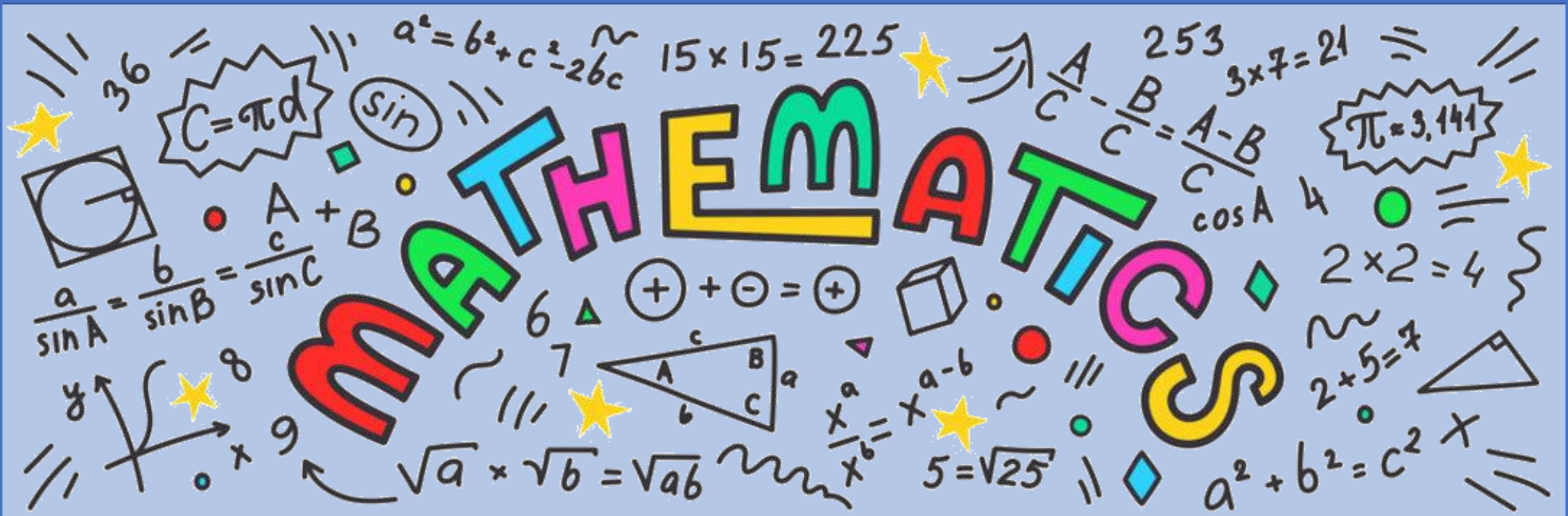
# Mathematics in Year Three and Four at Studley St Mary's




STUDLEY
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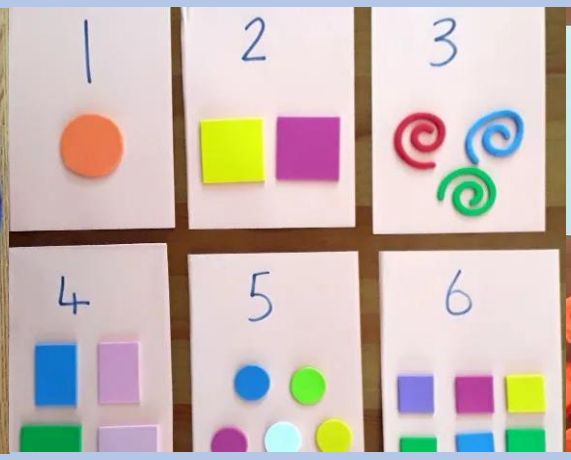
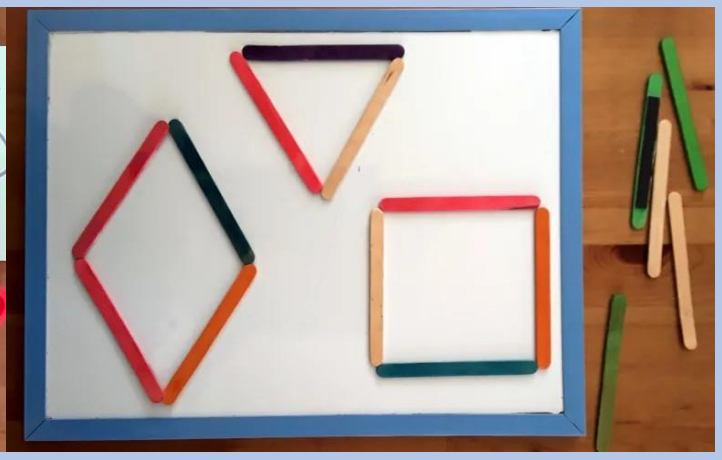
# Introduction to Year Three and Four Mathematics

