

One Voice Maths at Torkington Primary School



nurturing potential, inspiring excellence



INTENT

Mathematics is important in everyday life and, with this in mind, the purpose of Mathematics at Torkington Primary School is to develop an ability to solve problems, to reason, to think logically and to work systematically and accurately. All children are challenged and encouraged to excel in Maths. New mathematical concepts are introduced using a 'Concrete, Pictorial and Abstract' approach; enabling all children to experience hands-on learning when discovering new mathematical topics, and allows them to have clear models and images to aid their understanding. Arithmetic and basic math skills are practised daily to ensure key mathematical concepts are embedded and children can recall this information to see the links between topics in Maths.

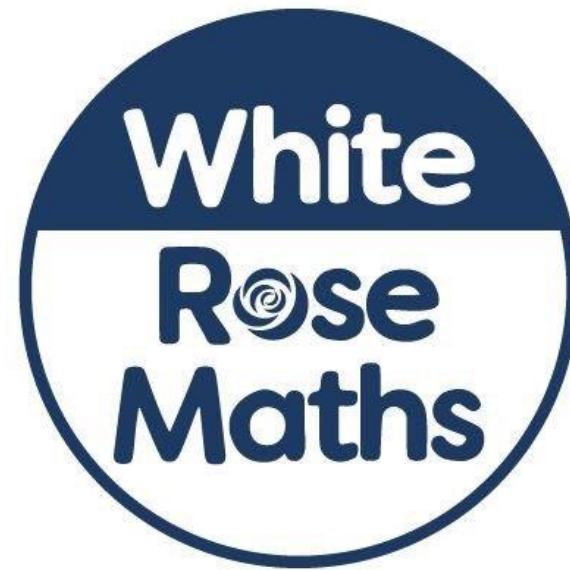
SEND

Maths at Torkington provides the same content for all learners, however, children are supported through mixed ability pairings, CPA approach, pre-teach, focus groups and interventions. Prior learning is built on and is also embedded and reinforced across the curriculum e.g. science and Teach Active. The children are tracked throughout school through both formative and summative assessment to ensure continued progress. Children at risk of not making expected progress are identified and provided with additional support through booster groups to close any gaps.



IMPLEMENTATION

At Torkington, children study mathematics daily following Mastering the Curriculum materials, which are aligned with the White Rose Maths framework and the National Curriculum. These are blocked schemes, which allow for depth and breadth of learning within each strand of mathematics.



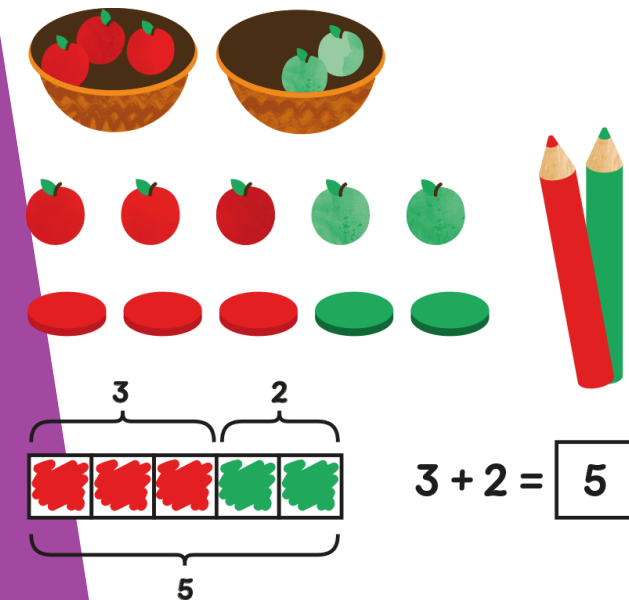
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Hallmarks of our Mastery Approach



Concrete, Pictorial and Abstract Learning:

Children engage with a wide and varied range of concrete manipulatives, pictorial representations and abstract methodologies within each session. Cohesive use of CPA is a fundamental part of mastery in mathematics for all learners, not just those pupils with SEND. Concrete and pictorial references scaffold and strengthen understanding and are widely used as a teaching and learning tool from Foundation Stage to Year 6.



