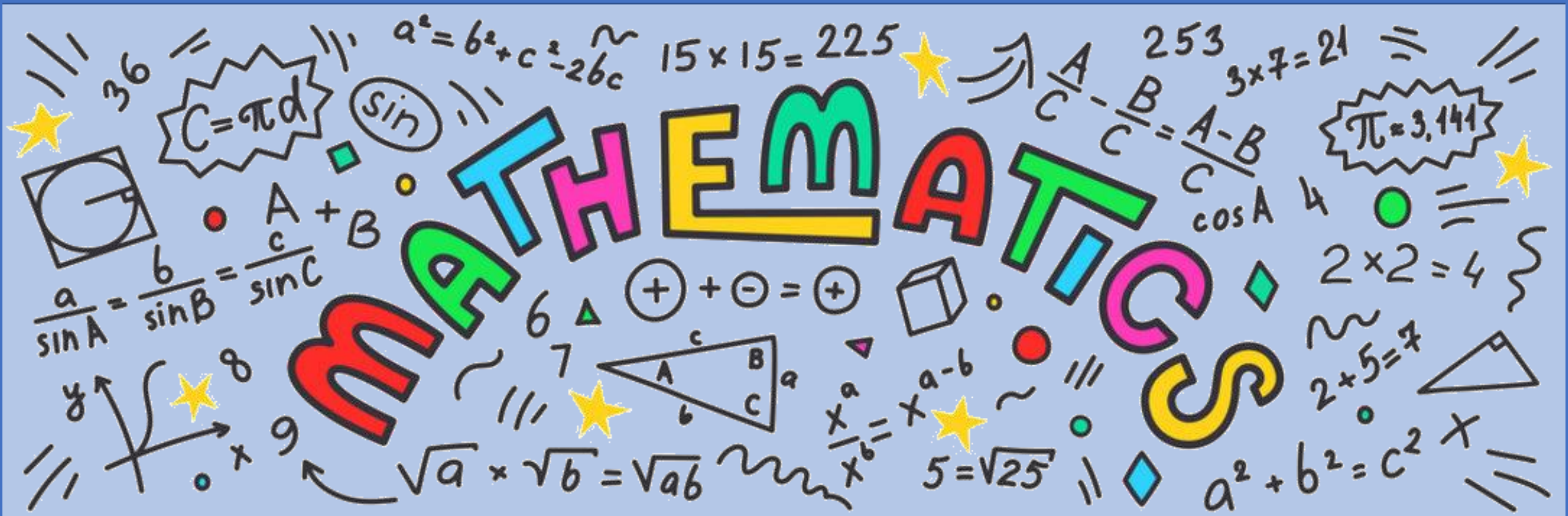
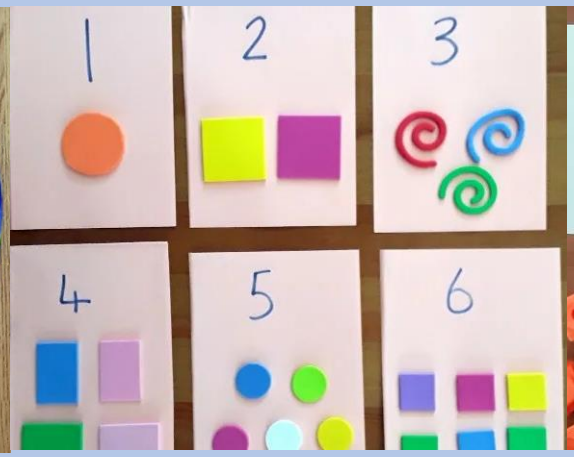
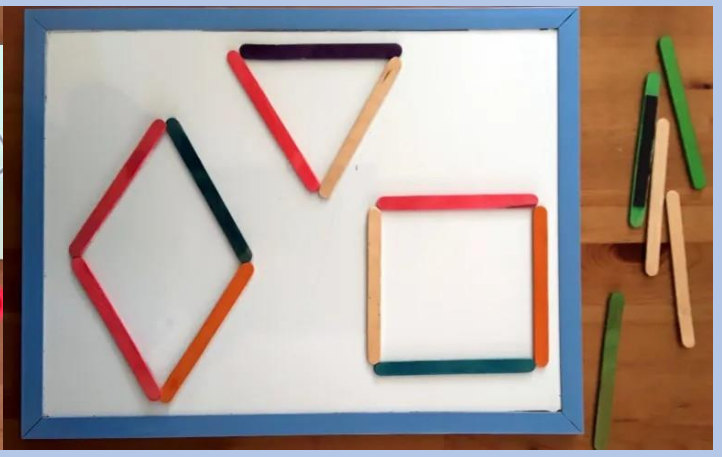
Mathematics in Year Six at Studley St Mary's



