

## Appendix 1: Approaches to teaching Maths in St Louis SPS - updated Sept 2018

### Addition:

Tables: Addition tables are introduced in 1<sup>st</sup> class and children memorise them in 2<sup>nd</sup> class.

Tables are recited in the following way:

3 and /plus 1 is 4	<i>It is important that children understand and use the different terms for addition and that these are displayed in the classrooms.</i>
3 and /plus 2 is 5	
etc.	

### Computation:

When doing addition computation, children are taught to start at the top of the units column.

$$\begin{array}{r} \text{T} \text{ U} \\ 2 \ 9 \\ + 1 \ 5 \\ \hline 4 \ 4 \end{array} \quad 9 \text{ plus } 5 \text{ is } 14 \text{ (This is regrouped as 1 ten and 4 units)}$$

Children in the Senior Standards, should be able to start addition from the top or bottom. In addition, the children are encouraged to use other addition strategies as are outlined in the curriculum.

Special numbers strategy: looking for numbers that make 10, 100, doubles or near doubles.

Front-end strategy: The left-most digits (front-end) are the most significant in forming an initial estimate. This is most applicable to addition, especially useful when adding money and decimals.

### Subtraction

#### Tables:

Children learn the tables in the following way:

4 take/minus 1 is 3	<i>It is important that children understand and use the different terms for subtraction (subtract, from, minus etc. which should be displayed in the classrooms.)</i>
5 take/minus 1 is 4 etc.	

## Computation:

Subtraction is taught throughout the school by using the Decomposition Method. It has been agreed that subtraction will be taught starting at the top in all classes.

H	T	U	
3	12		
<del>4</del>	<del>3</del>	12	➤ 2 take 5, I cannot take. Go to the Tens column. There are 3 tens there. Take 1 ten and rename it as 10 units. I now have 2 tens and 12 units. 12 take 5 is 7.
-	1	3	➤ 2 tens take 3 tens, I cannot take. Go to the Hundreds column. There are 4 hundreds there. Take 1 hundred and rename it as 10 tens. I now have 3 hundreds and 12 tens. 12 take 3 is 9.
2	9	7	➤ 3 hundreds take 1 hundred is 2 hundreds.

The "Subtraction Poem" may also be useful in helping younger children with computation. This will be displayed in the Junior classrooms and in Resource Rooms:

*"More on top?  
No need to stop!  
More on the floor?  
Go next door ...  
And get 10 more!  
Numbers the same?  
Zero's the game!"*

## Multiplication

### Tables:

Multiplication tables are introduced towards the end of 2<sup>nd</sup> class, by counting in multiples.

The learning of multiplication tables begins in 3<sup>rd</sup>. The language used is

1 times/multiplied by 3 is 3	<i>It is important that children understand and use the different terms for multiplication and that these are displayed in the classrooms (middle and senior standards.)</i>
2 times/multiplied by 3 is 6	
etc.	

Teach tables as far as 10 times 2,3,4,.....

Counting in multiples and the use of the 3 reference points of 1, 5 and 10 have been suggested as means of helping children to memorise tables.

The commutative property will be emphasised.

Concrete materials, multiplication square, individual multiplication squares, interactive activities, knock out competitions, Buzz, clock etc. will be used to assist in memorisation of the tables.

### Computation:

Multiplication is introduced in 3<sup>rd</sup> as repeated addition. This concept is reinforced in 4<sup>th</sup>.

It has been agreed that multiplication will be taught starting at the bottom.

$$\begin{array}{r} 26 \\ \times 34 \\ \hline 104 \quad (26 \times 4) \\ + 780 \quad (26 \times 30) \\ \hline 884 \end{array}$$

*\*Remember to cross out the "2" when it's been added in.\**  
*\*Cross out the "1" when it's been added in.\**

### Division

#### Tables:

Division tables are introduced in 3<sup>rd</sup>, with the children saying the table. They are memorised in 4<sup>th</sup>.

2 divided by 2 is 1  
4 divided by 2 is 2  
etc.

*It is important that children understand and use the different terms for division, such as "into" and that these terms are displayed in the classrooms.*

The relationship between multiplication and division will also be emphasised, especially in the senior classes.

Example:  $4 \times 6 = 24$   
 $6 \times 4 = 24$   
 $24 \div 6 = 4$   
 $24 \div 4 = 6$   
 $\frac{1}{4}$  of 24 = 6  
 $\frac{1}{6}$  of 24 = 4

The children are introduced to division as repeated subtraction. They are exposed to the different ways of writing division:  $\div$ ,  $\overline{)$  and fraction.

### Long division:

This is taught in 5<sup>th</sup> and 6<sup>th</sup>. The following steps are taught:

? Estimate - rounding strategy is very important here.

X Multiply

\_ Subtract

↓ Bring down the next digit.

*Age appropriate charts of the different operations are displayed in each classroom.*

### Problem Solving:

It has been agreed that the children will be exposed to problem solving each week.

According to the curriculum, mathematical problems include the following:

- Word problems
- Practical tasks
- Open-ended investigations
- Puzzles
- Games
- Mathematical trails

The importance of understanding mathematical language is recognised and each teacher has a copy of "The Language of Maths" which outlines the mathematical terms appropriate to each class. All children must experience some success at problem solving.


Various problem-solving strategies, in keeping with the curriculum, are taught:

- Constructing a model
- Drawing a diagram

- Making a chart or table of the information
- Looking for patterns in a problem
- Making a guess and testing it out
- Recognising that there may be more than one step to a problem and solving each step
- Writing a mathematical sentence for the problem
- Using appropriate equipment to solve the problem for example measuring instruments, calculator
- Solving a simpler version of the problem, for example, by using smaller numbers (books such as Brain Teasers, Maths Challenge are very helpful in this regard)

# Subtraction Poem

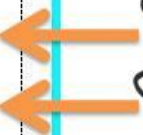
**More on top?  
No need to stop!**


$$\begin{array}{r} 89 \\ - 8 \\ \hline 81 \end{array}$$

**More on the floor?  
Go next door...  
And get 10 more!**


$$\begin{array}{r} 7 \ 11 \\ \cancel{8}1 \\ - 8 \\ \hline 73 \end{array}$$

**Numbers the same?  
Zero's the game!**


$$\begin{array}{r} 89 \\ - 9 \\ \hline 80 \end{array}$$