

The background of the entire slide is a light cream color with a pattern of various numbers (0-9) in different colors (red, blue, green, yellow, purple, orange) scattered across it. The numbers are of different sizes and orientations, some appearing to be hand-drawn or painted.

Tālofa Lava!

**Welcome to our Home School
Partnership Meeting**

*Please drop your school age children to
Room 3/4*



Today's Programme



- Prayer
- Maths warm up - Miss O'Neill & Mrs Butcher
- Growth Mindset and Maths - Ms Dyer
- Knowledge vs Strategy - Mrs Hahn
- Beginning school maths (Years 0/1) - Miss Cultrera
- Early numeracy (Years 1/2) - Mrs McLeod & Miss Evans
- The middle years (Years 3/4) - Ms Li & Miss Vergis
- Senior primary school maths (Years 5/6) - Miss Down & Mrs Drummond
- Accelerating Learning in Mathematics (ALiM) - Mrs Butcher & Miss O'Neill
- Any questions?
- Closing prayer

Sign of the Cross in Samoan

I le suafa o le Tama, le Alo ma le Agaga Paia.
Amene



Beginning to Problem Solve with “I Notice, I Wonder”

Metacognition

I think about my thinking!



- I'm thinking...
- I'm noticing...
- I'm wondering....
- I'm seeing....
- I'm feeling...

Using “I notice and I wonder” is a metacognitive strategy all students can access.

Noticing and Wonderings

Take

Take a piece of paper and fold it in half.



Label

Label one side "Noticing" and the other side "Wondering".



Take

Take some independent think time to note down your noticing's and wonderings about the image about to be displayed.

The Prime
Climb –
I notice
I wonder



Fixed Versus Growth Mindset

Fixed Mindset

Intelligence is static
Leads to a desire to LOOK SMART
and therefore a tendency to:

-  Avoid Challenges
-  Give Up Easily Due To Obstacles
-  See Effort As Fruitless
-  Ignore Useful Feedback
-  Be Threatened by Others' Success

Growth Mindset

Intelligence can be developed
Leads to a desire to LEARN
and therefore a tendency to:

-  Embrace Challenges
-  Persist Despite Obstacles
-  See Effort As Path To Mastery
-  Learn From Criticism
-  Be Inspired By Others' Success

Growth Mindset Talk

What can I say to myself?



1. I'm not good at this.....I can't do this yet.
2. I give up.....I'll use some of the strategies I have learnt.
3. It's good enough.....Is this my best work yet?
4. I made a mistake.....This was my first attempt in learning.
5. This is too hard.....If something is hard, it means I'm learning!
6. I'm really good at maths.....I understand this because I have been practising.
7. I will never be as clever as them.....I'm going to find out how they do that.
8. I can't do this.....This is going to take time and effort to master.
9. I can't make this any better.....Improvements can always be made.
10. They can't do it.....How can I help them to understand this?



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O LE SASI
o se vaega
O LE A'OA'IGA.

Mistakes are a part of learning.

THE POWER OF **YET**



I can't do this...*yet.*

This doesn't work...*yet.*

I don't know...*yet.*

It doesn't make sense...*yet.*

I don't get it...*yet.*

I'm not good at this...*yet.*

— Samoan —



Se,
TAUMAFAI.

Take a risk.

The Learning Pit

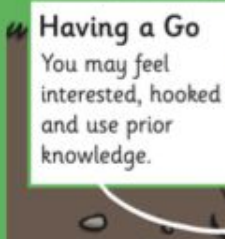
Facing a Challenge

You may feel anxious, nervous, scared, excited or comfortable.



Having a Go

You may feel interested, hooked and use prior knowledge.



Problem Solving

You may feel anger, distraction, frustration, challenge, confusion or uncomfortable.



Deep Learning

You may learn a sense of collaboration and concentration.



Successful Learning

You should feel achievement and pride.