Introduction to Year Six Mathematics

In Year Six, children build upon the mathematical foundations laid in preceding years. The curriculum focuses on developing fluency in number, understanding of operations, and application of mathematical concepts in various contexts. Today, we will cover essential areas including Times Table knowledge, Key Instant Recall Facts (KIRFs), and our school's calculation policy.



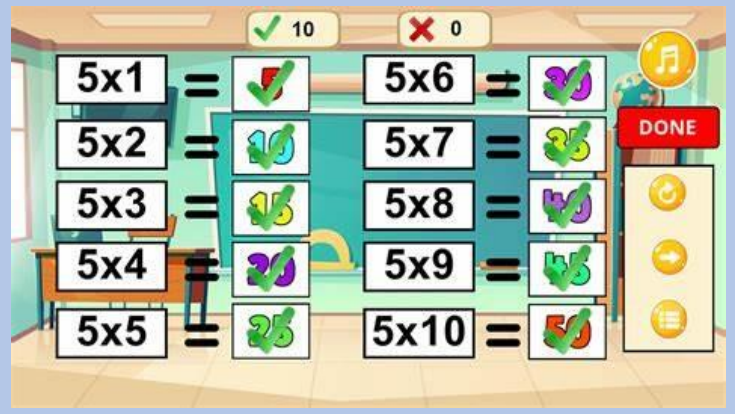


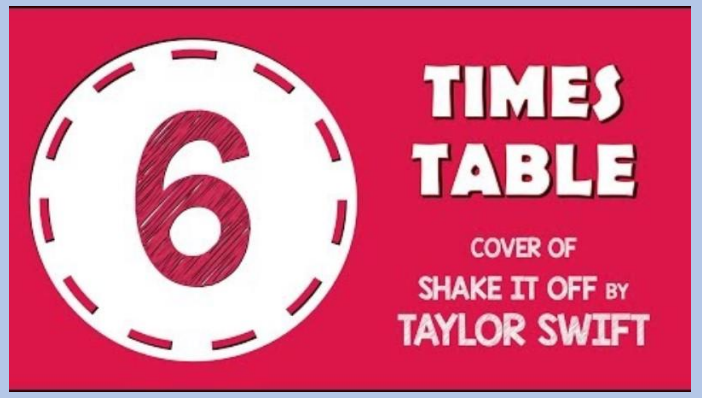
Importance of Times Tables

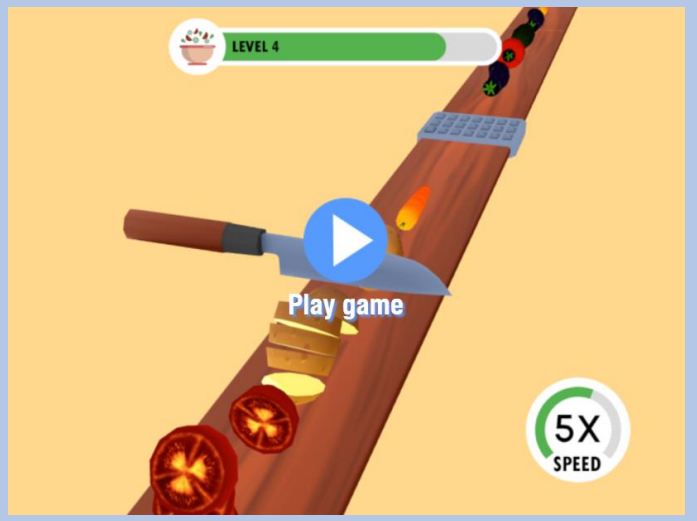
Times Tables are a crucial part of the mathematics curriculum in Year Six. Mastering times tables helps children to gain confidence in multiplication and division, enabling them to tackle more complex problems with ease. It is essential that we all encourage regular practice and application of these tables in various contexts to ensure retention and understanding.

