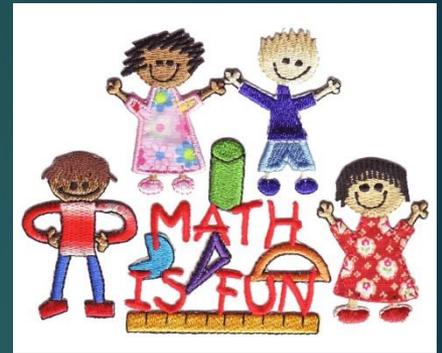




Maths in Reception

2019



‘YOUNG CHILDREN ARE SPLENDID LITTLE MATHEMATICIANS. THEY DEAL SPONTANEOUSLY AND SOMETIMES JOYFULLY WITH MATHEMATICAL IDEAS. THIS IS WHAT REAL MATHEMATICIANS DO.’

(GINSBURG, 2008, P. 55)

Early Learning Goals

There are two Early Learning Goals for maths. This is what most children in Reception are expected to be able to do by the end of their first year at school.

Number

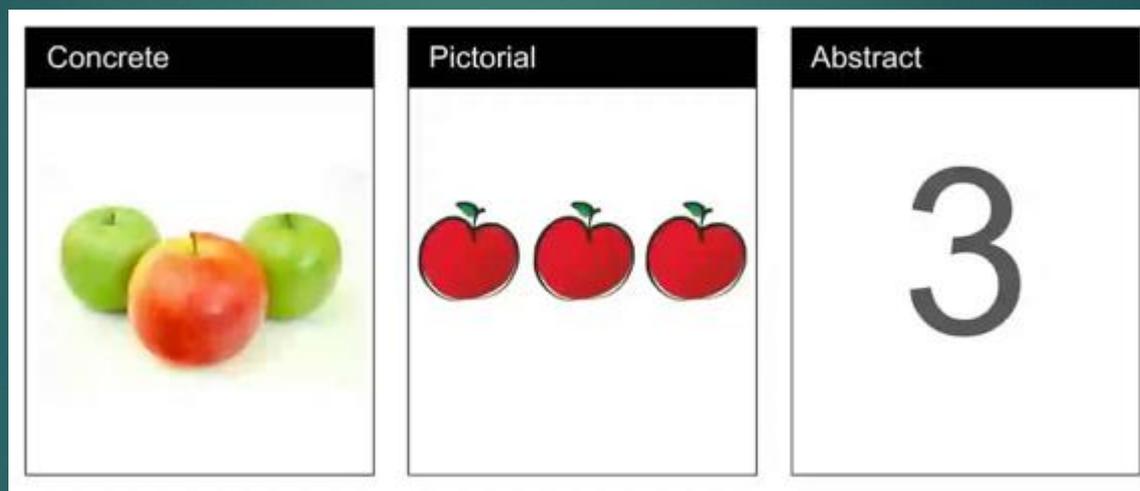
- count reliably with numbers from 1-20
- place the numbers 1-20 in order
- say which number is 1 more or 1 less than a given number from 1-20
- Using quantities and objects, add and subtract 2 single digit numbers and count on or back to find the answer
- solve problems including doubling, halving and sharing

Shape, Space & Measures

- use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems
- recognise, create and describe patterns
- explore characteristics of everyday objects and shapes and use mathematical language to describe them.

Teaching:

In order for the children to achieve the ELG by the end of Reception, we choose to teach by breaking down maths objectives into the smallest steps, so that every pupil is secure in every new concept before moving on. We focus upon teaching for fluency, reasoning and problem solving.



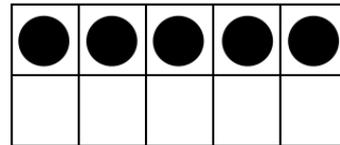
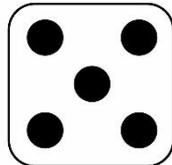
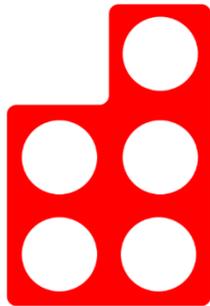
Children (and adults!) can find maths difficult because it is abstract. The CPA approach builds on children's existing knowledge by introducing abstract concepts in a concrete and tangible way. It involves moving from concrete materials, to pictorial representations, to abstract symbols in order to solve problems.

