PARENT WORKSHOP

Sue Fine
Beaumaris P. S.
Prep
2020

How much of your day revolves around Mathematics?

- What time should my alarm go off in the morning?
- Do I have enough time to wash my hair?
- How much milk do I need if I want an extra cup of tea?
- What chance of it raining today?

WHAT IS THE AUSTRALIAN CURRICULUM DESIGNED TO DO?

- The basis for curriculum planning in Victorian schools for the P-10 years.
- The means for schools to place their work within a state wide context.
- A common basis for reporting student achievement within broadly defined outcomes.

Points of growth in Number

Name	Know some number names but have difficulty stating them in sequence above 10	CO
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Rote count the number sequence to 10 but are unable to reliably count a collection of That size	PV0.
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Can conserve number	
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Read and record some single digit numbers	
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Recognise simple patterns	
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Can place objects in order 1st to 5th	
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Count a collection of around 10 objects	
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Recognise models of numbers from 0 -10	
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Compare two small collections ?	AS0
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Know numbers before and after a given number to 10	
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Rote count the number sequence to at least 20	C1
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Confidently count a collection of around 20 objects	C2
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Read, record, interpret and order single-digit numbers	PV1
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Count all to find the total of two collections	A.S.1
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Find the total in a multiple group situation referring to individual items only	MD1
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Count on from one number to find the total of two collections	AS2
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Choose appropriately from strategies including count back, count down to and count up from in subtraction situations	AS3
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Count by1s forward/backward from various starting points between 1 and 100	C 3.
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Know numbers before and after a given number up to 100	
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Read, record, interpret and order two-digit numbers	P.V2.
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Add and subtract single digit numbers using basic number facts and strategies	
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Count from 0 by 2s, 5s and 10s to a given target	C4
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Count from any two-digit number by 10s	
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Read, record, interpret and order three-digit numbers	P.V.3.
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	In addition or subtraction problems, use strategies such as doubles, commutativity, adding 10, tens facts, and other known facts	AS4
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Model all objects to solve multiplicative and sharing situations	MD2
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Solve multiplication and division problems where objects are not all modelled or perceived	MD3.
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Given a non-zero starting point, can count by 2s, 5s, and 10s to a given target	C5
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Read, record, interpret and order numbers beyond 1000	PV.4
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	In addition or subtraction problems, use strategies such as near doubles, adding 9, build to next ten, fact families and intuitive strategies	AS5
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Can solve a range of multiplication problems using strategies such as commutativity, skip counting and building up from known facts	MD4
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Can solve a range of division problems using strategies such as fact families and building up from known facts	MD5
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Count from a non-zero starting point by any single - digit number	C6
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Can apply counting skills in practical tasks	C6
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

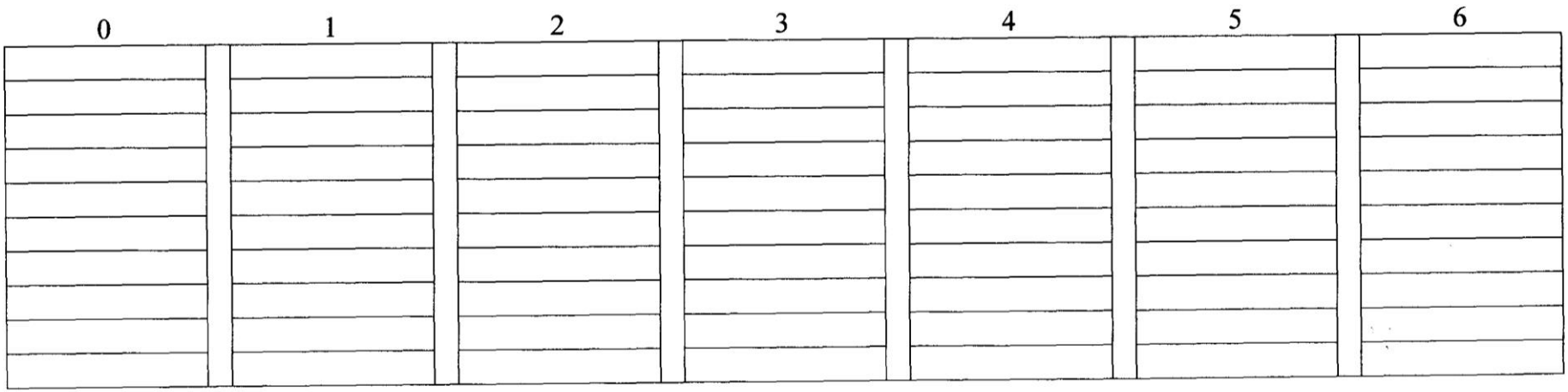
Name	Can extend and apply knowledge of place value in solving problems	P.V.5
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Given a range of tasks (including multi-digit numbers), can solve them mentally, using the appropriate strategies and a clear understanding of key concepts	AS6
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

