

Alderman Cogan's C E Primary Academy

Mathematics Vocabulary Policy



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WHY WE TEACH MATHS?

Mathematics introduces children to concepts, skills and thinking strategies that are essential in everyday life and support learning across the curriculum.

It helps children to make sense of the numbers, patterns and shapes they see in the world around them, offers ways of handling data in an increasingly digital world and makes a crucial contribution to their development as successful learners. Children delight in using mathematics to solve a problem, especially when it leads them to an unexpected discovery or new connections. As their confidence grows, they look for patterns, use logical reasoning, suggest solutions and try out different approaches to problems. Mathematics offers children a powerful way of communicating. They learn to explore and explain their ideas using symbols, diagrams and spoken and written language. They start to discover how mathematics has developed over time and how it contributes to our economy, society and culture. Studying mathematics stimulates curiosity, fosters creativity and equips children with the skills they need in life beyond school.

OUR SCHOOL

At our school we make maths exciting, enjoyable and stimulating. We provide high quality teaching which is engaging, interactive and builds upon children's prior learning. Our school's maths and calculation policy ensures that there is consistency across the school and the children are provided with the key strategies in order for them to reach their full potential.

- Alderman Cogan's Church of England Primary Academy is committed to following the principles outlined by the National Centre for Excellence in the Teaching of Mathematics (NCETM). Our goal is to provide a high-quality mathematics education that fosters a deep understanding and love of the subject among our pupils. To achieve this, we:
- Ensure a Mastery Approach: We have adopted a mastery approach to teaching mathematics, which means providing all pupils with the opportunity to achieve a deep understanding of mathematical concepts, skills, and processes. This will be achieved through careful sequencing of topics, regular assessment, and providing extra support for those who need it. We use the 5 big ideas of Coherence, Fluency, Mathematical Thinking, Variation and Representation and Structure as vehicles to learning.
- Encourage Mathematical Thinking: We encourage our pupils to develop a positive attitude towards mathematics and to think flexibly, critically and creatively. We use open-ended questions and activities to stimulate their curiosity and to help them to develop reasoning and problem-solving skills.
- Use Real-life Contexts: We ensure that the mathematics taught in our school is rooted in real-life contexts so that our pupils can see the relevance and importance of the subject. We provide opportunities for pupils to apply their mathematical knowledge and skills to real-life situations and to use technology to enhance their understanding. We provide opportunities for pupils to work collaboratively, as well as independently, to develop their communication and team-working skills.
- Coherent Curriculum: Our inclusive, sequential curriculum ensures all pupils can access lessons which are appropriately scaffolded to meet the individual needs of learners through adaptive teaching (including pupils with SEND). This ensures that each child is challenged and supported to achieve their full potential.
- Develop Fluency: We develop our pupils' fluency in the foundational knowledge of mathematics, including number, geometry, measurement and statistics. We ensure that our pupils have a solid foundation in these areas, which will enable them to tackle more complex mathematical concepts in the future.
- By following these principles, our primary school's mathematics program will provide our pupils with a rich and rewarding mathematical education, one that prepares them well for the challenges of secondary school and beyond.

Vocabulary development

It is important to introduce children to the correct vocabulary at the appropriate time and within a suitable context. It is often helpful to do this using relevant real-life objects, mathematical manipulatives and visual representations such as pictures and diagrams. All children need regular, planned opportunities to develop their mathematical vocabulary in order that they become familiar with the language and are not confused by mathematical terms. They need to acquire the words necessary for them to take part in lessons and activities, respond to questions correctly and carry out tasks successfully. Fun games and activities, such as the following example, can be a useful way to rehearse words and their meanings regularly.

Ideas

- **'Just a minute' word game**

Choose a topic that the class is working on. Write up to 20 relevant mathematical words on separate pieces of card. Ensure that familiar as well as new words are included. Create enough sets of cards for small groups of children to use. Demonstrate what the children need to do: say the meanings of the words on the cards. Ask the children to identify the word you are describing. How many can they say correctly in one minute? Next, organise children into mixed-attaining groups and give each group a set of cards. Choose the most confident child to begin describing the words on the cards as you previously demonstrated. After a minute, the describer role passes to the next most confident learner. Repeat until all the children have taken a turn, finishing with the least confident learner. The children can use or adapt each other's definitions or create descriptions of their own. For each turn, the group should note how many words were identified correctly. Does their score improve by the final turn?

- **Call My Bluff**

As in the old TV series, give the children Mathematical vocabulary with a choice of definitions. They then use dictionaries to find the correct definition.

- **Ready, Steady, Look**

Children race to find specific words in their dictionaries. This develops skills in the use of dictionaries at the same time as developing their awareness of Mathematical vocabulary.

- **I'm thinking of a number...**

Children use mathematical talk to find clues to the number that the teacher or a pupil is thinking of.

- **Speechless**

Using pencil and paper, but without speaking or writing any words, define a word by drawing examples.

- **Crosswords**

Design and make crosswords using Mathematical vocabulary.

- **Countdown**

Give anagrams of a word, with its definition, and let the children race against the clock to solve the anagram.

- **Maths Attack**

Develop understanding of particular concepts and specialist vocabulary by asking children to develop the definitions and examples given in the dictionary. Produce a fact sheet or poster with as many examples as possible to define the word.

Question types

Questions that can help to develop more complex thinking, include those which require children to:

<u>Predict or hypothesise</u>	<ul style="list-style-type: none">● Roughly how much is 51 multiplied by 47?● Estimate the number of counters in the tray.
<u>Represent mathematical ideas</u>	<ul style="list-style-type: none">● How could you show that on a number line?● Can you represent the problem using counters?
<u>Apply mathematics to solve problems</u>	<ul style="list-style-type: none">● How could we count these?● How could you test a number to see if it is divisible by 6?
<u>Make generalisations</u>	<ul style="list-style-type: none">● What does that tell us about numbers that have a 5 or a 0 in the ones position?● What can we say about the total angles in a quadrilateral?
<u>Reason mathematically</u>	<ul style="list-style-type: none">● I have 58p in my pocket, what coins could they be?● Why is the product of two odd numbers always odd?
<u>Useful question starters</u>	<p>When planning open questions, the following question stems and sentence starters can be helpful:</p> <p>Explain why ...</p> <ul style="list-style-type: none">● I wonder why ...● How do you know ...?● Does anyone know ...?● What will happen if ...?● How will you know ...?● How can we find out ...?● Can you describe ...?● Convince me ...● Is there another way ...?● What makes you think that ...?

Please find attached a link to the Year group progression of vocabulary here:

https://drive.google.com/file/d/1Y8b-wPrpPQmJRuHfG8KVT-vcgmchRa6y/view?usp=share_link