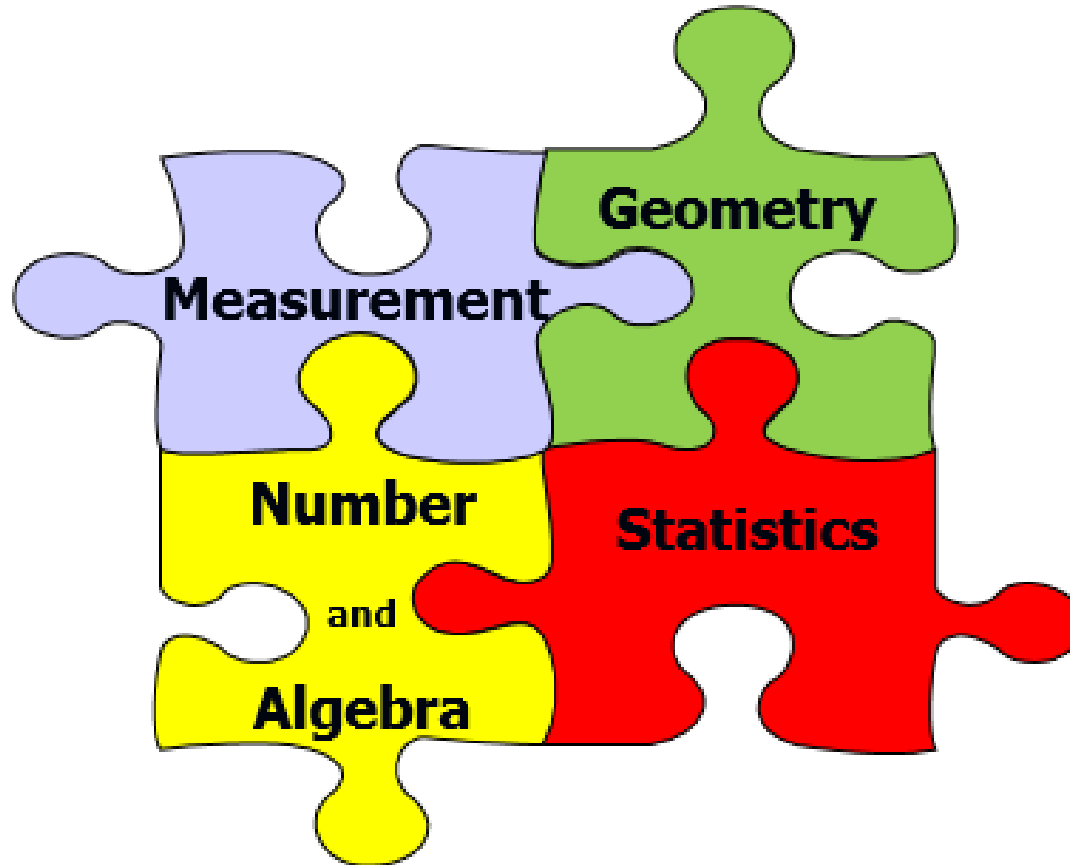


Mathematics Evening

Marie Hirst – Education Consultant



Odd One Out

Which number
could be the
odd one out?

Why?