Name	Solve a range of multiplication and division problems (including multi-digit numbers) in practical contexts	MD6
Amanda		
Bridgit		
Conor		
Daniel		
Emily		
Evan		
Freya		
James		
James		
James		
Jackson		
Jeremy		

SECTION A – COUNTING

0. Not apparent *Unable to state the sequence of number names to 20.* **1. Rote counting** *Rote counts the number sequence to at least 20, but is unable to reliably count a collection of that size.* **2. Counting collections** *Confidently counts a collection of around 20 objects.*	Working in CSF II Level 1
3. Counting by 1s (forward/backward, including variable starting points; before/after) *Counts forwards and backwards from various starting points between 1 and 100; knows numbers before and after a given number.* **4. Counting from 0 by 2s, 5s and 10s.** *Can count from 0 by 2s, 5s, and 10s to a given target.*	Working in CSF II Level 2
5. Counting from x (where x>0) **by 2s, 5s, and 10s** *Given a non-zero starting point, can count by 2s, 5s, and 10s to a given target.*	Working in CSF II Level 3
6. Extending and applying counting skills. *Can count from a non-zero starting point by any single digit number, and can apply counting skills in practical tasks.*	Working beyond CSF II Level 3



Sequence for Developing Place Value

Foundation

- Say the numbers 1 – 9 and the child matches it to a numeral card
- Match the numeral 1 – 9 to the concrete quantity
- Make the numbers 1 – 9 using concrete materials
- Say the numbers 0 – 9 and the child matches it to a numeral card
- Match the numeral 0 – 9 to the concrete quantity
- Make the numbers 0 – 9 using concrete materials
- Shown a number card 0 – 9 students say the number
- Record the symbols 0 – 9 to match a quantity
- Compare 2 single digit numbers, which is larger which is smaller, more or less
- Order number cards 0 – 9
- Order a group of single digit numbers eg: 4, 7, 9
- Use this order to point to the first and second number
- Understand 10 as a unit e.g.: 10 ones is 1 ten
- Makes the teen numbers relating them to 1 ten and ? ones

Year 1

- Make the numbers in the 40s, 60s, 70s, 80s and 90s
- Name the numbers in the 40s, 60s, 70s, 80s and 90s
- Record the numbers in the 40s, 60s, 70s, 80s and 90s
- Make the numbers in the 20s, 30s and 50s
- Name the numbers in the 20s, 30s and 50s
- Record the numbers in the 20s, 30s and 50s
- Make the numbers from 11 to 19
- Name the numbers from 11 to 19
- Record the numbers from 11 to 19
- Order a group of numbers between 0 and 100
- Say the number 1 more and 1 less with numbers up to 100
- Say the number 10 more or 10 less with numbers up to 100
- Place a range of numbers from 0 to 100 on a number line
- Rename numbers from 0 to 100 e.g.: 26 is 2 tens and 6 ones or 26 ones
- Understand that 10 tens is 1 hundred