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10 What Questions

to Develop a Growth Mindset in Children

1. What did you do today that made you think hard?
2. What happened today that made you keep on going?
3. What can you learn from this?
4. What mistake did you make that taught you something?
5. What did you try hard at today?
6. What strategy are you going to try now?
7. What will you do to challenge yourself today?
8. What will you do to improve your work?
9. What will you do to improve your talent?
10. What will you do to solve this problem?





Pe E TE manatu
E TE mafai PE LEAI,
e sa' o oe.

Whether you think you can or think you can't, you're right. – Henry Ford

The Mathematics & Statistics Learning Area

Number and algebra - using appropriate mental, written, or machine calculation methods in flexible ways

Geometry and measurement - properties and symmetries of shapes, position and movement; using appropriate units and instruments, predicting, calculating rates of change

Statistics - data, investigations, interpretations, evaluations

The Number Framework

- Helps teachers, parents and students understand the stages of learning of number knowledge and understanding
- Two sections to the Number Framework. The **Strategy** section describes the processes students use to solve problems involving numbers - how they work things out. The **Knowledge** section describes the key items about number that children know and can recall quickly.
- The two sections are linked, with children requiring knowledge to improve their strategies, and using strategies to develop new knowledge.

The Strategy Section

A series of stages that children progress through as they develop their understanding of a range of strategies for solving number problems. There are eight stages altogether, with the first three often grouped together:

- **Stage 0-3: Counting from One** - children can solve problems by counting from one, either using materials or in their head.
- **Stage 4: Advanced Counting** - children can solve problems by counting in ones, or by skip counting, starting from numbers other than one.
- **Stage 5: Early Additive** - children can solve simple problems by splitting up and adding together the numbers in their head.
- **Stage 6: Advanced Additive** - children use a range of different methods to solve more challenging problems in their head.
- **Stage 7: Advanced Multiplicative** - children use a range of different methods to solve multiplication and division problems in their head.
- **Stage 8: Advanced Proportional** - children can solve complicated problems involving fractions, decimals and percentages using a combination of methods.

One of the ways that you can most easily support your child is to help them develop the knowledge that they will need to be able to use these strategies

Number knowledge

		Number Sequence	Place Value	Number Facts
Year 1	Stage 0-3	Numbers to 20		Facts with 10
Year 2	Stage 4	Numbers to 100	Numbers to 100	Addition facts
Year 3-4	Stage 5	Numbers to 1000	Numbers to 1000	Single digit multiplication facts
Year 5-6	Stage 6	Numbers to 1 000 000	All whole numbers and tenths	Multi digit multiplication facts and fractions that add to 1
Year 7+	Stage 7-8	Fractions, percentages and negative numbers	Decimals, percentages and powers of ten	Common factors, divisibility rules and conversion of common fractions

Useful Websites

<https://nzmaths.co.nz/families-and-wh-nau>

<https://nzmaths.co.nz/number-knowledge-activities>

Year 0/1 Number Knowledge

- ❖ Forward sequencing and consolidation of numbers to 10
- ❖ Backward sequencing of numbers to 10
 - Next Step: forwards and backwards sequencing to 20
- ❖ Children need to be able to identify numbers presented at random-instant recognition of numbers to 10
- ❖ Backwards counting: can be most difficult
- ❖ Next steps after consolidation of backward sequencing to 10
 - Backwards sequencing from 20
 - Extension: from 21-that way children experiencing the cross over from the previous ten