Fluency, Reasoning and Problem Solving:

Every learning session includes the opportunity to develop fluency skills, construct chains of reasoning using relevant knowledge alongside relevant terminology and solve increasingly complex problems in a systematic and coherent way. This is completed in our Problem of the Day. Groups of children in Year 4, 5 and 6 have the opportunity to challenge themselves in the Primary Maths Challenge. In addition to this Year 5 have the opportunity to take part in the SG Maths Challenge.

Mathematical Vocabulary:

Sessions include explicit reference to vital mathematical vocabulary to support and encourage all children to communicate their ideas with mathematical precision and clarity. This is also displayed on the Learning Board along with example calculation strategies and examples of current learning for the children to refer to through the sessions.

KSI Problem of the Day

Thursday 1st March 2018

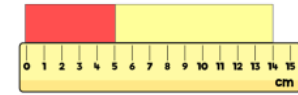
- 1 Apples are sold in bags of 5
Tim buys 6 bags of apples.



Tim uses 8 apples to make a pie.
How many apples does Tim have left?

22

- 2 Two strips of paper are placed end to end.

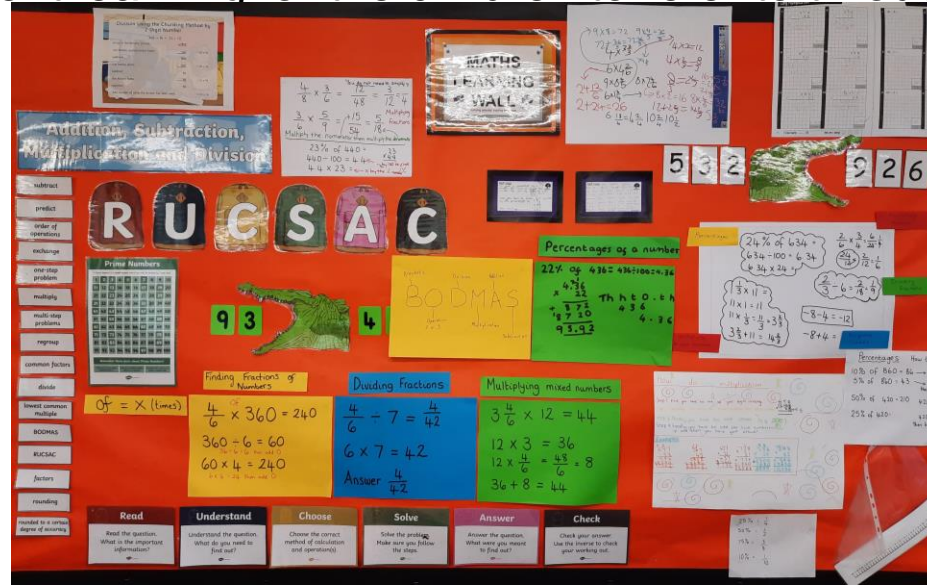


How much longer is the yellow strip than the red strip?

4 cm



IMPLEMENTATION



The Learning Board is a red board covered in mathematical resources. At the top, it says 'MATHS LEARNING WALL'. Below this, there are several sections:

- Order of operations:** A list of operations: addition, subtract, multiply, divide, and their corresponding symbols.
- RUCSAC:** A large acronym for the order of operations.
- BODMAS:** A large acronym for the order of operations.
- Prime Numbers:** A grid of numbers with prime numbers highlighted.
- Percentages of a number:** Calculations such as 24% of 634, 634 - 100 = 534, 534 x 24 = 1281.6, 634 + 1281.6 = 1915.6.
- Adding Fractions:** Calculations such as $\frac{1}{2} + \frac{1}{3} = \frac{3}{6} + \frac{2}{6} = \frac{5}{6}$.
- Dividing Fractions:** Calculations such as $\frac{1}{2} \div \frac{1}{3} = \frac{1}{2} \times \frac{3}{1} = \frac{3}{2}$.
- Multiplying mixed numbers:** Calculations such as $3\frac{1}{2} \times 12 = 44$.
- Read, Understand, Choose, Solve, Answer, Check:** A process flow for solving problems.