Strategies for Teaching Times Tables

To teach Times Tables effectively, a combination of methods is required. Visual aids, rhythmic chants, interactive games, and consistent practice are key. Engaging children in competitions can also motivate them to enhance their recall speed.







TIMES TABLES ROCK STARS

Key Instant Recall Facts (KIRFs)

Key Instant Recall Facts (KIRFs) are specific facts that children should know by heart, facilitating quick recall in mathematical operations. For Year Six, KIRFs include a range of multiplication, division and number bonds facts. These are crucial for improving fluency and aiding problem-solving skills across the curriculum.

Year 6
Derive multiplication and division facts using multiples of 10 and decimal numbers
Know the test for divisibility for numbers up to 10,000,000
Multiply and divide decimal numbers by 10, 100 and 1000.
Know square roots of square numbers to 15 x 15
Know all previous number bonds including decimals that total 1 or 10 (two decimal places)
Know doubles and halves of all 2-digit numbers including 2-digit decimals

Key Instant Recall Facts (KIRFs)
Year 6: Spring 1

Target: Multiply and divide whole and decimal numbers by 10, 100 and 1,000.

By the end of this half term, children in Year 6 should know the following facts and be able to recall them instantly:

HTh	TTh	Th	H	T	O	·	Tths	Hths	Thths
						·			

X 10	digits move LEFT 1 place	÷ 10	digits move RIGHT 1 place
X 100	digits move LEFT 2 places	÷ 100	digits move RIGHT 2 places
X 1,000	digits move LEFT 3 places	÷ 1,000	digits move RIGHT 3 places

When we multiply by 10, 100 and 1000 we shift the digits to the left. One place left for 10, two places left for 100 and three places left for 1000. When we divide by 10, 100 and 1000, we do the opposite and shift the digits to the right instead.

Key Questions
- What number is 10 times greater than 0·1?
- What number is 100 times smaller than 12?
- What is 152 ÷ 1,000?
- 45 = __ X 10

Vocabulary
- Integer
- Whole number
- Decimal number
- Decimal place
- Place value
- Multiply
- Divide
- Digit

Top Tips

The secret to success? Practise little and often! Can you learn these on your way to school? On a car journey? Or even at the breakfast table? You don't need to learn them all at once: start with those you are more confident with before tackling the rest. Why not practise whilst keeping active? You could throw and catch or kick a ball whilst learning them!

Play games!
- Create a board game or a treasure hunt related to multiplying/dividing by 10, 100 and 1000.
- Make some flashcards and ask a family member to test you- how quickly can you multiply/divide by 10, 100 or 1000?
- Make up a song about how to multiply/divide by 10, 100 and 1000.
- Create a poster for multiplying/dividing by 10, 100 and 1000.

Useful websites (games and information):

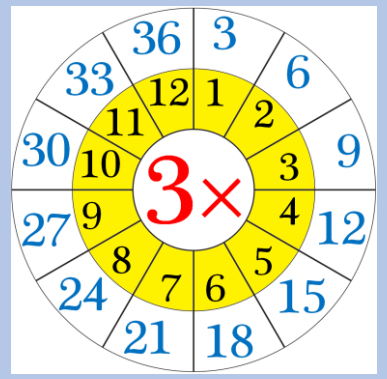
https://www.bbc.co.uk/bitesize/topics/z36tyrd/articles/zd9cydm
https://www.bbc.co.uk/bitesize/topics/zc3d7ty/articles/zmk72v4
https://www.youtube.com/watch?v=Y45H5aCuymg
https://www.topmarks.co.uk/Flash.aspx?f=bingotimesordivide
https://kids.classroomsecrets.co.uk/resource/year-5-divide-by-10-100-and-1000-game/
https://wordwall.net/en-gb/community/multiplication-by-10-100-1000/