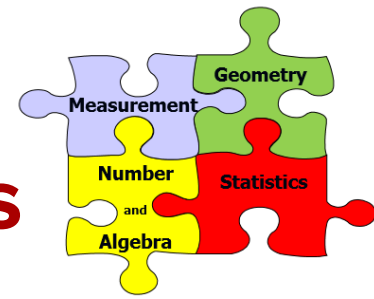
9

16

25

43

Number is the most important strand of maths in the primary years



Number Knowledge



Identifying numbers

Ordering numbers

Place Value

Basic Facts

Number Strategies

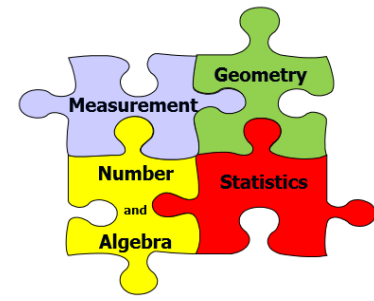


Addition & Subtraction + -

Multiplication & Division $\times \div$

Fractions, ratios, decimals
and percentages

The NZ Curriculum provides clear progressions from years 1 - 13



Number Knowledge



Identifying numbers

Ordering numbers

Place Value

Basic Facts

Number Strategies



Addition & Subtraction + -

Multiplication & Division $\times \div$

Fractions, ratios, decimals
and percentages

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
NZ Curriculum Level 1	NZ Curriculum Level 2		NZ Curriculum Level 3		NZ Curriculum Level 4		

Count
and form
a set of
objects



Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
NZ Curriculum Level 1	NZ Curriculum Level 2		NZ Curriculum Level 3		NZ Curriculum Level 4		

One to one counting

Next step:
Join and separate sets



Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
NZ Curriculum Level 1	NZ Curriculum Level 2		NZ Curriculum Level 3		NZ Curriculum Level 4		

Count all the objects from one



Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
NZ Curriculum Level 1		NZ Curriculum Level 2	NZ Curriculum Level 3		NZ Curriculum Level 4		

Count on
(or back)



Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
NZ Curriculum Level 1		NZ Curriculum Level 2		NZ Curriculum Level 3		NZ Curriculum Level 4	

Part-whole thinking

Split and re-group numbers using place value and basic facts

This extends to problems like $43 + 26$



Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
NZ Curriculum Level 1		NZ Curriculum Level 2		NZ Curriculum Level 3		NZ Curriculum Level 4	

Thinking flexibly,
using a range of
strategies with
whole numbers.

This extends to multi-
digit problems like
 $543 + 299$



Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
NZ Curriculum Level 1		NZ Curriculum Level 2		NZ Curriculum Level 3		NZ Curriculum Level 4	

Thinking flexibly,
using a range of
strategies with
decimal numbers,
fractions and
integers

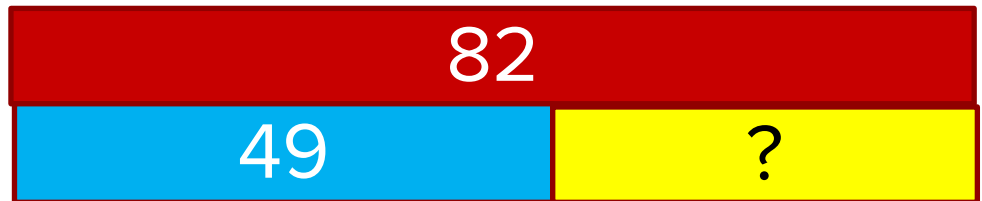


Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
NZ Curriculum Level 1		NZ Curriculum Level 2		NZ Curriculum Level 3		NZ Curriculum Level 4	

Thinking flexibly
How would you solve..

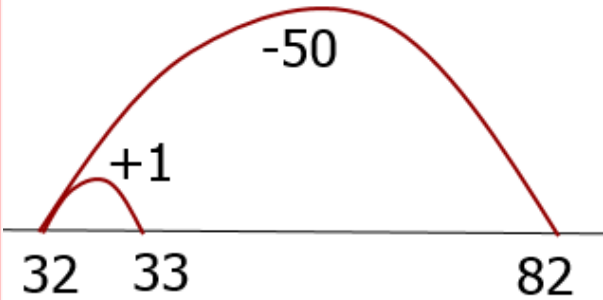
$$82 - 49$$

82 children were playing on the field. 49 were boys, how many were girls?