IMPLEMENTATION

Fluent Recall:

We are committed to ensuring that pupils secure their knowledge of Times Tables and Related Divisional Facts by the end of Year 4. Our pupils engage in regular low stakes testing through Times Tables Rock Stars to practice fluent recall. Year 4 children prepare and take part in the national MTC.



Arithmetic:

Arithmetic is taught and practised daily as a discrete lesson. This is to ensure that children develop the confidence, pace and fluency with the basic skills of their year group. Arithmetic lessons are short lesson which are teacher focused and then allow children time to practise their learning. Over the week we expect to see the children's scores improve as they become increasingly fluent. For any children who are struggling, the teacher and/or TA will help and support them so that no child is left behind. Maths interventions are used to close any gaps that occur.

NCETM Mastering Number Project:

We were very pleased to be accepted onto the Mastering Number Project. This is a programme that aims to secure firm foundations in the development of good number sense for all children from Reception through to Year 1 and Year 2. The aim over time is that children will leave KS1 with fluency in calculation and a confidence and flexibility with number.



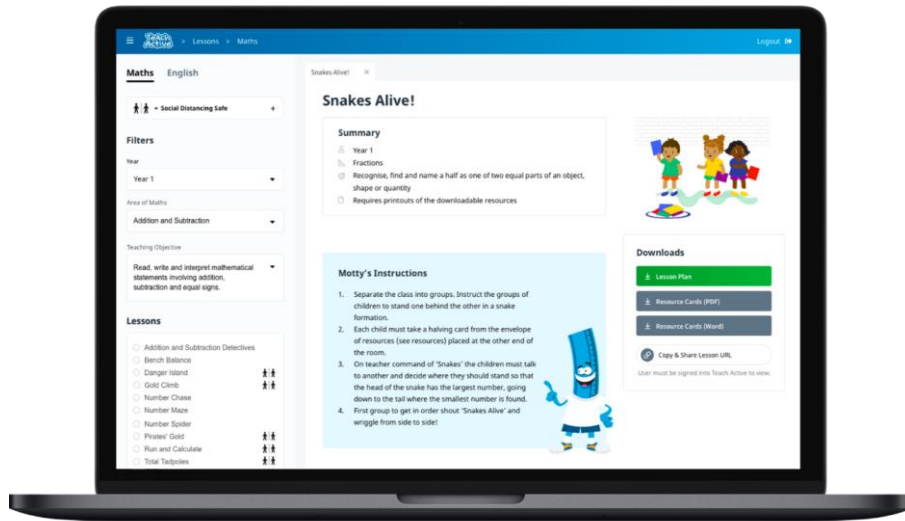
IMPLEMENTATION



Active Maths:

Teach Active is an online resource tool which provide us with lesson plans and resources with which to deliver the Primary Maths curriculum through physical activity.

Teach Active is founded on a passion for active learning and the many benefits that come from this cross-curricular approach. Contributing to the government's recommended 60 minutes of physical activity per day, the resource has been proven to improve attitudes and attainment in Maths, whilst also improving children's health and wellbeing.



EYFS

At Torkington we understand the importance of early experiences of maths, and have committed to the mastering the curriculum within our Early Years setting. This approach places a significant emphasis on developing a strong grounding in number – understanding that this is a necessary building block for children to excel in the subject.

Practitioners provide creative and engaging opportunities for children to ignite their curiosity and enthusiasm for the subject, while focusing on the three prime areas of: Communication and Language, Physical Development and PSED.