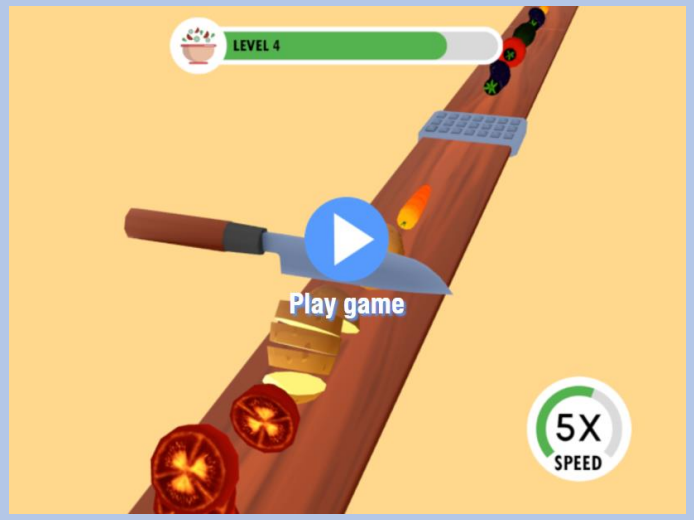
Multiply and divide decimal numbers by 10, 100 and 1000.

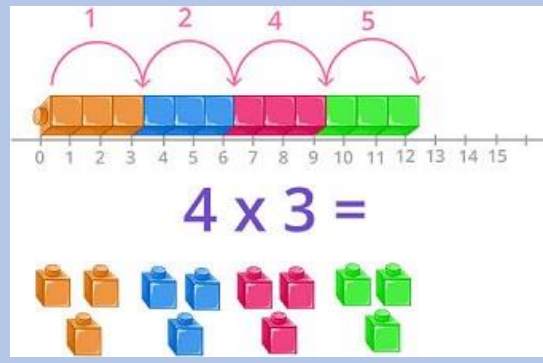
Understanding	Fluency	Reasoning	Problem Solving
Describe what happens to the decimal point when you multiply a number by 1000. Give an example to support your explanation.	Multiply 4.56 by 10 and then divide the result by 100. What is your final answer?	A recipe requires 0.25 litres of oil. If you are making four times the recipe, how much oil is needed? Explain your reasoning.	At the local cafe, a smoothie costs £2.25. If they sell 100 smoothies in a day, what is their total revenue? Show your calculations clearly.
If you divide 15.625 by 1000, what is the resulting number? Discuss the significance of this operation in relation to decimal placement.	Calculate 2.875 multiplied by 100 and then divided by 10. What is your answer? Explain each step of your calculation.	John measured his garden, which is 150.5 square metres. If he wants to create a path that takes up 10% of that area, how much area will be taken up by the path? Justify your response.	A shop owner decided to increase the price of a toy that originally costs £4.99 by 300%. What will be the new price of the toy? Present a clear method for how you arrived at your answer.

Approaches to KIRFs in the Classroom

To effectively integrate KIRFs into the classroom and at home, families and teachers can implement regular practice sessions, quick quizzes, and interactive games. Daily starters focusing on KIRFs can help build speed and fluency. Additionally, tracking progress through assessments can provide insight into areas that require further support.