Year 0/1 Knowledge & Resources

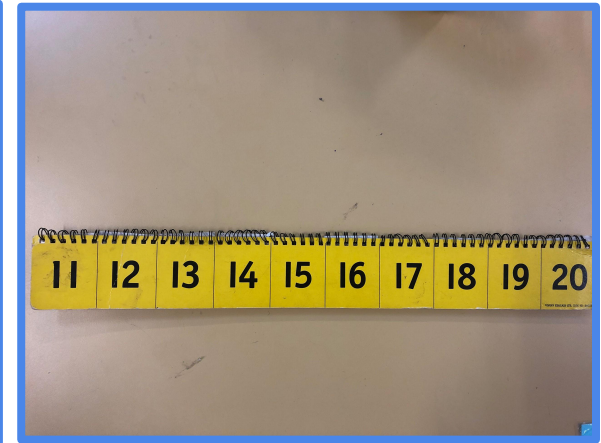
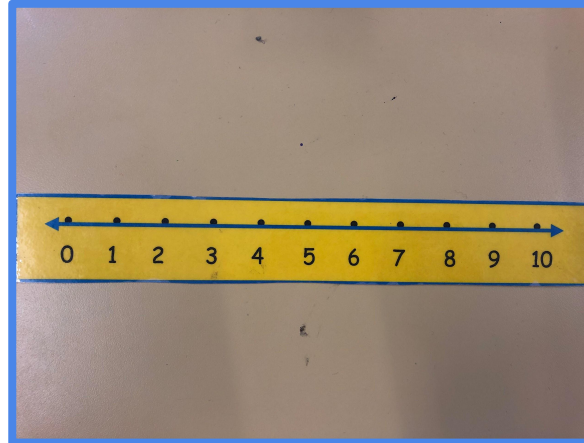
- ❖ Making values of numbers using materials: blocks, beans, toys
 - They need to be able to create a number value using materials
 - Count one-one: eg. Can you get 6 teddies from the box?



100's Chart

Created By: www.kindergartenkidsplay.blogspot.com

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



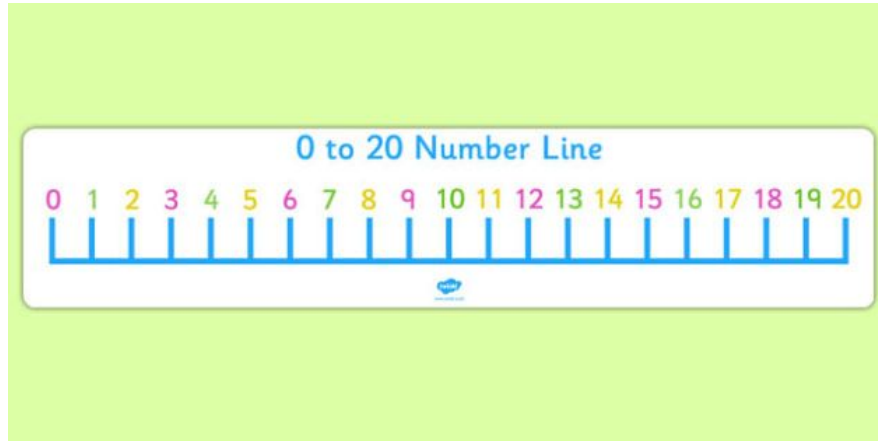
Year 1 & 2 Number Knowledge

- After 2 years at school expectation: children should have achieved level 1 - stage 4 (numeracy)
- Numbers up to 100 (forwards & backwards counting - crossing over tens, before/after numbers, number order)
- Place value of 2 digit numbers, eg knowing there are 6 tens in 60 (number of tens in a decade)
- Basic facts to 10 (addition & subtraction) include doubles, number bonds to 10, '5 and' facts and basic facts eg $5+4$, $9-3$
- Doubles, halves and number bonds to 20 (family of facts)
- Teen and ty numbers and teen facts $10 + 6 = 16$, $10 + ? = 18$
- Skip counting in 2s, 5s and 10s up to 100 (forwards and backwards)

Year 1 & 2 Number Knowledge- Resources

Samples of resources

School website for ideas to help at home



A 10x10 grid titled "Our Hundreds Chart" with a colorful, patterned border. The grid contains numbers from 1 to 100, arranged in rows of 10. The numbers are written in a black, bold font.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