Year 2

- Make name and record regular numbers e.g.: 692
- Make name and record irregular numbers e.g. 715 (common misunderstand 751)
- Make name and record numbers with internal zeroes e.g.: 308
- Understand that 10 hundreds is 1 000
- Compare 2 given numbers to 1 000
- Compare 2 given numbers to 1 000 including those with internal zeroes
- Order the numbers to 1,000
- Order the numbers to 1,000 including those with internal zeroes
- Place numbers on a numberline
- Say the number 1 more and 1 less with numbers up to 1 000
- Say the number 10 more or 10 less with numbers with no trading up to 1 000 e.g. 256
- Say the number 10 more or 10 less with numbers with renaming up to 1 000 e.g. 496, less 803

Growth points in counting

Moving towards growth point 1

- unable to state the sequence of number names to 20

1. counting small collections
2. using dot cards for subitising
3. rote counting

Place a counter on each dot on a card

Put dot cards in order

Match dot cards with numeral cards

Students clip pegs on numeral cards to match the numeral

Growth points in counting

Moving towards growth point 2

• rote counts the number sequence to at least 20, but is unable to reliably count a collection of that size

1. conservation activities
2. one-to-one correspondence
3. counting larger collections

Give each child 6 counters, play match my counters, this is good for part/part whole

Ask students to roll a dot dice take that many counters, ie match each dot with a counter

Growth points in counting

The Big Match

Moving towards growth points 3 and 4

- confidently counts a collection of around 20
- counts forwards and backwards from various starting points between 1 and 100; knows numbers before and after a given number

Choose a number from a bag of numbers, what is the number before, what is the number after this number

Roll a dice what is the number before, the number after

Number line activity, roll dice, place that many counters on number line. What number am I now at?

Students draw their own number line

Growth points in counting

Moving towards growth point 5 and 6

- Given a non-zero starting point, can count by 2s, 5s, and 10s to a given target
- Can count from a non-zero starting point by any single digit number, and can apply counting skills in practical tasks.

Students can count on from different starting points, roll 3 or 4 dice, eg 3, 4, and a 5 Use the first two dice as the starting point 34 and the third dice is what they count by eg 5. Or roll a 3, 4, 5, and 3 start a 345 count by 3s

Make a number line. Students are given 10 random 3 digit numbers. They sort them into order to make a number line. They leave enough space between each pair of numbers for them to write one number between each pair.

Concepts: join, combine, take-away, missing addend, and difference

Counting strategies: make-all/count-all, cover and count on

Mental strategies: count on from larger (1, 2 and 3 only), doubles and near doubles, make-to-ten, think of addition …

Initial recording: vertical to support place-value and avoid premature use of '=' sign …

Mental computation: open number lines …

Formal recording: 2 digits and beyond, decimals and fractions (extended recording)

INITIAL RECORDING:

Record vertically to support place-value and commutativity and to eliminate difficulties with the equal sign

For example,

$$\begin{array}{r} 2 \\ \text{and } 3 \\ \hline 5 \end{array} \longrightarrow \begin{array}{r} 2 \\ +\ 3 \\ \hline 5 \end{array} \qquad \begin{array}{r} 19 \\ -\ 8 \\ \hline 11 \end{array} \qquad \begin{array}{r} 16 \\ -\ 9 \\ \hline 7 \end{array}$$

INTRODUCE THE EQUAL SIGN:

via well-known equivalences such as:

5+ 4 = 6 + 3

There are two numbers on the right.

SEQUENCE FOR TEACHING ALGORITHMS FROM PREPS TO GRADE 6

- there is a developmental sequence for teaching all four processes, addition, subtraction, multiplication and division.
- It is important to have consistency in approach as well as consistency in language used
- So ask your child's teacher the method and language they use when teaching a process

COMPUTER GAMES

- At **Home** With Math nz maths
- Motion Math games
- Find Sums
- http://www.funbrain.com/match/index.html?wtlAC=fb_kids,link-fb

HOW CAN WE HELP?