Fluency

In Reception, we aim to teach so that children have a deep understanding of number.

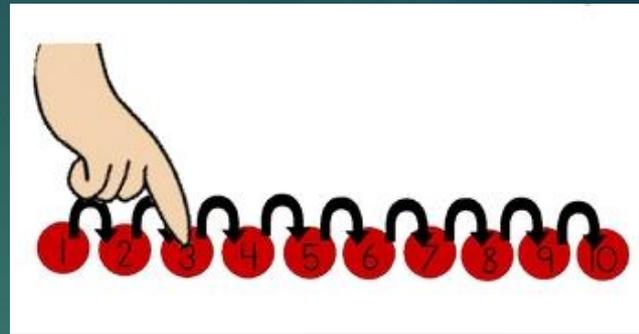
Representing Numbers

We want to develop children's number sense so that they understand that numbers can be represented in many ways, not just as a written numeral. We use many different objects and pictures to show that numbers can be represented in lots of ways.



Fluency

Counting



When counting, children need to understand...

- That we need to say one number for each object counted (touch counting). Often children count objects more than once or miss an object. We encourage them to line up objects and touch each one as they count saying one number name per object.
- The final number we say is how many there are altogether. Some children continue to count after they have reached the final object as they are not connecting the numbers they are saying to the objects in front of them.
- That anything can be counted including things that cannot be touched (sounds, movements).
- That we can count objects in any order and the total stays the same.

Fluency

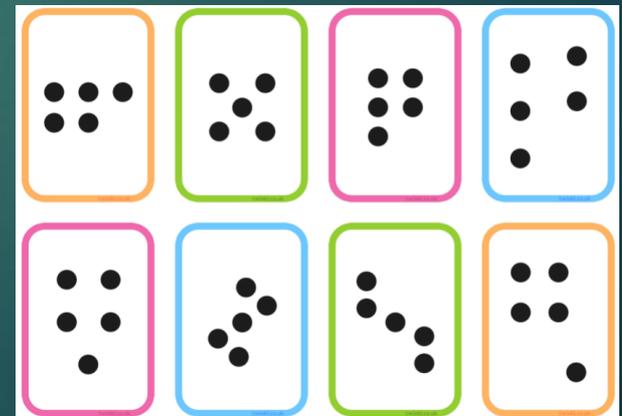
Recognising amounts - subitising

Another skill that is very important is recognising small amounts without the need to count them. This is called 'subitising.'

It helps children to build visual images for numbers, which in turn helps them to learn number facts. It is an essential skill when children begin to add and subtract. Using dice is a good way to practise this skill before moving on to other arrangements.

Here is a useful link to explain maths in Early Years...

https://www.youtube.com/watch?v=v_USTUE7AMk



Reasoning and Problem Solving

Reasoning

Reasoning in maths helps children to be able to explain their thinking, therefore making it easier for them to understand what is happening in the maths they are doing. It helps them to think about how to solve a problem, explain how they solved it and to think about what they could do differently.

Some examples of reasoning in Reception are:

- true and false statements eg adding one to a number always makes it smaller
- spotting incorrect maths e.g. 1, 2, 3, 4, 6, 5, 7, 8, 9, 10 • explaining how we know something or how we worked it out

Reasoning and Problem Solving

Problem Solving

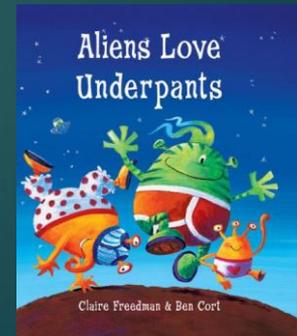
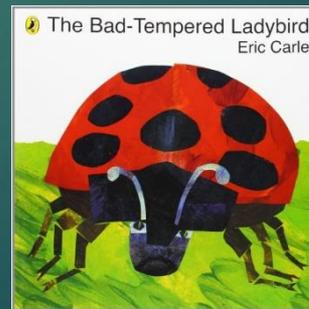
Problem solving allows children to use their maths skills in lots of contexts and in situations that are new to them. It allows them to seek solutions, spot patterns and think about the best way to do things rather than blindly following maths procedures.