In Year Three, children build upon the foundations of mathematics established in earlier years. This is a pivotal year where children develop their understanding of key mathematical concepts, including addition, subtraction, multiplication, and division. The Year Four curriculum builds on this, moving towards developing children's fluency in these areas. Today, we will explore the essential components of the Year Three and Four mathematics curriculum, focusing on Times Table knowledge, Key Instant Recall Facts (KIRFs), and our Calculation Policy.

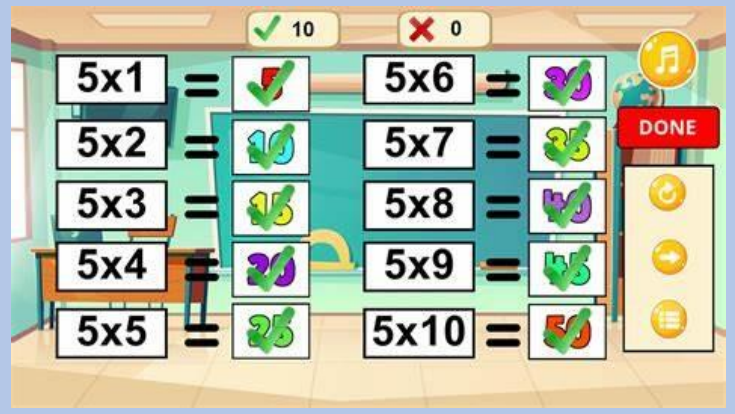


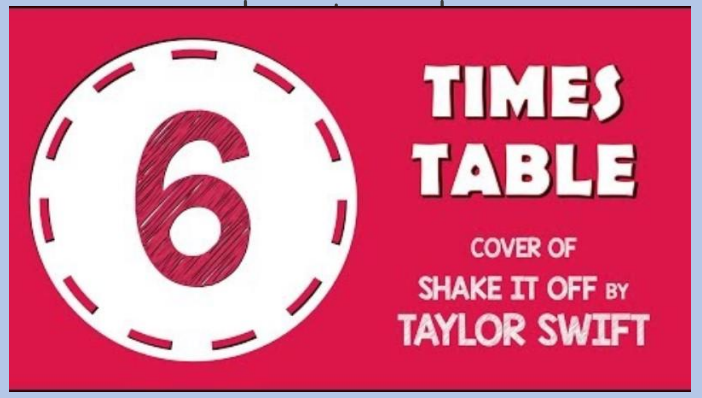
# Importance of Times Tables

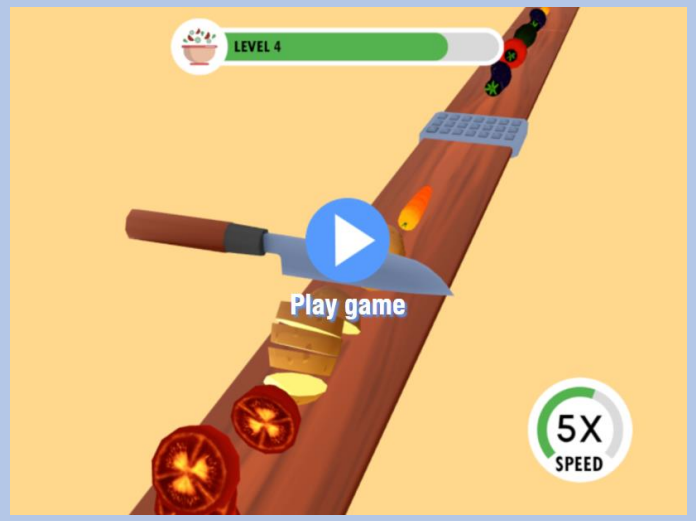
Times Tables are a crucial part of the mathematics curriculum in Year Three and Four. Mastering times tables helps children to gain confidence in multiplication and division, enabling them to tackle more complex problems with ease. It is essential that we all encourage regular practice and application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

# Strategies for Teaching Times Tables

In Year Three, we revisit the twos, fives and tens times tables and learn the threes, fours and eights times tables. By the end of Year 4, children should know all tables up to 12x12. Effective strategies for teaching Times Tables include using songs, chants, and games to make learning enjoyable. Visual aids such as times table charts can reinforce learning, and practical activities like grouping objects can help solidify the concepts of multiplication. Collaborative learning, where children support each other, also enhances engagement and





TIMES TABLES ROCK STARS