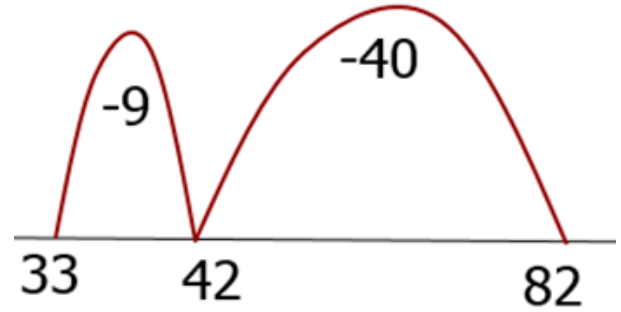
Rounding and Compensating (Tidy Numbers)

$$82 - 50 + 1 = 33$$

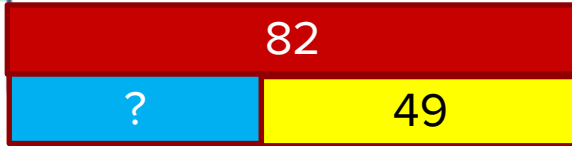


Place Value Partitioning

$$82 - 40 - 9 = 33$$

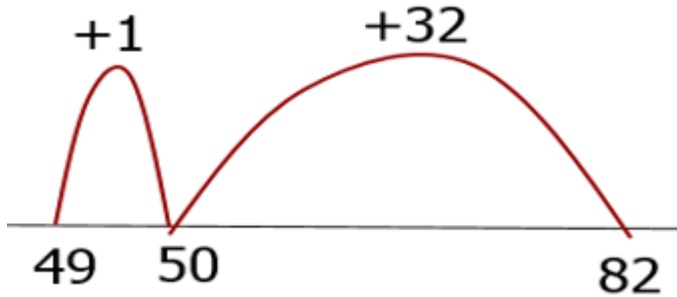


$$82 - 49$$

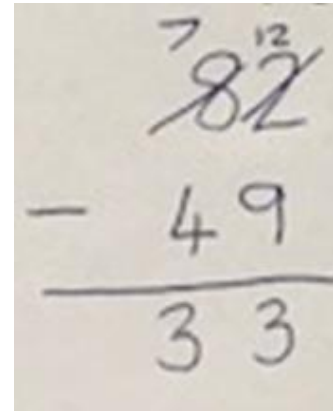


Reversibility (Inverse)



$$49 + ? = 82$$



Standard written form (Algorithm)



Rule following without understanding


$$\begin{array}{r} 98 \\ + 6 \\ \hline 914 \end{array}$$
$$\begin{array}{r} 98 \\ + 6 \\ \hline 158 \end{array}$$


Understanding why and how methods work is crucial, just like comprehension when reading



So which strategy is best?

It depends on what the question is

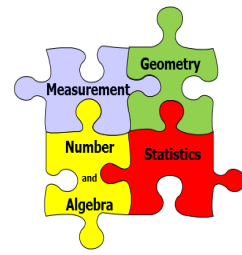
$$1001 - 998$$

$$1747 - 368$$

$$7 \times 998$$

$$16 \times 25$$

Addition and subtraction is only a small part of the **Number** strand of maths



Number Knowledge



Identifying numbers

Ordering numbers

Place Value

Basic Facts

Number Strategies



Addition & Subtraction + -

Multiplication & Division $\times \div$

Fractions, ratios, decimals
and percentages

How is maths taught in New Zealand?

A balance of:

- small group teaching
- whole class instruction.
- problem solving
- limited use of textbooks

With an emphasis on:

- using **maths equipment** and diagrams
- student **discussion** and understanding how methods work
- **thinking flexibly**, seeing different ways to get an answer

Students are assessed using:

- observations, oral interviews, formal assessments



What about basic facts?

$$3 \times 4$$

- Fluent recall of basic facts is important – it frees up our short term working memory
- Strategies **then** memorise:
Focusing on speed and rote memorisation are less effective ways to learn these.
- Please support your child's learning with these at home – ask your child's teacher what set of facts they are currently learning