PLACE VALUE

MILLIONS

HUNDREDS

TENS

ONES

THOUSANDS

HUNDREDS

TENS

ONES

UNIT

HUNDREDS

TENS

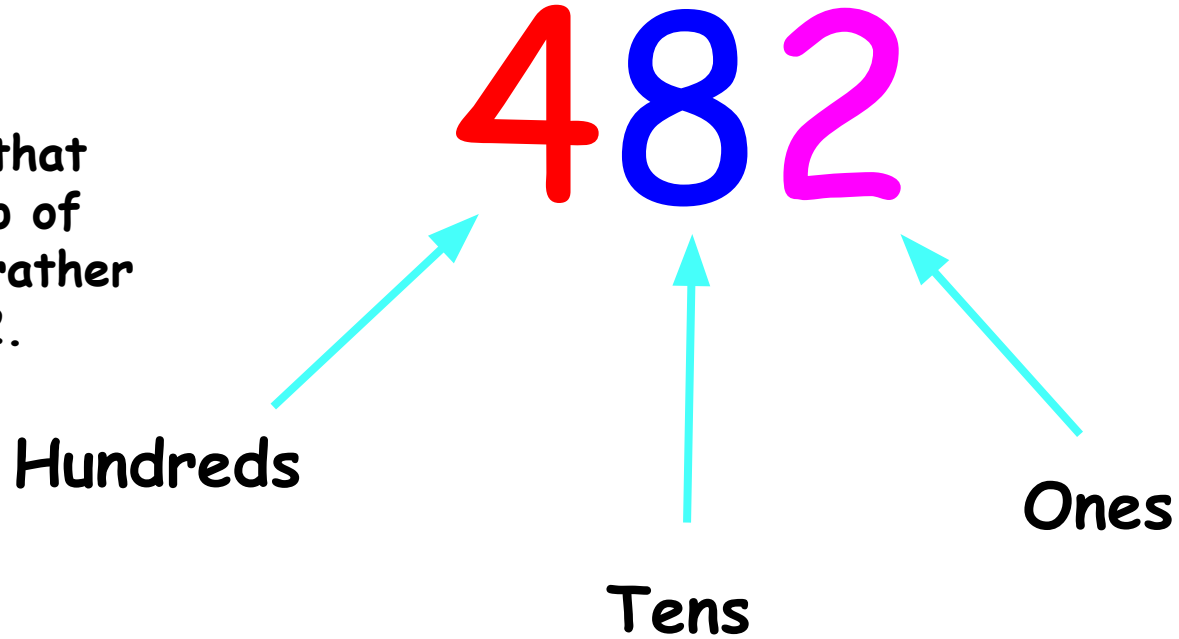
ONES

987, 654, 321

PLACE VALUE - YEARS 3 & 4

Place value is the value of each digit in a number.

It means understanding that 482 is made up of 400, 80 and 2, rather than 4, 8, 2.



Adding using Place Value

Year 3 students need to be able to understand the value of numbers in order to add and subtract using place value.

$$\text{E.g; } 79 + 34 =$$

$$70 + 30 = 100$$

$$9 + 4 = 13$$

$$100 + 13 = 113$$



Y4 Knowledge Expectations - Stage 5

- **Skip count forwards and backwards in 3s**
E.g. 3, 6, 9, 12...
(as well as in 2s, 5s, and 10s)
- **Count forwards and backwards by 1s, 10s, and 100s up to 1000**
E.g. 345, 355, 356...1000
175, 185, 195...1000
- **Read and order numbers up to 1000**
E.g. 117, 256, 356, 942, 333
117, 256, 333, 356, 942
- **Say the number 1 more/less, 10 more/less, 100 more/less**
E.g. ____, 145, 155, ____