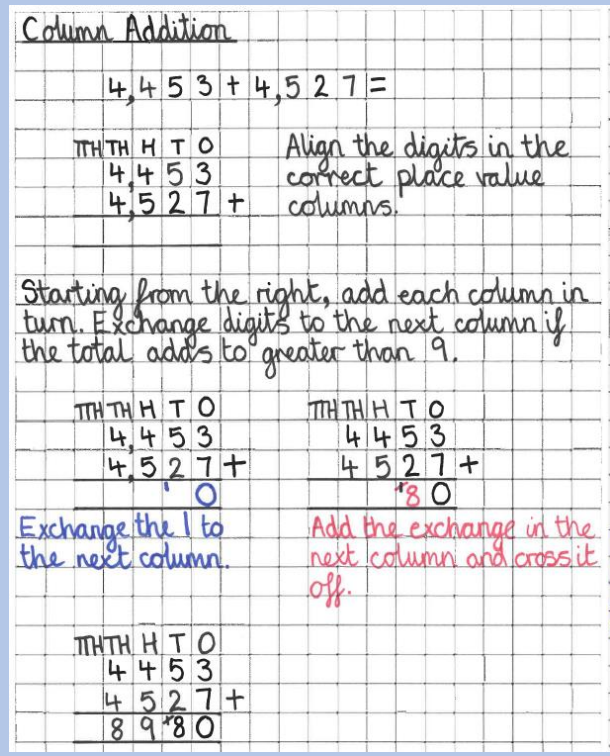


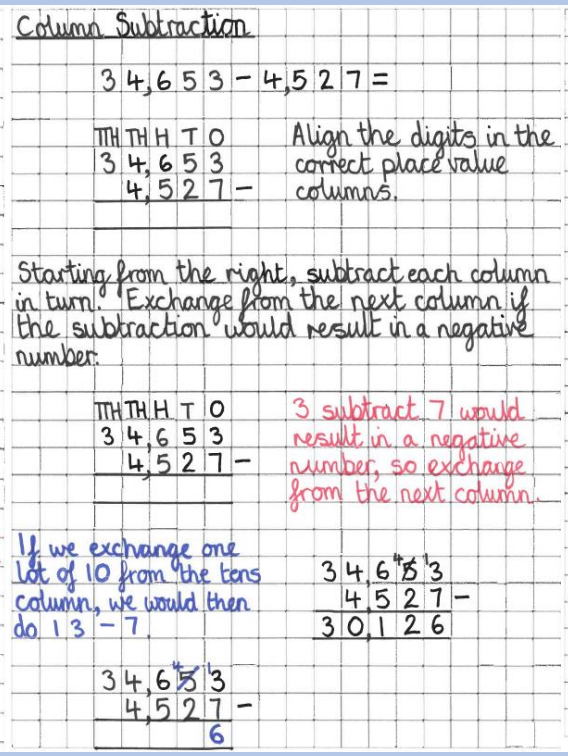


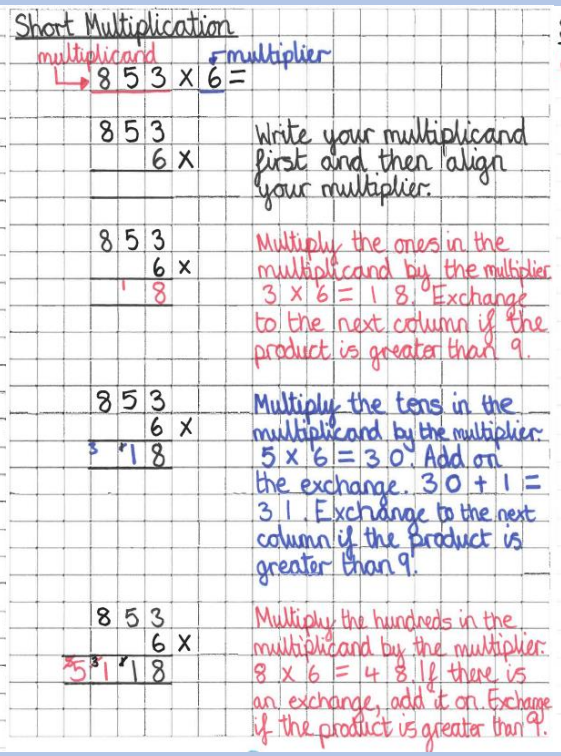


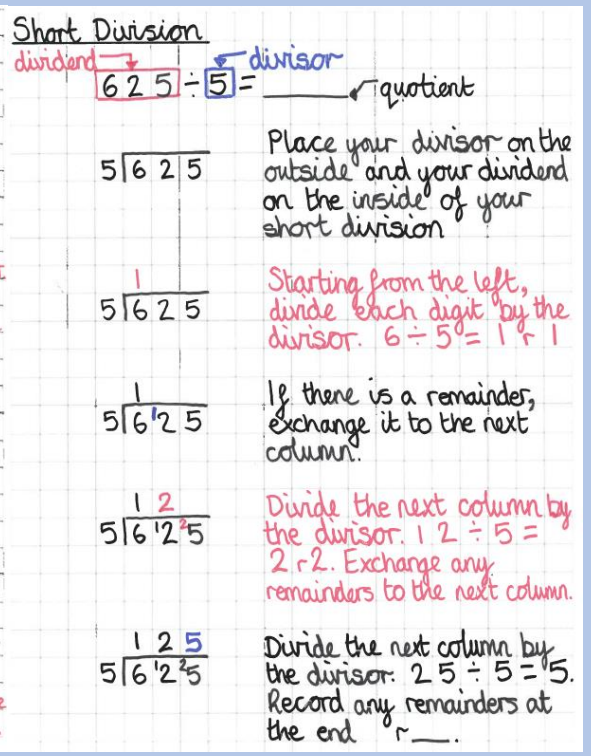
Year Six Calculation Policy

The Calculation Policy outlines a consistent approach to teaching mathematical operations across the year group. It defines the methods to be taught for addition, subtraction, multiplication, and division, alongside the progression of complexity to ensure all children can experience success. Teachers and families should familiarise themselves with this policy and adapt their teaching or home-learning to meet the needs of all children.