# Key Instant Recall Facts (KIRFs)

Key Instant Recall Facts (KIRFs) are specific facts that children should recall quickly and efficiently. In Year Three, the focus is on number bonds, doubling and halving, and multiplication facts. By instilling these instant recall facts, we enable our children to develop fluency in mathematics and improve their overall problem-solving abilities.

| Year 3 |
| --- |
| Know all addition and subtraction facts for multiples of 10 to 100. |
| Know multiplication and division facts for 2,5 and 10 tables. |
| Know multiplication and division facts for 3 tables. |
| Know multiplication and division facts for 4 tables. |
| Know multiplication and division facts for 8 tables. |
| Know number bonds to 100 (any given number) |

## Key Instant Recall Facts (KIRFs)
### Year 3: Spring 1

**Target: Recall multiplication & division facts for the 3 times tables.**

By the end of this half term, children in Year 3 should know the following facts and be able to recall them instantly:

| | | |
| --- | --- | --- |
| 1 × 3 = 3 | 11 × 3 = 33 | 12 ÷ 3 = 4 |
| 2 × 3 = 6 | 12 × 3 = 36 | 9 ÷ 3 = 3 |
| 3 × 3 = 9 | 36 ÷ 3 = 12 | 6 ÷ 3 = 2 |
| 4 × 3 = 12 | 33 ÷ 3 = 11 | 3 ÷ 3 = 1 |
| 5 × 3 = 15 | 30 ÷ 3 = 10 | |
| 6 × 3 = 18 | 27 ÷ 3 = 9 | |
| 7 × 3 = 21 | 24 ÷ 3 = 8 | |
| 8 × 3 = 24 | 21 ÷ 3 = 7 | |
| 9 × 3 = 27 | 18 ÷ 3 = 6 | |
| 10 × 3 = 30 | 15 ÷ 3 = 5 | |

**Vocabulary**
- Multiply
- Divide
- Share
- Equal groups
- Multiple
- Product
- Factor

**Key Questions**
- 3 × 6 = _
- _ × 3 = 12
- 33 = _ × _

**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!**
- Make a spinner and when it lands on a question, you get a point if you get the answer correct.
- Create a set of question cards and a set of answer cards and play a pairs memory game with them.
- Create a wordsearch – tip = you will have to write the answer as a word rather than digits.