As families, whenever we come together to share time, we can share mathematical experiences.

It's simple just try and demonstrate a positive attitude to maths at home,

HOW CAN WE HELP?

Wrong answers can be helpful. It is better for students to have a go rather than not try at all.

- Mental computation.

- Ask children to explain their strategy in solving a problem

How can we help?

- Be positive about your own math abilities. Try to avoid saying "I was never good at math" or "I never liked math".
- Encourage your child to be persistent if a problem seems difficult.

Make math part of your child's day.

- Point out to your child the many ways in which math is used in everyday activities.
- Encourage your child to tell or show you how he or she uses math in everyday life.

Make math part of your child's day.

Include your child in activities that involve

- math –shopping, measuring ingredients,
- counting out plates and utensils for dinner.

MAKE MATHS FUN

- Play games and do puzzles with your child that involve math.
  They may focus on direction or time, logic and reasoning, sorting, or estimating.
- Ask questions like “How long do you think it will take to drive to school?”
- Help your child with concepts like time, days of the week and money

REAL LIFE SITUATIONS

- In addition to math tools, such as a ruler and a calculator, use handy household objects, such as a measuring cup and containers of various shapes and sizes.

Ideas and tips

Try some of these suggestions to reinforce learning that has taken place at school:

Make the most of your child's out-of-school interests. Football fans, for example, can focus on predicting results and looking at league tables.

Game cards such as Uno, Trionimoes, dominoes are full of numbers and potential calculations.

Ideas and tips

Other games: Monopoly, chess, backgammon and darts.

These all use numbers. They all involve counting, calculation and scoring.

'Battleships' is a fun way to use graphs.

Noughts and crosses involves decision making .

CHANGES IN MATHS EDUCATION.

- Concrete materials, for example, dice, cards
- Students learn by discovery
- More problem solving
- Relate maths to real life situations
- More emphasis on mental maths
- Teach space and chance and data
- Changes in how we teach fractions and long division.

HELPING YOUR CHILD AT HOME WITH MATHS.

- Building on success is important
- Encourage children to work things out for themselves. People learn by linking new ideas to ideas that they already have
- Encourage children to discuss their work
- Children need *time to think* and *time to answer* questions
- *Work with your child's teacher!!!*

UNDERSTANDING HOW CHILDREN LEARN MATHEMATICS:

We now know a lot more about **how** children learn mathematics.

Meaningless rote-learning, mind-numbing drill and practice, and doing it one way - the teacher's way, is no longer acceptable!

Concepts need to be experienced, Strategies need to be supported in various ways until they are acquired; and EVERYTHING needs to be discussed.

LETTER TO MY CHILD.

I can teach you things,

but I cannot make you learn.

I can allow you freedom,

but I cannot be responsible for it.

I can offer you advice,

but I cannot decide for you.

I can teach you to share,

LETTER TO MY CHILD.

but I cannot make you unselfish.

I can advise you about the facts of life,

but I cannot build your reputation.

I can tell you about drinks and drugs,

but I cannot say "no" for you.

I can teach you about kindness

but I cannot make you gracious.

LETTER TO MY CHILD.

I can model values for you,

but I cannot make you moral.

I can teach you respect,

but I cannot make you honourable.

I can give you love,

but I cannot make you beautiful inside.

LETTER TO MY CHILD.

I gave you life,

but I cannot live it for you.

- A special thank you to Mary Parker from St Leonards, Cornish Campus who provided a lot ideas for this powerpoint

SUE FINE
PH. NUMBER 0438503048
SUE_FINE@HOTMAIL.COM

HOW CAN YOU HELP YOUR CHILD WITH MATHEMATICS?

- Talk about real life maths, e.g. house number, time, money.
- Play maths games
- Share how you use maths at your work

CHANGES IN MATHS TEACHING

- Mental maths
- Use of concrete aids
- Relate maths to real life
- Language and maths
- Working mathematically