Lesson Structure

At Studley St Mary's, we are committed to providing a high-quality mathematics education that aligns with the National Curriculum. We implement the White Rose Maths scheme of learning, which supports a mastery approach. This scheme emphasises a robust focus on number, crucial for developing our children's competency.

Furthermore, White Rose Maths encourages reasoning and problem-solving, essential for effective learning. We believe in a concrete-pictorial-abstract approach to aid understanding. Our curriculum is cumulative, revisiting topics such as place value throughout the year, complemented by weekly fluency lessons to consolidate key skills and knowledge.

- Fluent in Five
- Revisit
- Anchor
- Guided Practice
- Do It
- Twist It
- Deepen It

Concrete, Pictorial, Abstract (CPA) Approach

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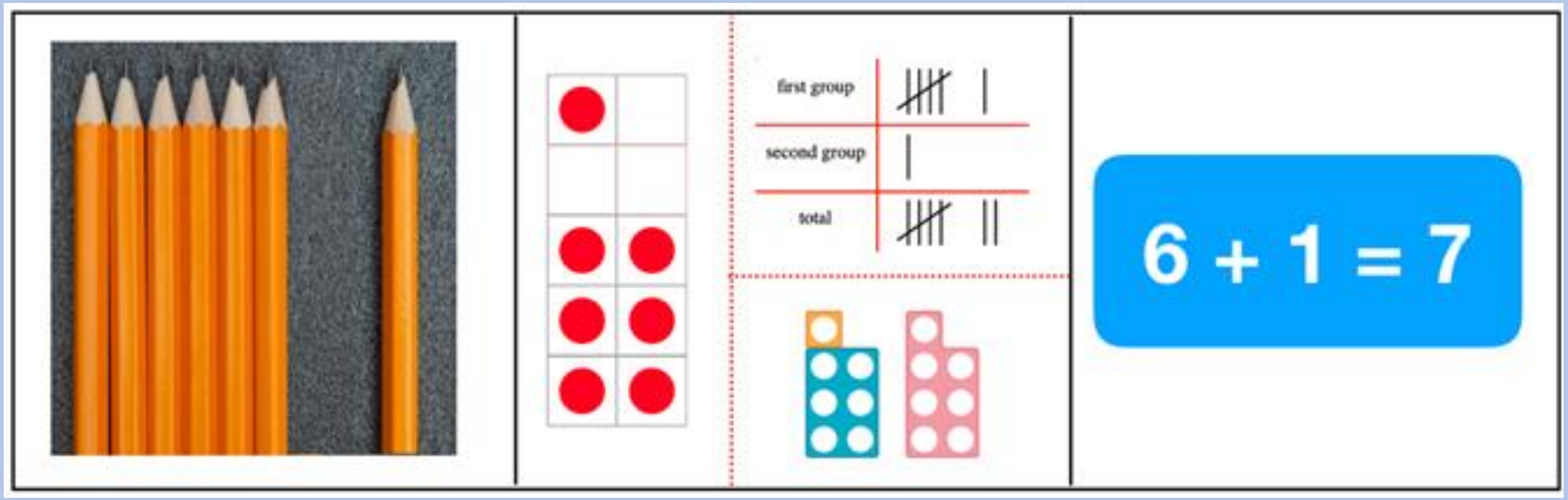

Conclusion and Key Takeaways

In conclusion, effective mathematics teaching in Year Six is multidimensional, involving Times Table knowledge, KIRFs, and a solid Calculation Policy. By implementing the strategies discussed in this presentation and fostering an inclusive and engaging learning environment, we can help our children develop a love for mathematics and the skills they need for future success.