 'groups of', 'times as many,' etc. Can 'translate' from the words to the number sentence.
- ***Efficient strategies:*** Does not get bogged down in too many steps or forget where they're up to.

Activity Idea

Download "Word Problems Multiplication & Division" and the interactive version on drpaulswan.com.au

#8 Year Three (Number)

The Australian National Curriculum Says:

Model and represent unit fractions including $^1/_2$, $^1/_4$, $^1/_3$, $^1/_5$ and their multiples to a complete whole

What this means

- A unit fraction is where the numerator (top number) is 1.
- ***Model:*** use materials e.g. paper strips.
- ***Multiples:*** $^1/_4 + ^1/_4 + ^1/_4 + ^1/_4$ (or 4 x $^1/_4$) is $^4/_4$ or 1.
- ***Represent:*** show as a picture e.g. on a number line.

Activity Idea

Fold paper strips.

#9 Year Three (Number)

The Australian National Curriculum Says:

Represent money values in multiple ways and count the change required for simple transactions to the nearest five cents

What this means

- 50c and $0.50 are equivalent.
-  and  are the same, etc.
- Student can give change. e.g. a $1.70 item, $2 tendered, student may count back a 10c and say "one dollar eighty" and 20c saying "two dollars."

Activity Idea

Play shops, using method above. Use catalogues.

#10 Year Three (Number)

The Australian National Curriculum Says:

Describe, continue, and create number patterns resulting from performing addition or subtraction

What this means

- Able to continue a pattern such as 5, 9, 13, 17 ... and 50, 47, 44, 41, 38, __, ... and describe what is happening in each step.

Activity Idea

Calculator activity: Press +5 = = = ... and the calculator will count in 5's. Change the first number to start anywhere (e.g. 7 + 5 = = =).

Count backwards: Try 40 - 2 = = = ...

#11 Year Three (Measurement)

The Australian National Curriculum Says:

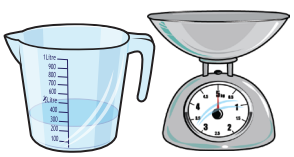
Measure, order and compare objects using familiar metric units of length, mass and capacity

What this means

- Unlike Year 2, we use standard units (m, kg, L) etc.

Activity Idea

- Comparing containers (capacity): Use the measuring jug from your cooking cupboard to fill up 3 containers, record the millilitres or litres each holds. Order them from "holds least" to "holds most" water.



#12 Year Three (Measurement)

The Australian National Curriculum Says:

Tell time to the minute and investigate the relationship between units of time

What this means

- Can tell time to the minute
- 60 min to 1 hr, 60 seconds to 1 minute, etc.

We recommend the use of both analogue and digital clocks. Help the child see that, for example, 22 minutes past 4 can be written as 4:22.

Activity Idea

Play "Time Match Minute" from drpaulswan.com.au

Make references to the clocks nearby during the day.

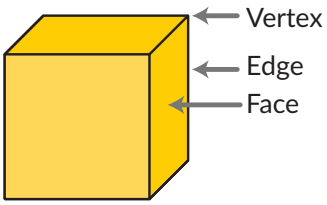
#13 Year Three (Geometry)

The Australian National Curriculum Says:

Make models of three-dimensional objects and describe key features

What this means

- Key features = Vertices (corners), Faces and Edges



Activity Idea

Use toothpicks and blu-tack to make a cube and a pyramid.

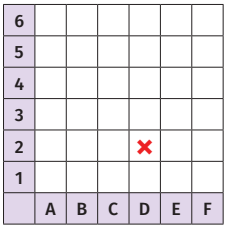
#14 Year Three (Geometry)

The Australian National Curriculum Says:

Create and interpret simple grid maps to show position and pathways

What this means

- Shows position. They can draw lines to show a path (e.g. Treasure Map)
- *Read **across** then **up**. Gives (D,2)*



Activity Idea

Use the 10 & 20mm Grids Printable download from www.drpaulswan.com.au to play "Hidden Treasure" in your backyard/sandpit or somewhere inside the house.

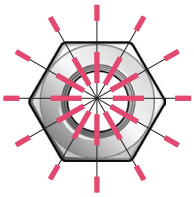
#15 Year Three (Geometry)

The Australian National Curriculum Says:

Identify symmetry in the environment

What this means

- There are two types of symmetry, line symmetry and rotational symmetry. Students need to know these in order to properly 'identify' symmetry in the environment



Activity Idea

Try a Google image search on the term 'Symmetry'.

