



Craigdhu Primary School



Numeracy and Mathematics



Numeracy and Mathematics at Craighdu

At Craighdu Primary, our approach to the teaching of numeracy and maths is structured using a spiral learning method, where concepts are introduced and then revisited in different units, helping children to build on their knowledge over time. We fully embed the Concrete, Pictorial, Abstract (CPA) approach, ensuring that all learning begins with hands-on, practical activities before moving to more abstract concepts.

The Concrete, Pictorial, Abstract Approach

Concrete is the 'doing' stage. Learners use concrete objects to model problems. E.g. if the problem involves having 3 apples and then buying 2 more, ideally learners would initially use real or plastic apples to model this. Then, once they are comfortable, they can move on to using other concrete materials such as cubes, counters or Numicon to represent the objects in the problem. This brings concepts to life and creates relevance by allowing learners to experience and handle physical or concrete objects. Ideally, every abstract concept should first be introduced using physical, interactive, concrete materials.



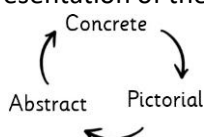
Pictorial is the 'seeing' stage. Here, visual representations of concrete objects are used to model problems. This could be drawings of the apples, dots that represent the apples, or a bar model split into sections that represent the 3 and 2 apples. This stage encourages children to make a mental connection between the physical object they previously handled and the more abstract pictures, diagrams or models that represent the objects from the problem. Asking learners to build or draw a model makes it easier for them to grasp more abstract concepts. Simply put, a picture helps them to visualise abstract problems and make them more accessible.



Abstract is the symbolic stage, where learners use abstract symbols to model problems, e.g. $3 + 2 = 5$. Learners cannot progress to this stage until they have demonstrated that they have a solid understanding of the concrete and pictorial stages. This is where concepts are introduced at a symbolic level, using only numbers, notation and mathematical symbols.

$$3 + 2 = 5$$

Although the concrete, pictorial, abstract approach can be thought of as 3 distinct stages, this is actually a more realistic representation of the approach:



Learners will go back and forth between each stage, revisiting each to reinforce and extend mathematical concepts. Therefore, learners will be using concrete materials and pictorial representations right throughout their time at primary school.

How can you support your child at home?

Maths is all around us, learning doesn't just take place in the classroom, it can happen anywhere. A child's everyday routine offers many opportunities to practise and apply their numeracy skills in a real and meaningful way. Some examples are listed below:

Addition and Subtraction

- Play games which need the use of dice and/or calculating scores e.g. snakes and ladders, card games, darts etc.

Multiplication and Division

- When following a recipe, encourage your child to explain how they would work out the quantities of the recipe for more or less people. E.g. this recipe is for 8 cupcakes how would I work out the ingredients needed to make 4?

Time

- Ask your child what time it is, using both digital and analogue clocks.
- Encourage your child to read a bus or train timetable to plan a journey.
- Talk about their daily routine and how long activities will last, or how long until the next one starts e.g. swimming starts at 5pm, what time will we need to leave the house at to be on time?
- Set a timer to develop the understanding of the context of time e.g. set a 30 minute timer to signify the end of a task, for example a 2 minute timer to brush their teeth.

Money

- Budgeting- use online supermarket to plan meals for the week using a set budget
- Use pocket money or gifts of money to purchase a toy or treat. Calculate the total cost of items being purchased and work out the change.
- Research the best deals when planning a purchase

Useful Websites

- Sumdog- https://www.sumdog.com/user/sign_in

All pupils have a login to Sumdog, this is a useful website as it tailors questions to support and challenge at an appropriate level.

- Topmarks- <https://www.topmarks.co.uk/maths-games>

- **MathsBot-** <https://mathsbot.com/>
- **BBC Bitesize-** <https://www.bbc.co.uk/bitesize/subjects/z6vg9j6>
- **Doorway online-** <https://www.doorwayonline.org.uk/number/>
- **Maths zone-** <https://mathszone.co.uk/>
- **Maths frame -** <https://mathsframe.co.uk/>
- **Maths Games -** <https://maths-games.org/>

Video explanations

There are a number of videos available on the school website and seesaw demonstrating written and practical approaches to support your child. These can be found at <https://www.craigdhu.e-dunbarton.sch.uk/parents-info/supporting-learning-at-craigdhu/>

Maths Dictionary We have created a maths dictionary to define commonly used terms in maths and numeracy. This can be found on seesaw and on the school website at <https://www.craigdhu.e-dunbarton.sch.uk/parents-info/supporting-learning-at-craigdhu/>