Play lots of games

Monopoly



Rummikub



Bingo



Pick up Sticks



Magnetic Darts



Yahtzee



Tiddly Winks



Game of Life



Cribbage



Uno / Rummy



Patience Card Games



Scrabble



Online basic facts practice

[Topmarks.co.uk](https://www.topmarks.co.uk) - Hit the button

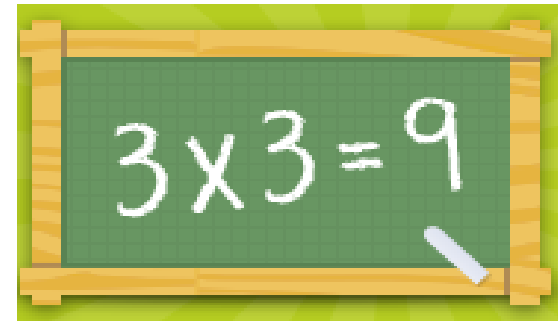
<https://www.topmarks.co.uk/maths-games/hit-the-button>

[Timestables.co.nz](https://www.timestables.co.nz)

<https://www.timestables.co.nz/>

[E-ako number facts](https://e-ako.nzmaths.co.nz)

<https://e-ako.nzmaths.co.nz/games/games.aspx>

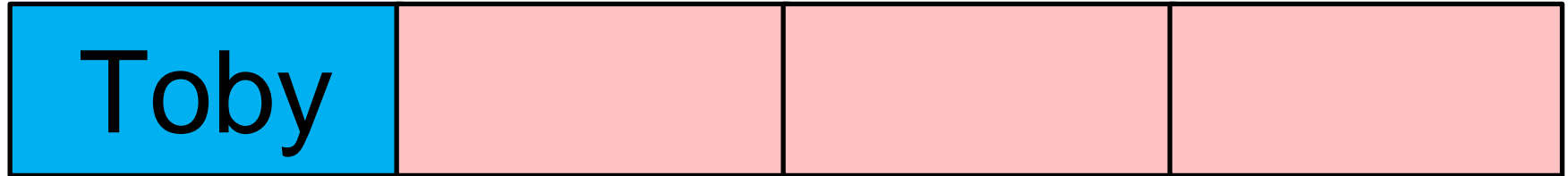


PROBLEM SOLVING

- Teaches thinking, flexibility and creativity
- Engage with real world contexts to make sense and relevance of mathematics
- It's interesting and enjoyable
- Sends an important that mathematics is more than memorising facts and rules



Lily and Toby have 60 sweets in total between them. Lily has three times as many sweets as Toby. How many sweets does Toby have?



$$60 \div 4 = 15$$

Lily

nzmaths.co.nz families

This is the home of mathematics in New Zealand



[Cooking](#) ↗



[Going places](#) ↗



[Reading](#) ↗



[Gardening](#) ↗



[Shopping](#) ↗



[Playing games](#) ↗

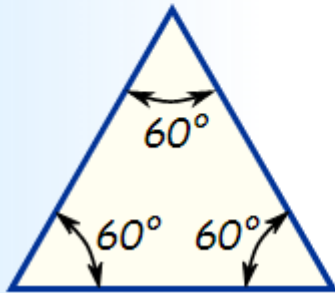


mathsisfun.com dictionary

This is a useful online interactive dictionary to help with learning and understanding maths terminology

Definition of

Equilateral Triangle



A triangle with all three sides of equal length.

All the angles are 60°

Build a growth mindset



Mathematics Information Evening

Please take the opportunity to explore more information and examples of the different levels of mathematics as well as ask any specific questions that you may have

THANK YOU
FOR COMING



Think like a mathematician

- Estimate
- Look for patterns
- Change your thinking
- Use diagrams, equipment and record your ideas.



Talk like a mathematician

- Ask questions
- Use maths language
- Explain your thinking
- Justify your thinking



Act like a mathematician

- Take a risk
- Check your work
- Make mistakes
- Keep trying



**Be a
mathematician**