Activities and experiences are frequent and varied, and allow children to build on and apply understanding of Numbers to 10. Concrete manipulatives are a key focus within sessions, as is the use of pictorial representations including Tens Frames and Part/Whole Models.

Children are actively encouraged to use mathematical terminology within their understanding, with a focus on developing positive attitudes and interest in the subject. The focus learning of the week is consistently reinforced throughout continuous provision areas throughout the week, with opportunities for independent application.

IMPACT



- ▶ As a result of our Maths teaching at Torkington you will see:
- ▶ Engaged children who are all challenged.
- ▶ Lessons that use a variety of resources to support learning.



► Different representations of mathematical concepts.

Anchor: focus group with Mrs Sykes

(T) (H) (T) (O) (O)
 2 7 1 8 x 4 = 10,872 ✓

2000 x 4 = 8000 ✓ 8000
 700 x 4 = 2800 ✓ 2800
 10 x 4 = 40 ✓ 40
 8 x 4 = 32 ✓ 32

2718 10,872 ✓ Partitoning
 x 4 Standard column

+ 32
 40
 2800 3216
 8000 x 3
 10,872 ✓ 9648 ✓
 Expanded column Standard column

- Confident children who can all talk about Maths and their learning and the links between Mathematical topics.

7. $48 \div 3 = 16 - 15 = 1$ ✓ Well done Isla - I am pleased you saw the impact and you know what it looks like in your learning. Have a think what super power you need for

Reflection I feel like I am starting to greatly understand BODMAS because I am confident with it and I got majority questions right. I have used independence, self belief, self control, determination, problem solving and focus. All of these super powers were effective and it impacted my learning massively. I looked concentrated and focused and successful. Next time I am going to try much harder BODMAS and maybe do more word problems for it.

Reflection

The particular Super Power I used today was Self belief because even though I found some questions hard I believed in myself and got one right. I have felt about about my learning today was alright I wasn't 100% confident but I used my positive thing to help. The effect was that I had a positive mindset and managed to get one right and what I am going to differently is if I am really finding something hard I will try and use all my superpowers to try and help solve the questions that I have found hard. And even pop my hand

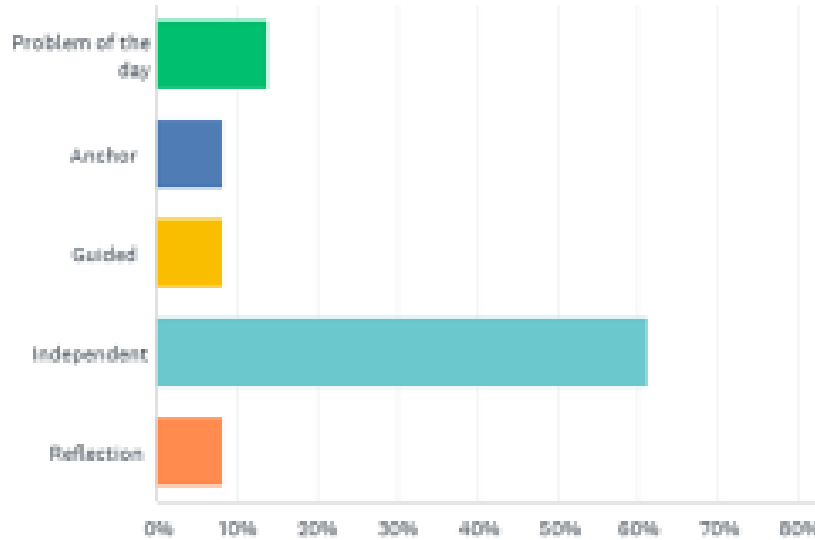
IMPACT

► Subject Monitoring

We regularly monitor the quality and impact of our mathematics curriculum through targeted learning walks, book scrutiny and pupil interviews. In addition to this, we survey our staff and pupils to identify their perception of mathematics and identify CPD needs.