#16 Year Three (Geometry)

The Australian National Curriculum Says:

Identify angles as measures of turn and compare angle sizes in everyday situations

What this means

- Does NOT mean using protractors.
- *Measures of turn:* Relate quarter turn to 90 degrees and turning around as 180 degrees (a u-turn).
- *Comparing angle sizes: (Requires 2 pairs of scissors)* show that angle is not related to size. In this case of these two pairs of scissors, one pair is bigger than the other but the angle is the same.

#17 Year Three (Stats & Probability)

The Australian National Curriculum Says:

Conduct chance experiments, identify and describe possible outcomes and recognise variation in results

What this means

- Roll dice, flip coins, flick spinners, etc.

Activity Idea

- Using a standard 1-6 dice, how many rolls do you need to get all of the numbers 1, 2, 3, 4, 5 and 6 at least once? Try several times.

#18 Year Three (Stats & Probability)

The Australian National Curriculum Says:

Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs, with and without the use of digital technologies

What this means

- Children can collect data They could use this data to produce tables, lists and graphs.
- In picture graphs one picture represents one item.

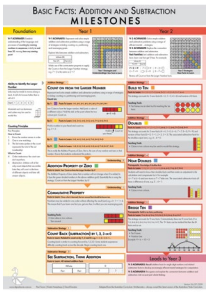
Activity Idea

Sort a pack of lollies into the different colours. Make a column graph from the results. Keep gaps between each column. Download grid paper from drpaulswan.com.au

Free Support: Addition / Subtraction

A suggested order for teaching basic addition and subtraction facts (related to card #4) can be found at www.drpaulswan.com.au/planning

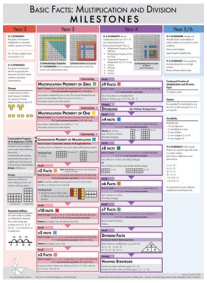
Milestones: Basic Facts Addition & Subtraction (Free Download)



Free Support: Multiplication / Division

A suggested order for teaching basic addition and subtraction facts (related to card #4) can be found at www.drpaulswan.com.au/planning

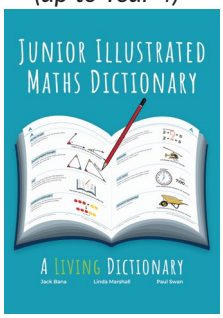
Milestones: Basic Facts Addition & Subtraction (Free Download)



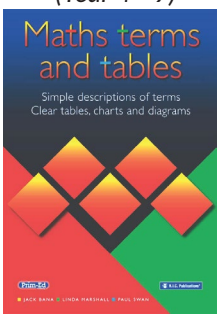
Further Support: Language of Maths

If we're unsure of what a word means in English, we look up a dictionary. Here are two maths dictionaries to help define and explain maths terms.

For younger students (up to Year 4)



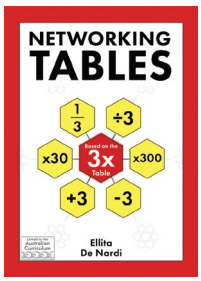
For older students (Year 4 - 9)

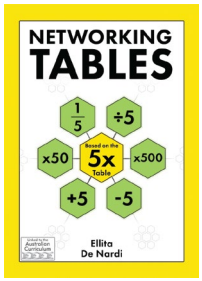


Further Support: Tables

The Networking Tables series of books is available for ebook download

The books applicable for Year 3 are:



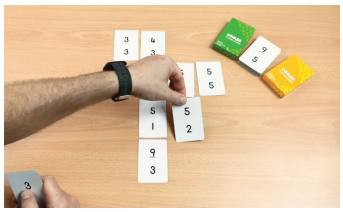


Available from www.drpaulswan.com.au/shop

In Year 4 students learn the rest of the tables. You can buy the full set at a discount.

Further Support: Games

Ideal games for Year 3 are the card games ROWCO and COMBO



Instructions on how to play as well as extra games you can play with the cards are available at Youtube.com/user/DrPaulSwan

Purchase from www.drpaulswan.com.au/shop

Free Support: Downloadable Games

Games suitable for Year 3, including the Time Match and Arrays Games mentioned in this document, can be downloaded from drpaulswan.com.au/games/