

PARENT WORKSHOP

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Grades 1 - 6

Have you every stopped to think just 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 IS AUSVELS 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.



DEVELOPING ADDITION & SUBTRACTION:

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,

$$\begin{array}{r} 2 \\ \text{and } 3 \\ \hline 5 \end{array} \longrightarrow \begin{array}{r} 2 \\ + 3 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 19 \\ - 8 \\ \hline 11 \end{array}$$

$$\begin{array}{r} 16 \\ - 9 \\ \hline 7 \end{array}$$


INTRODUCE THE EQUAL SIGN:

via well-known equivalences such as:

$$5 + 4 = 6 + 3$$

There are two numbers on the right.




For example:

tens	ones
4	3
+ 5	2
9	5

Model
with
materials
(bundling
sticks and
MAB)

tens	ones
1	
4	8
+ 3	6
8	4



“3 ones and 2 ones is 5 ones

4 tens and 5 tens is 9 tens”

“8 ones and 6 ones is 14 ones, *regroup* or *rename* as 1 ten and 4 ones and record appropriately.

1 ten and 4 tens and 3 tens is 8 tens”

Sequence for Teaching Subtraction from Preps to Grade 6

Develop subtraction

– verbal stories, modeling, language of subtraction

Develop concept of subtraction as

– *take away*, eg I have 6 apples and I ate 2, how many have I got left?

- *missing addend*, eg I have 6 stamps and I sold some, I have 3 left, how many have I sold?

- *comparison*, eg I have 3 animals Robyn has 2 animals, how many more animals do I have?



SEQUENCE FOR TEACHING SUBTRACTION FROM PREPS TO GRADE 6

- **Develop strategies**, Count back, count down to, count up from
- **Basic subtraction facts**, Adding 10, tens facts, inverse to addition
- **Thinking in tens, hundreds etc.**
3tens – 7, 3hundreds – 7, etc



SEQUENCE FOR TEACHING SUBTRACTION FROM PREPS TO GRADE 6

- Use vertical recording and symbol

$$\begin{array}{r} 2 \text{ digits} \\ - \underline{2 \text{ digits}} \end{array} \qquad \begin{array}{r} 3 \text{ digits} \\ - \underline{2 \text{ digits}} \end{array} \quad \textit{no renaming}$$

- $\textit{renaming 1 ten as 10 ones}$
$$\begin{array}{r} 2 \text{ digits} \\ - \underline{2 \text{ digits}} \end{array}$$



SEQUENCE FOR TEACHING SUBTRACTION FROM PREPS TO GRADE 6

- 3 digits
- 3 digits

with renaming in 1's, 10's, and both.

1 ten as 10 ones

1 hundred as 10 tens



SEQUENCE FOR TEACHING SUBTRACTION FROM PREPS TO GRADE 6



3 digits



3 digits *with internal zero*



SEQUENCE FOR TEACHING SUBTRACTION FROM PREPS TO GRADE 6

- Subtraction with larger numbers
- Subtraction with decimals
- Subtraction with common fractions, like denominators / unlike denominators



SEQUENCE FOR TEACHING MULTIPLICATION FROM PREPS TO GRADE 6

Before learning tables students **MUST** be able to:

- skip count by 2 ,4 & 5
- count on
- can operate with numbers
- double
- group in tens
- model and solve simple multiplication and division problems



SEQUENCE FOR TEACHING MULTIPLICATION FROM PREPS TO GRADE 6

- Basic facts: develop understanding and then speed.
- X2, double,
- X10, 10 times bigger,
- X5, is half 10 times table



GRADE 3

- X3, double plus 1 more,
- X4, double, double,
- X9 X10 – 1 group



GRADE 4

- X6 double 3 times table,
- X7,
- X8



3. **Abstracting multiplication and division**

Solves multiplication and division problems where objects are not all modeled or perceived.

○ Find the pairs

Each player has a set of cards 1-10

Player A arranges the cards into 5 pairs and only gives the answers.

1 x 8 = 8 Player A says 8, 20, 18, 63, 20

2 x 10 = 20

3 x 6 = 18 Player B has to guess the equations

9 x 7 = 63

4 x 5 = 20 Reverse roles



4. **Basic, derived and intuitive strategies for multiplication**

Can solve a range of multiplication problems using strategies such as commutativity, skip counting and building up from known facts.



GREAT GAME TO TEACH TIMES TABLES

- Multiplication War

You need 4 sets of cards 1-5, or 1-9 for advanced players. Players divide the cards evenly between themselves. They turn over two cards each and multiply them. The player with the highest product wins all four cards.



5. **Basic, derived and intuitive strategies for division**

Can solve a range of division problems using strategies such as fact families and building up from known facts



Divide whole numbers and decimals by ones (to 2 decimal places):

$$8 \overline{)458}$$

Can I share 4 hundreds among 8? No.

Trade hundreds for tens

Can I share 45 tens among 8? Yes ...

How many left to share? 5 tens

Trade tens for ones

$$\begin{array}{r} 5 \\ 8 \overline{)458} \end{array}$$

Can I share 58 ones among 8? Yes ...

How many left to share? 2 ones

Rename as tenths

Can I share 20 tenths among 8? Yes ...

How many left to share? 4 tenths

Rename as hundredths

$$\begin{array}{r} 57.25 \\ 8 \overline{)458.00} \\ \quad 4 \\ \quad \quad \end{array}$$

Can I share 40 hundredths? Yes ...

How many left to share? None



Divide whole numbers and decimals by ones (to 2 decimal places):

$$8 \overline{)458}$$

Can I share 4 hundreds among 8? No.

Trade hundreds for tens

Can I share 45 tens among 8? Yes ...

How many left to share? 5 tens

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Can I share 58 ones among 8? Yes ...

How many left to share? 2 ones

Rename as tenths

Can I share 20 tenths among 8? Yes ...

How many left to share? 4 tenths

Rename as hundredths

Can I share 40 hundredths? Yes ...

How many left to share? None



$$\begin{array}{r} 57.25 \\ 8 \overline{)458.00} \\ \underline{40} \\ 58 \\ \underline{56} \\ 20 \\ \underline{16} \\ 40 \\ \underline{40} \\ 00 \end{array}$$

What tips can I use to help my child?

Be positive about maths!

- Let your child know that **everyone** can learn math.
- Let your child know that **you** think math is important and fun.
- Point out the ways in which different family members use math in their jobs.



- 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.



- Involve your child in planning a holiday or day out.
- Set a budget and get them to help calculate the cost of tickets and food.
- If the trip is to be abroad children can help with the conversion of currencies.



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!!!*



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.*



*I gave you life,
but I cannot live it for you.*



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