Y4 Knowledge Expectations - Stage 5

- **Know groupings within 100**
E.g. $43 + 57$ $28 + 72$
- **Know addition and subtraction facts to 20**
E.g. $14 + 3 = 17$ $19 - 5 = 14$
- **Know groupings of 10s in a 3 digit number**
E.g. $\underline{32}7 = 32$ tens
- **Round 3 digit numbers to the nearest 10 or 100**
E.g. $246 \rightarrow 250$ $304 \rightarrow 300$
- **Know multiples of 100 that add to 1000**
E.g. $600 + 400 = 1000$
- **Know multiplication and division facts for x2, x5, and x10**
- **Know unit fractions**
 $\frac{1}{2}$ $\frac{1}{4}$ $\frac{1}{3}$ $\frac{1}{5}$ $\frac{1}{10}$
- **Order fractions with the same denominator**
E.g. $\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$

Year 5 / 6 Math

In year 5 and 6 your child will be learning to solve realistic problems using their growing understanding of numbers, algebra (symbols), geometry (shapes), measurement and statistics. They will be solving problems involving several steps and which require them to choose the most appropriate method. They will be learning a range of approaches to solve problems and will be able to make general statements about numbers and patterns.

Problem Solving - Steps

Understanding the Problem

- Read it carefully! What is the question asking me?
- What information is important?
- Write the problem into my own words / mathematical sentences!
- Have I seen this problem before?
- Do I need to do any research on words or ideas I don't know?

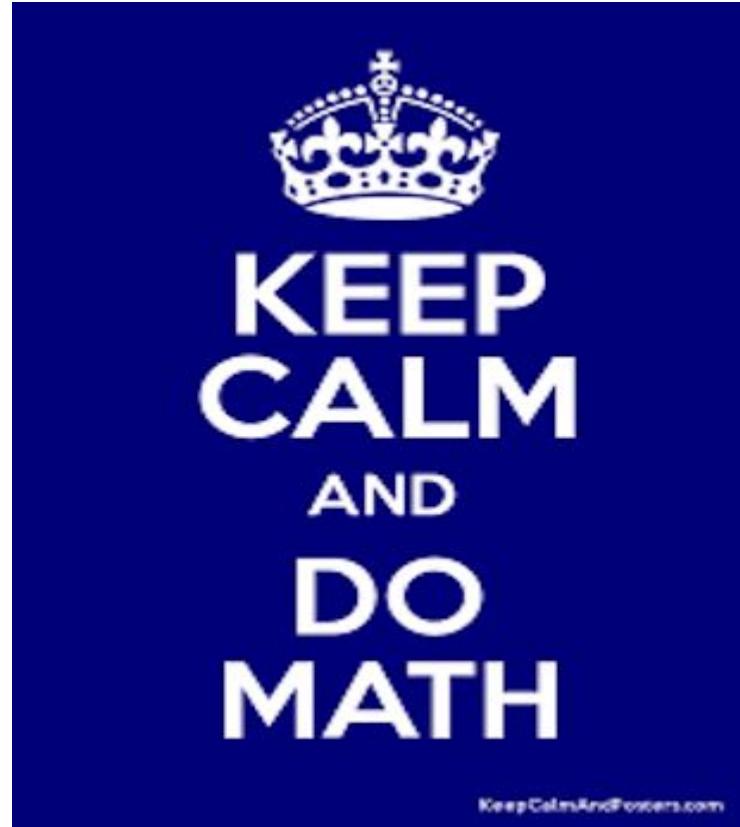
Problem Solving - Steps

Decide on a Strategy (way)

- What problem strategies might I use?
- What is it I need to do ($+$, $-$, \times , \div)
- Write / draw a plan
- What materials do I need?

Problem Solving - Steps

Do IT!



Problem Solving - Steps

Reflecting back

- Do I have a solution I can explain (justify)?
- Have I answered the problem?
- Are there a number of solutions?
- Is there another problem I would like to investigate?

How can you help at home?

Support the development of knowledge.

