

Saxilby Church of England Primary School

Early Number Workshop



New Curriculum

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

The journey for any
number concept.

Enactive

Iconic

Symbolic











Enactive

- Counters
- Numicon
- Beads
- Cars
- Base 10
- Cubes



Iconic

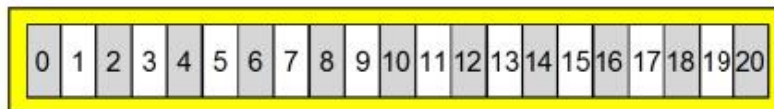
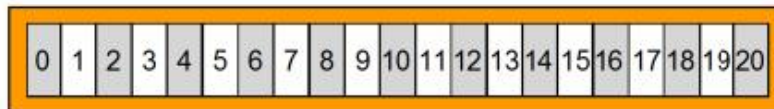
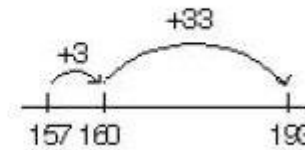
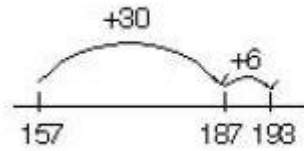
- Pictures
- No practical equipment
- Motivated numbers

1	2	3	4	5	6	7	8	9	10
one	two	three	four	five	six	seven	eight	nine	ten
									

Symbolic

$$\begin{array}{r} \text{TU} \\ 56 \\ + 67 \\ \hline 3 \\ \hline 1 \end{array}$$

$$\begin{array}{r} \text{HTU} \\ 56 \\ + 67 \\ \hline 123 \\ \hline 1 \end{array}$$



Importance of Counting

- Counting is the most important part of mathematics
- If you can't count, you will never calculate.
- Children can only calculate with numbers they can count to.

How many stages of counting is there before you are secure?



Counting skills

Skill One - String Level	Skill Two - Unbreakable List Level	Skill Three - Breakable Chain level	Skill Four - Bi-directional Chain
A continuous sound string	Separate words but the sequence can't be broken and always starts from 1.	Can start to count from any point.	Numbers can be said in either direction (forwards and backwards) and start at any point.

Considerations when supporting children counting:

- Children may be using different skills for different sets of numbers at any one time.
e.g: a child may be demonstrating breakable level for all numbers to 10 but only be at string level for numbers 11-20.
- This is important to consider for counting activities and when supporting progress in counting with conceptual understanding.



Counting contexts

Context	Description
<u>Sequence Context</u>	<p>These are activities where the children learn the numbers by rote. E.g. 1-10.</p> <p>They then learn to cross the decades.</p> <p>NB: Be aware that 11-19 does not follow the oral/written pattern of the number system. E.g. 14 written is 1 then 4 but spoken orally the four is said first. This can cause confusion for children within this context.</p>
<u>Counting Context</u>	<p>These are activities where number words are applied to objects. Children will often point or nod etc.</p> <p>One to one correspondence begins to develop in this context.</p>
<u>Cardinal Context</u>	<p>This is where sequence and counting contexts are combined.</p> <p>These are activities where the children learn that the number word describes the set of objects. E.g. 2 hands, 10 toes etc</p> <p>This is closely linked to conservation of number –not having to recount a set after just counting it when asked ‘so how many’</p>
<u>Measure Context</u>	<p>These are activities where children learn what the appropriate units are. Research shows that young children have great difficulty in making sense of the measure context.</p>
<u>Ordinal Context</u>	<p>These are activities where the number word describes the relative position of things. E.g. the first man on the moon, I came third etc.</p>
<u>Non-Numerical Context</u>	<p>These are activities where the children use number words to identify codes. Children need to understand that sometimes there isn’t a pattern to the numbers. e.g phone numbers, registration plates and combination locks.</p>



Children counting in school

Please take a list of counting games children will be accessing at school. They are quick and easy and you can do them on the go.



Addition

Counting all

Counting on from the first number

Counting on from the larger number

Using a known addition fact

Using a known fact to derive a new fact

Using knowledge of place value

Subtraction

Count out-take away

Count back from

Count back to

Count up

Use known subtraction fact

Use derived fact

Use knowledge of place value