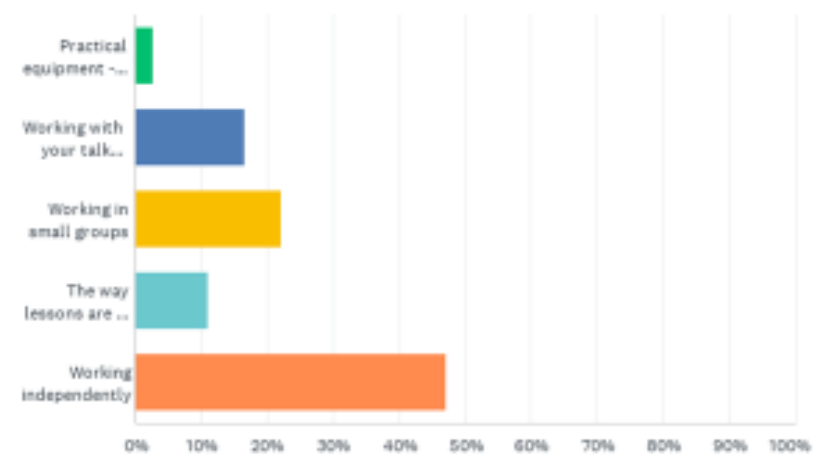
Q2: Which is your favourite part of a Maths lesson?

Answered: 36 Skipped: 0



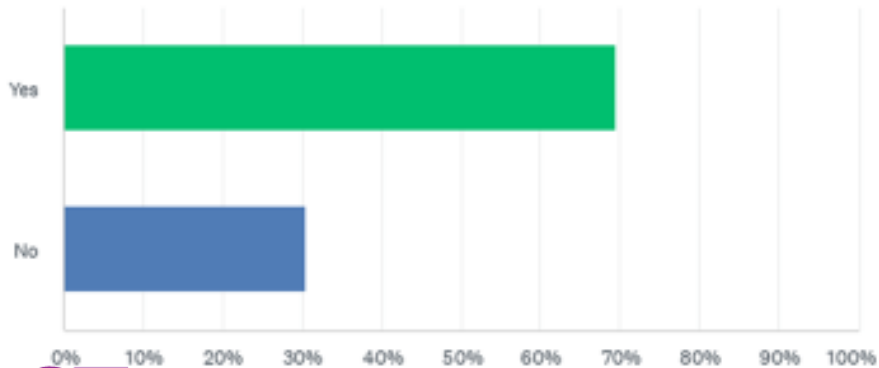
Q3: What makes your Maths lesson enjoyable?

Answered: 36 Skipped: 0



Q5: Do you use the Maths learning wall to help you during lessons?

Answered: 36 Skipped: 0



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Pupil Voice Feeds into our Next Steps

IMPACT

IMPACT

► Learning that is tracked and monitored to ensure all children make good progress.

Formative Assessment:

Teachers carry out formative assessment through AfL in each session and feedback is given to children verbally, through self/peer assessment and through marking. Teachers then use this assessment to influence their planning. Children are rapidly identified as needing further challenge or additional support, and we ensure that this is provided in a timely manner.

Timely Interventions:

Teachers believe that all children can achieve in maths, and focus on whole class teaching. Where prerequisites are not secure, timely interventions will be carried out. Our interventions are focused on Pre-Teaching and Same Day Interventions.

Class Teacher, Teaching Assistants and Learning Support Assistants access suitable therapies for whole class and small group teaching to ensure that all children reach their full potential.

Summative Assessments:

Children complete End of Block assessments for each phase of learning. Results are used to further inform planning and allow for tailored interventions groups to take place to ensure the objectives are secured.

Our Assessment Calendar also includes 3 key dates for capturing progress and attainment against National Curriculum Objectives. Assessments are carried out in Autumn, Spring and Summer terms. Question analysis informs booster and intervention sessions for those who are at risk of not making expected progress or those who have the potential to make accelerated progress. This has been embedded in Key Stage 2 this Year and further extended across the school.