- Continue to work on place value - read, write and sequence large numbers over 100,000
- Instant recall of multiplication facts and multiplication patterns times, e.g. $7 \times 2 = 14$, $7 \times 20 = 140$, $7 \times 200 = 1,400$

This is important to support strategies for multiplication and division.

- Fractions: taking the opportunity to discuss knowledge of fractions in everyday contexts.

Huge misconception around fractions e.g. quarter is only a half of a half. They are unable to apply fraction knowledge to thirds and fifths etc.

ALIM - What is it?

Accelerating learning in mathematics

Accelerating Learning in Mathematics (ALiM) uses the expertise within the school to undertake a short-term intervention to accelerate the progress of students not meeting expectations in mathematics. The intervention is in addition to effective classroom teaching.

ALIM aims

- Provide rich opportunities to learn in mixed ability groups using mathematical language.
- Accelerate children's learning in maths (Make more than expected progress)

Acceleration vs remediation

		Acceleration		Remediation
Self-efficacy	<ul style="list-style-type: none"> • • 	<ul style="list-style-type: none"> • Self-confidence and engagement increase. • Academic progress is evident. 	<ul style="list-style-type: none"> • • 	<ul style="list-style-type: none"> • Students perceive they're in the "slow class," and self-confidence and engagement decrease. • Backward movement leads to a sense of futility and lack of progress.
Basic skills	<ul style="list-style-type: none"> • • 	<ul style="list-style-type: none"> • Skills are hand-picked just in time for new concepts. • Students apply skills immediately. 	<ul style="list-style-type: none"> • • 	<ul style="list-style-type: none"> • Instruction attempts to reteach every missing skill. • Skills are taught in isolation and not applied to current learning.
Prior knowledge	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Key prior knowledge is provided ahead of time, enabling students to connect to new information. 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Typically does not introduce prior knowledge that connects to new learning.
Relevance	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Treats relevance as critical component to student motivation and memory. 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Relevance is not seen as a priority.

Connection to core class •	Instruction is connected to core class; ongoing collaboration is emphasized. •	Instruction is typically isolated from core class.
Pacing and direction • •	Active, fast-paced, hands-on. • Forward movement; goal is for students to learn on time with peers. •	Passive, with focus on worksheets or basic software programs. Backward movement; goal is for students to "catch up" to peers.

Checklist for acceleration:

- ☐ Students can clearly articulate the meaning of today's learning goal.
- ☐ Students receive scaffolding for prerequisite skills in the context of new learning.
- ☐ Vocabulary development is hands-on and ongoing and focuses on clearly identified academic vocabulary terms.
- ☐ Remediation provided is just in time and set in the context of new learning.
- ☐ Assessment is visible and yields immediate feedback.
- ☐ Students largely work cooperatively in a safe learning environment.
- ☐ Students are learning the big idea of new concepts in advance of their core-class peers.
- ☐ The acceleration teacher and the core-class teacher engage in ongoing collaboration regarding pacing and student progress.

Math Talk Moves



Revoicing

"So you're saying that _____.
Do I have that right?"



Repeating

"Can you restate or rephrase
what _____ just said?"



Reasoning

"Do you agree or disagree,
and why?"



Adding On

"Would someone like to add on?"



Waiting

"Take your time...we'll wait..."



Turn & Talk

"Partner turn and talk
or think-pair-share"

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Math Solutions.



Student voice

Before - After 6 weeks

How do you feel about maths?

- It's very confusing
- Well, I feel like I am much more confident. I feel I am getting a lot better at it

Why do you think this?

- Because my mind does not get math
- I didn't understand it at the start of the year. I always got so confused. Now I have a head start.

How has ALIM helped you so far?

- I am much more confident. I know what I am doing and I always have a head start on what we're learning.



Good Shepherd School Prayer



Lord Jesus, we thank you at the beginning of each day for the gift of life. Help us to use our gifts this day to help others and make life more enjoyable for all of us. Bless each of us in our school community and help us to become the best people we can.