

The Devonshire Hill Nursery and Primary School

Mathematics Teaching and Learning

Key Stage 1



Children in Years 1 and 2 will be given a really solid foundation in the basic building blocks of mental and written arithmetic. Through being taught place value, they will develop an understanding of how numbers work, so that they are confident in 2-digit numbers and beginning to read and say numbers above 100.

A focus on number bonds, first via practical hands-on experiences and subsequently using memorisation techniques, enables a good grounding in these crucial facts, and ensures that all children leave Y2 knowing the pairs of numbers which make all the numbers up to 20 at least. They will also have experienced and been taught pairs to 20. Their knowledge of number facts enables them to add several single-digit numbers, and to add/subtract a single digit number to/from a 2-digit number.

Another important conceptual tool is their ability to add/subtract 1 or 10, and to understand which digit changes and why. This understanding is extended to enable children to add and subtract multiples of ten to and from any 2-digit number. The most important application of this knowledge is their ability to add or subtract any pair of 2-digit numbers by counting on or back in tens and ones. Children will extend this to adding by partitioning numbers into tens and ones.

Children will be taught to count in 2s, 3s, 5s and 10s, and will have related this skill to repeated addition. They will associate this with the 2x, 3x, 5x and 10x tables. Engaging in a practical way with the concept of repeated addition and the use of arrays enables children to develop a preliminary understanding of multiplication, and asking them to consider how many groups of a given number make a total will introduce them to the idea of division.

The children will also be taught to double and halve numbers, and will thus experience scaling up or down as a further aspect of multiplication and division. Fractions will be introduced as numbers and as operators, specifically in relation to halves, quarters and thirds.

Children have access to a wide range of practical resources such as Numicon, number squares and horizontal number lines to help them work out calculations and word problems independently.

## Mathematics Lesson

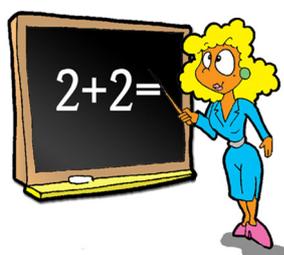
### In Year 2

- **Mental Arithmetic (15 mins) - Strategies are taught to ensure that children are secure in number facts.**
- **Main Teaching (1 hour)**

**Each lesson must start with a ‘hook’\*, question or an activity.**

**For example:** When teaching Array (bring in a large box of eggs/ chocolate and discuss how the eggs/ chocolate are arranged, what happens if I rotate the box? Assess whether children know or can use any of the key vocabulary i.e. do they know what row/ column is).

Discuss Learning Objective and explain key vocabulary, array, row, columns, sorting, arrangement, etc. (8 min)



**Group Practice** (10 min) – Children actively engaged in ‘doing’ Mathematics.

For example: Children practically exploring array, looking around the classroom, photos. Teacher to correct children’s misunderstanding and provide support.



**Regroup-** Discuss learning so far (5 min)

**Independent/ group activity-** Practising and applying their knowledge to solve problems e.g. use of array to solve problems (10 min)



**Mini Plenary-** (5 min): To review progress, clarify misunderstandings and move the work forward

**Independent/ group activity-** Practising and applying their knowledge to solve problems (10 min)



**Maths Talk / Plenary** (7 min) e.g. Question: Ask children to share: What is array? How can you make an array? Give us three things you found that is array? How and why is array useful?

- 1) Mini whiteboards and pens for writing key points from the lesson and holding up.
- 2) Show and Tell

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## Mathematics Lesson

### In Year 1:

- **Mental Arithmetic (15 mins) - Strategies are taught to ensure that children are secure in number facts.**
- **Main Teaching (45 mins)**

**Each lesson must start with a ‘hook’\*, question or an activity.**



**Mini Lesson or Hook** - e.g. Number - (Count out 0-9 of an item (unifix cubes, numicon) and ask what happens when we get to 10. Draw a picture to show or represent number. Model increasing the number of ones until you get to twenty. (8 min)



**Group Practice** (10 min) - Circulate to correct children’s misunderstandings and provide support.

**Regroup** - Discuss the learning (5 min)

**Mini Lesson** – Strategy or transition activity (5 min)

**Group Practice** (10 min)

**Mini Plenary** (5 min)



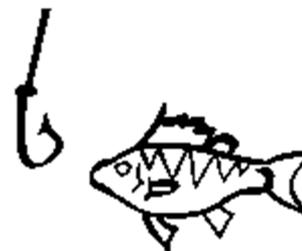
**Group Practice** (10 min)

**Maths Talk** (7 min) e.g. Ask children to share: What did they learn about numbers? What happens as numbers or amounts get larger? What was the easiest way for them to ‘see’ each number?

**A ‘hook’ is the opener, which grabs the children’s attention making them interested in the lesson to come.**

The Elements of a Strong Hook:

- \* Explains **what** students are about to learn.
- \* Explains **why** what they are about to learn is important.
- \* Connects **what** they are about to learn to what they already know
- \* Explains **how** the learning will take place
- \* **Captures** children’s interest.



Examples of hooks

**Brown Bag:** Place objects in a brown bag. Have children reach in and make observations about the contents of the bag (similarities, differences). This can also be used for children to pull out a strip of paper that gives them or their group a task to complete.

**Walk:** Using images or objects, children move from station to station making observations. The goal is for children to come to a conclusion about the objects/images that are related to a particular concept.

**Survey:** Survey the children by asking questions and having them step to a side or corner of the room that represents their response.

**Prediction:** Present a scenario and have children make a prediction (great for probability, statistics and data analysis).

**Song:** Play a song as the children enter the room. Leave it on during the mental maths session. Ask children how the song might be related to a given mathematics concept. Let them share their ideas before you explain your purpose for doing it.

**Experiment:** Conduct an experiment that illustrates a concept. For example, use water to fill 3D containers to illustrate volume or help children make a recipe using benchmark measurements.

**Vocabulary connections:** Give children a group of words related to the lesson...have them guess the topic or find the word that doesn't fit in the group.

**News:** Bring in a newspaper article or online news clip that addresses an area of interest or importance to your children.

Give children roles and have them act out a skit. Or, you can come in dressed for a given role. It can be as simple as wearing a sports jersey if you're writing algebraic equations on a person buying a £75 ticket and x number of hot dogs at a game.

Show a movie or TV clip, read an excerpt from a book, writing prompt ("Tell me about a time when..."), Riddles, Brain Teasers, scavenger hunt