In Reception, problem solving might include:

- spotting, following and creating patterns
- estimating amounts of objects
- sharing objects between different groups – particularly when the amount of groups change and the amount of objects stays the same
- finding different ways to partition numbers e.g. 5 could be $5+0$, $4+1$, $3+2$ etc

How can you help at home?

- Out and about: What numbers can you see? Who can see a 7? How many lampposts on the way to school? Counting items into a shopping basket. Finding and counting coins.
- In the house: Counting in 2s when pairing socks, can you count out 4 forks for the table? How many more do we need? Helping to measure and count cooking ingredients, count the stairs, count money into a money box
- Games: Snakes and Ladders (anything involving dice!) Bingo, Hopscotch
- Singing: Number rhymes and songs
- Draw attention to more and less
- Read books with numbers



It is ok to make mistakes...

Making mistakes is part of learning... don't tell them they're wrong – let them make the mistake then help them see what went right and where it went wrong. Normalise mistake making by doing it yourself!

We use puppets to deliberately make mistakes, so the children can correct us. Being an expert and explaining how something is done builds confidence and embeds learning.

Websites with relevant maths games:

<http://www.topmarks.co.uk/Search.aspx?Subject=37>

<http://www.crickweb.co.uk/Early-Years.html>

http://www.familylearning.org.uk/counting_games.html

<http://mathszone.co.uk/count-and-understand/>

Remember to try them first yourself and be safe on the web.

Number Blocks

We will be introducing the children to early number work through the use of Numberblocks.

Each episode is used as a launch pad to bring numbers and ideas to life in the world around them.

The snappy animation and loveable characters combine with engaging storylines to gently introduce concepts of number to support early mathematical understanding.

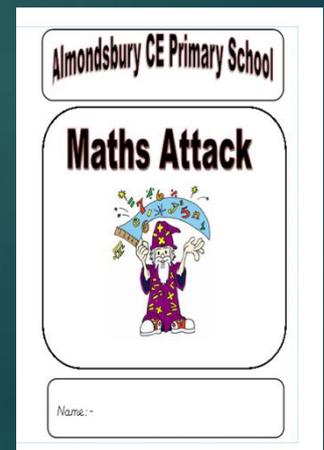


Maths Attack

At Almondsbury Primary School we use a whole school maths scheme called 'Maths Attack'. The scheme is primarily aimed at supporting children's mental recall and calculation of times tables and number facts.

The children progress through this scheme and receive certificates at certain milestones.

It begins in Reception with 'Mini Maths Attack', once they have completed this they will move onto the main whole school scheme in year 1.



Mini Maths Attack

Name	
 <u>Mini Maths Attack</u> 	
a. Recognise numbers 0-5	<input type="checkbox"/>
b. Order numbers 0-5	<input type="checkbox"/>
c. Recognise numbers 0-10	<input type="checkbox"/>
d. Order numbers 0-10	<input type="checkbox"/>
e. Write numbers 0-5	<input type="checkbox"/>
f. Write numbers 0-10	<input type="checkbox"/>
g. Recognise numbers 0-20	<input type="checkbox"/>
h. Order numbers 0-20	<input type="checkbox"/>
 I am a Maths Wizard	

Children will progress through this scheme during Reception and receive a certificate for each level they pass.

Once they have completed all 8 levels they will receive their Mini Maths Attack Certificate in assembly.

Moving on to Maths Attack...

Level 1 – Writing numbers 0-20

We will be working on Level 1 in preparation for Year 1.

In Year 1, once they have reached Level 2 and beyond, the children will have a weekly Maths Attack session where they complete a test in 3 minutes. In order to move on they must gain 100% in this test.

This is to ensure that they have consolidated their knowledge before moving on. It also supports the National Curriculum objectives for Mathematics.

Workshop Activities

- Numicon
- Flashcards
- Dominoes
- Tap a Shape/ Magnet shapes
- Number Games
- Number/ Shape Puzzles
- Pairs
- Representing numbers
- Measuring





Thank you for coming

Any questions?