

The Importance of Mathematical Vocabulary

Dear parents/carers,

Mathematical vocabulary is an important part of developing numerate children. This is recognised in the National Curriculum, both in its aims and its emphasis on spoken language.

Aims in learning mathematics (from the National Curriculum)

“Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas...Pupils should make rich connections across mathematical ideas to develop fluency.”

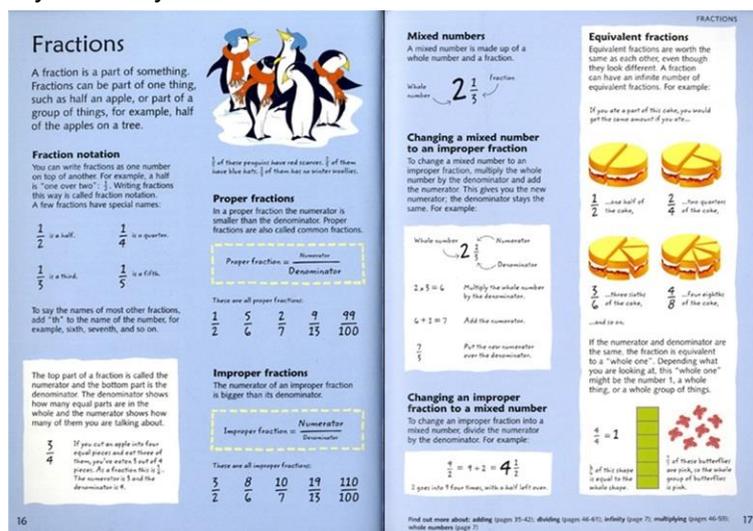
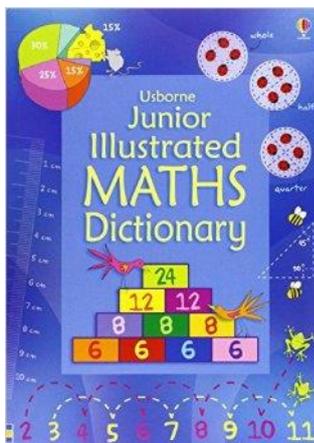
Spoken language (from the National Curriculum)

“The national curriculum for mathematics reflects the importance of spoken language in pupils’ development...The quality and variety of language that pupils hear and speak are key factors in developing their mathematical vocabulary and presenting a mathematical justification, argument or proof.”

Having children use as many different words as possible to describe a problem is a great way to practice this. Having a child say “seven times three” in as many ways as possible helps build a network of meaning. For example, “the product of seven and three is twenty-one,” “seven and three are factors of twenty-one,” “seven added three times is twenty-one,” “three added seven times is twenty-one.”

Maths dictionaries are also a great way to help children build their mathematical vocabulary and the pictures help children build a conceptual image of what they numbers actually mean in real life. The Usborne Illustrated Maths Dictionaries are a great series to use. The Usborne Junior Illustrated Maths Dictionary being appropriate for all children in Key Stage 2. There are also several other publishers who make mathematically accurate picture dictionaries for children.

Check your local public library as many of these books can be borrowed for free!



Fluency and Understanding of Number Facts

Fluency in number facts and conceptual understanding is also important for children to become proficient mathematicians. Below, we have selected a few online interactives to help children learn basic skills. The links are borrowed from the Canadian curriculum so please take time to look through all the options and select games and tools that relate to your child's maths targets communicated at parents' evening.

We recommend Notepad as a virtual space where children can manipulate shapes and symbols to explore different geometrical ideas.

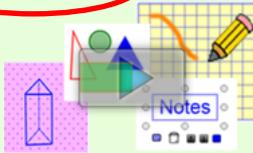
We recommend "Number Chart" to learn times tables. Children can work out a tables fact, then turn the card over to see if they are correct. Alternatively, they can find how many times a number should appear on the cards, e.g. "How many cards will have 24 on them?" to learn commutative facts as well as other factors.

"Number Chart" can also be used to help Year 1 and Year 2 children learn their addition facts within 10 or within 20.

We recommend "Partitioning Sets" for children in Year 1 and Year 2 to learn how a fraction represents equal divisions of a whole set.

Click here: <http://www.mathies.ca/learningTools.php> then scroll down.

Notepad



Write solutions, sketch diagrams, create graphs and record your mathematical thinking. Use one of four backgrounds: grid, isometric dot, lined or blank.

Videos:

Exploring the Basic Functionality (2:37)

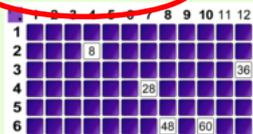
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Number Chart

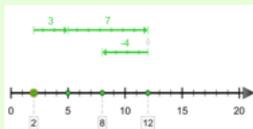


A virtual hundreds chart, multiplication table (up to 12 x 12), and addition table (up to 12+12).

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Number Line



Represent, compare, order and operate on whole numbers and integers using vectors, hops, magnitude bars, number ribbons or points on the number line. This dynamic tool makes it easy to zoom in, pan and switch between horizontal and vertical number lines.

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Partitioning Sets



Equal partitioning of a set. Explore questions like...

Is $\frac{1}{6}$ of 12 a whole number?

Can 10 objects be partitioned into 4 subsets of equal size?

Videos:

Using the Partitioning Sets by Number tool (3:53)

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These are further maths games for range of ages and topics. Click on a game and explore to learn how to play it. Some games have printable cards, some games are online interactive.

Click here: <http://www.mathies.ca/games.php>

The screenshot shows the 'mathies Games' website interface. At the top, there is a search bar and a navigation menu with links for Home, Games, Learning Tools, Activities, Additional Supports, Parents Home, and Contact Us. Below the navigation, there are sorting options: 'Sort by topic' and 'Sort by game name'. The main content area is titled 'Fractions' and lists three games:

- Card Games (Fractions)**: A matching game pairing combinations of pictorial and numerical representations of fractions. It includes two cards: Card 28 with the fraction $\frac{5}{7}$ and Card 13 with a question 'What fraction of the balls are baseballs?' and a pictorial representation of balls. A 'Print' button is visible.
- Dominoes (Fractions)**: A tile-based game matching pictorial and numerical representations of fractions. It includes a domino with the fraction $\frac{1}{2}$ and a circular diagram divided into four quadrants, two of which are shaded red. A 'Print' button is visible.
- Drop Ball (Fractions)**: A game with a 'Play' button.

Thank you for your continued support in helping your children develop their mathematical fluency and reasoning skills,

The Cippenham Primary Maths Team