'Power Maths'

Maths is an adventure for children (and adults) to be immersed in, get creative with, make mistakes, and conquer!

Power Maths is a whole-class mastery programme designed to spark curiosity and excitement and help you nurture confidence in maths.

Power Maths is our new, exciting scheme which is used in KS1 and KS2. It is a whole class approach which aims to make learning fun and create connections between concepts, allowing children to explore their learning and master new ideas with a deep understanding.

- **A world-class and unique mastery teaching model** created by leading educational experts from the UK and China.
- An exciting growth mindset and problem solving approach helps **spark a curiosity and excitement for maths** and equips children with deeper understanding.
- Developed alongside a group of teachers to ensure Power Maths **meets all the specific needs of children in the UK.**
- The Power Maths resources have been judged as fully delivering a mastery approach and placed on the UK Department for Education's list of recommended textbooks.

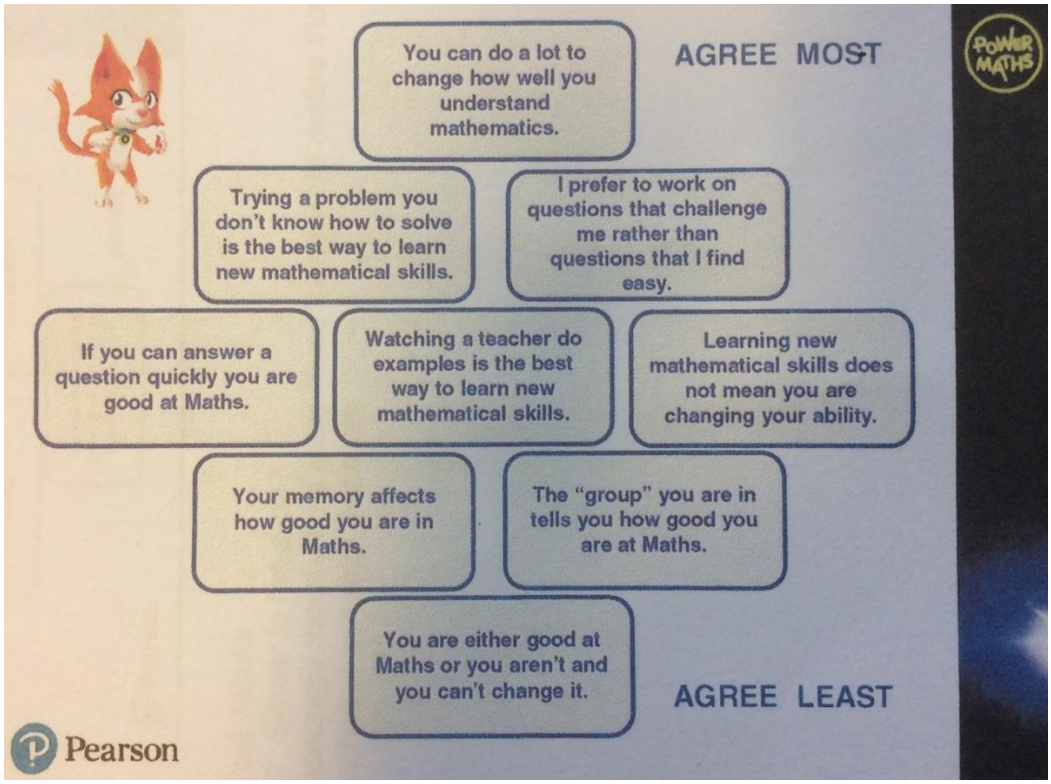
Power Maths introduction film clip:
https://www.youtube.com/watch?v=z4jiZj28C48

Introducing Tony Staneff and the team behind Power Maths
https://www.youtube.com/watch?v=T2_03EZOP-k

The thinking behind Power Maths…

Growth mindset:

This describes the underlying beliefs people have about learning and intelligence, which are discussed, identified and used to support learning. The 'diamond nine' statements of growth mindset…



At the heart of this programme is the idea that all children can achieve and be successful Mathematicians with the right growth mindset. It promotes five child friendly characters, each with their own positive skillset, to inspire and motivate children. These characters are:

The Power Maths characters help us to understand new methods and can be found in every year group's text books. Each character has a specific skill or personality that can help us when learning maths.

