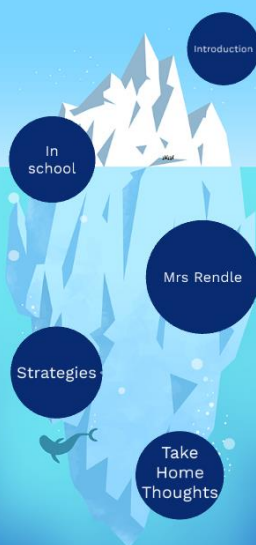


# Numeracy Family Learning



Workshop 3  
6th March 2019



## Maths and Numeracy

In school this curricular area is sectioned into two components.

We have Maths and we have Numeracy.

- **Maths** is where we teach things like shape, data handling, time, weight and length.
- **Numeracy** is everything number related like place value, multiplication/division and addition/subtraction.
- We also have **problem solving** and **mental maths**.

Timeline

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Our Old Curriculum 5-14 and before Curriculum for Excellence

Before CfE the curriculum was known as 5-14. This curriculum taught maths with a **focus on textbook** work and progressing from one textbook to the other.

E.g. You would complete level C textbook then level D.

Press **Esc** to exit full screen

## When Curriculum for Excellence was introduced

When CfE was introduced there was a huge emphasis placed upon **experiential learning** and this was when we began to **take a more hands on and active learning approach** in Maths and Numeracy.

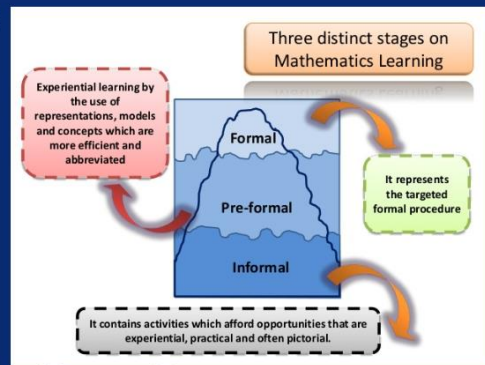
Children were then provided with opportunities to experience maths rather than complete sums and question papers.

## Recent Developments in Maths and Numeracy Learning

Nowadays, there has been a lot of studies completed around the breaking down of Maths concepts and we have introduced approaches like **SEAL MATHS** (Stages of Early Arithmetic Learning) into our schools to ensure children have progression within the skill they are being taught.

Alongside this we have begun to develop a **Concrete, Pictorial and Abstract** framework for teaching Numeracy and Maths to allow the children more personalisation over the strategies they choose to solve a problem. This also encourages them to develop a deeper understanding about mathematical concepts as they represent them in many different ways.

## Numeracy Iceberg



FORMAL

PRE-FORMAL

INFORMAL

## Early counting and Addition

A progression:

**Emergent** – unable to count a collection

**Perceptual** – unable to count a hidden collection

**Figurative counting** – can count hidden collections, but starts from 1

**Counting-on** – can count hidden collections by counting on from the initial collection

Advanced Counting

Jump and Split Strategy

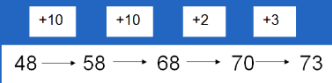
Strategy Video

**There are four advanced counting strategies**

- Counting-up-from(count-on)  
 $8 + 5 = [ \quad ]$
- Counting-up-to  $8 + [ \quad ] = 13$
- Counting-back-from  $13 - 5 = [ \quad ]$
- Counting-back-to  $13 - [ \quad ] = 8$

**48+25**

Jump:



Split:  $40 + 20 = 60$ ;  $8 + 5 = 13$ ;  
 $60 + 13 = 73$

All strategies involve

- jumping by ten.
- jumping through ten.

**Small activities to use at home  
when developing your child's  
number knowledge.**

- For everyone to see the full potential of the next 5 activities we will need some audience participation.
- Don't worry there **will not** be any FORMAL calculations just lots of fun and some counting aloud.

1

2

3

4

**Counting Pendulum**

This activity encourages children to count forwards and backwards in a rhythmic pattern. You can easily adapt this activity to make it simpler or more challenging.



### Bucket Count-On/Back

This activity is multi-sensory and you will need a metal bucket and some coins/counter to put into the bucket.

You will focus on counting on and back from large numbers. The clang of the bucket will signal to the children that more has been added and taken off.



### Where are you now?

This activity requires 100 square and counters  
(Please take one home with you tonight)

The aim here is to focus on the progression of the jump strategy. The children have the 100 square in front of them as a visual and move around the square in ones and tens.

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





## Mini Multo

This activity focuses on multiplication and is in the format of bingo.

By playing this game we are developing the children's automaticity of their multiplication facts.

The kids thoroughly enjoy a competitive game of bingo so why not get everyone involved.



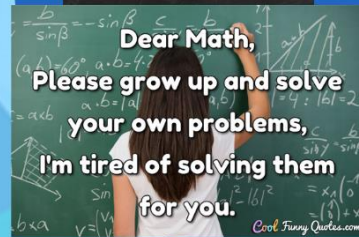
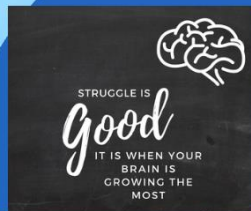
## Take Home Thoughts

- The skills of Maths and Numeracy are no longer developed through completing a page of formal algorithms correctly... **Get active and allow children to develop the BASIC SKILLS** before giving any formal calculations.
- Be mindful of children's **growth mindset** in a mathematical environment. Children will be questioning their problems and figuring things out in many ways. It is important that we continue to grow this to stop any maths anxiety developing.
- **Maths can be FUN!** There are lots of exciting ways to learn Numeracy and Maths through games, songs and rhymes. **Be Creative** with how you learn maths at home.

QUOTES



THANK YOU!



### Creating A Mathematical Culture

#### Have a growth mindset

Enjoy challenges, learn from mistakes, celebrate effort, control negative emotions

#### Use your whole brain

Explore creative ideas, work logically, check work

#### Be active to understand

Take steps to help you see a problem more clearly

#### Adapt to the situation

Use different strategies, make choices, try different ways

#### See the connections

Think about how different mathematical ideas and strategies can be linked.