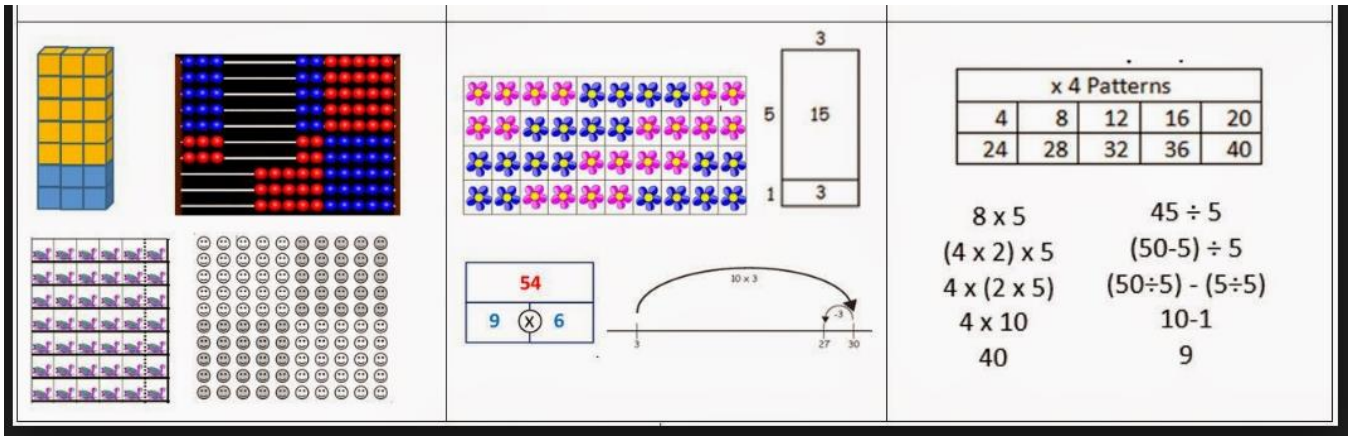
CPA:

To be successful in Maths, we recognise that pupils need to develop their conceptual understanding. In other words, pupils don't only need to be able to recall facts quickly, they also need to be able to apply their knowledge in a range of different contexts, including those that are new and unfamiliar. In order to develop conceptual understanding in our pupils, this year we are implementing the CPA approach to learning (concrete, pictorial and abstract). This approach recognises that in order for pupils to understand abstract concepts, they must first learn mathematical concepts through the use of concrete resources and pictorial representation.

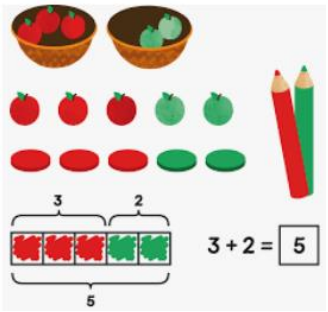
Concrete is the 'doing' stage, using concrete objects to solve problems. It brings concepts to life by allowing children to handle physical objects themselves.

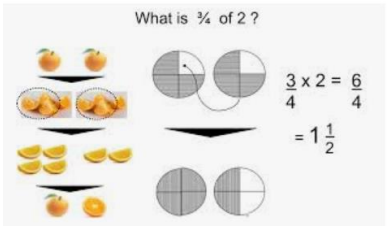
Pictorial is the 'seeing' stage, using representations of the objects involved in maths problems. This stage encourages children to make a mental connection between the physical object and abstract levels of understanding, by drawing or looking at pictures, circles, diagrams or models which represent the objects in the problem.

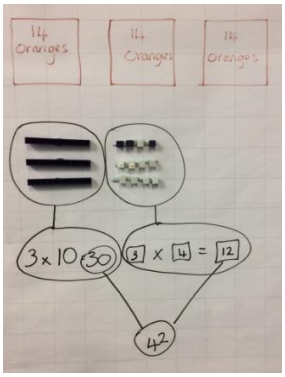
Abstract is the 'symbolic' stage, where children are able to use abstract symbols to model and solve maths problems.

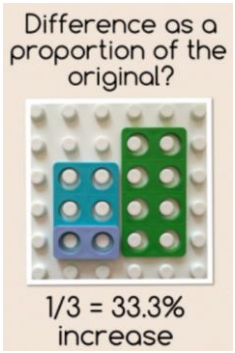


CPA in action through KS1 and KS2...









Every lesson is divided into sections that involve plenty of discovery, sharing, collaboration, practice and reflection. Children are encouraged to solve problems each day through the use of concrete resources, pictorial representations and abstract thinking.

We strive for our children to be successful and proficient mathematicians. Maths is a life skill – we use it all the time for example when we are baking, when shopping, whilst driving and when solving problems. We use maths when we are drawing, when building, whilst waiting for the bus and when going on holiday.
We even use maths when we don't even realise it!

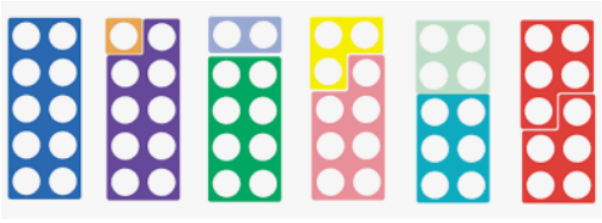
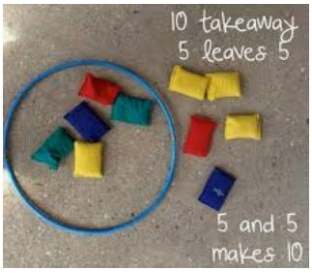
Glossary of vocabulary:

Mastery – comprehensive knowledge or skill in a particular subject or activity.

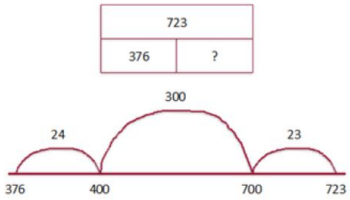
Growth mindset – In a growth mindset, people believe that their most basic abilities can be developed through dedication and hard work—brains and talent are just the starting point (see the diamond nine statements).

CPA- Concrete, pictorial and abstract representations for Maths learning.

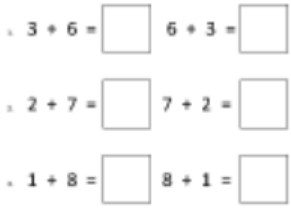
Concrete – Use of actual, concrete objects for the 'doing' stage of problem solving.

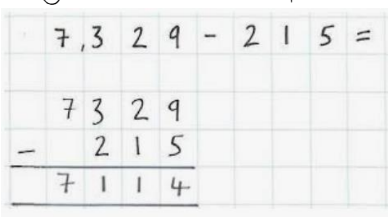




Pictorial – Use of images to represent objects for the 'seeing' stage of problem solving.

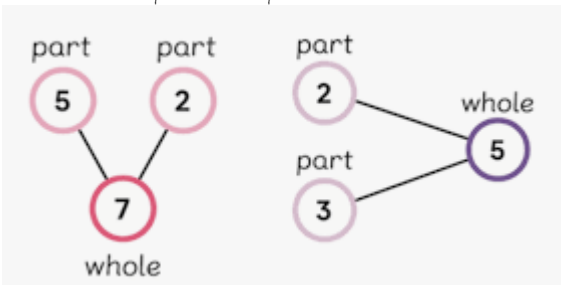


Abstract – The symbolic stage using digits and symbols to solve problems.

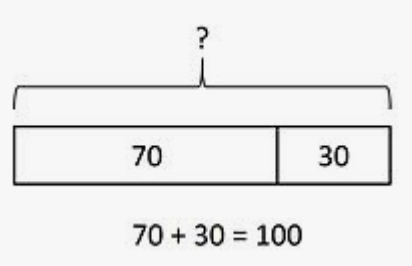


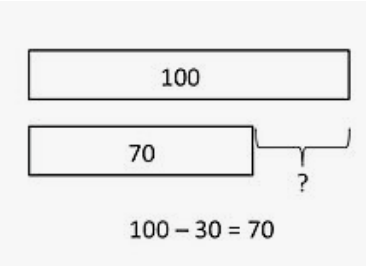


Part whole model – Refers to how numbers can be split into parts, so seeing the relationship between a number and its component parts.



Bar model – Visual representation of a number using boxes. Used in pictorial approach to solving addition and subtraction problems.





Manipulatives – An object designed so that a learner can perceive some mathematical concept by manipulating it, hence its name. Providing a way for children to learn concepts through hands-on experiences. For example numicon, coins, cubes, counters, clocks, dice, shapes, scales and measuring equipment.