**Useful websites (games and information):**

3 Times Tables - Have Fun Learning! (youtube.com) (song)
KS2 Maths: The 3 Times Table - BBC Teach
Times Tables Games for 6 to 7 year olds (topmarks.co.uk)
Times tables games - Learn them all here!
Multiplication Time Table Games for Kids – SplashLearn
Times Tables Games (maths-games.org)
3 times table quiz - Multiply by 3 test (mathskills4kids.com)
Page not found - Snappy Maths

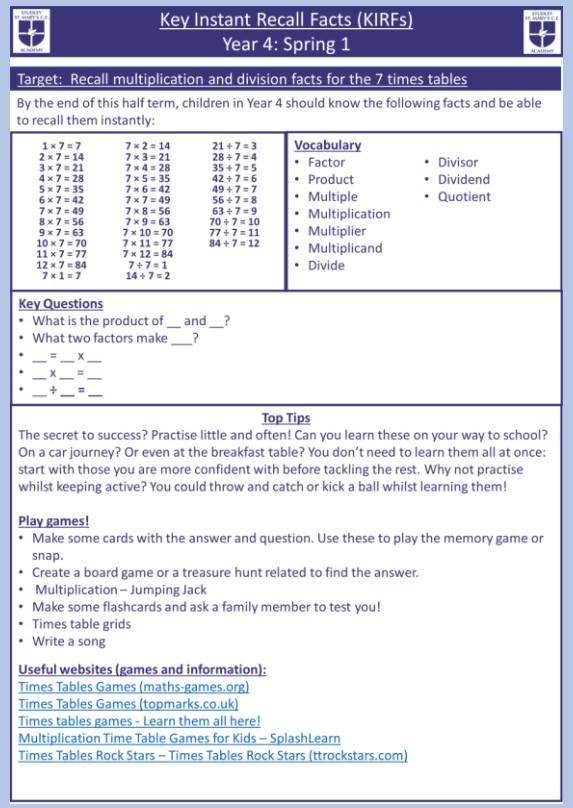
## Know multiplication and division facts for 3 tables.

| Understanding | Fluency | Reasoning | Problem Solving |
| --- | --- | --- | --- |
| Write down the 3 times table (3, 6, 9, ...). What patterns do you notice? | If a pencil costs £3, how much do 4 pencils cost? Write a multiplication sentence to explain your answer. | You are dividing 15 sweets into bags that can hold 3 sweets each. How many bags will you need? Show your working. | A garden centre sells 3 types of flowers. If each type has 6 flowers, how many flowers are there in total? Can you write a number sentence to help show your thinking? |
| Create a word problem that involves multiplying by 3. Include the answer you expect. | What is 21 divided by 3? Show how you got your answer using repeated addition. | Jamie has 24 stickers. If he puts them into packets with 3 stickers in each packet, how many packets will he have? If Jamie decides to give away one full packet, how many stickers will he have left? | A bakery makes 3 trays of cupcakes. Each tray holds 8 cupcakes. If 10 cupcakes are eaten, how many cupcakes remain? Present your answer as a number sentence and explain each step to find the answer. |

# Key Instant Recall Facts (KIRFs)

For Year Four, 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 4 |
| --- |
| Consolidate multiplication and division facts for the 3, 4 and 8 times tables. |
| Know multiplication and division facts for the 6 times table. |
| Know multiplication and division facts for the 7 times table. |
| Know multiplication and division facts for the 9 times table. |
| Know multiplication and division facts for the 11 and 12 times table. |
| Know decimal number bonds to 1. |



Key Instant Recall Facts (KIRFs)
Year 4: Spring 1

Target: Recall multiplication and division facts for the 7 times tables

By the end of this half term, children in Year 4 should know the following facts and be able to recall them instantly:

| | | |
| --- | --- | --- |
| 1 × 7 = 7 | 7 × 2 = 14 | 21 ÷ 7 = 3 |
| 2 × 7 = 14 | 7 × 3 = 21 | 28 ÷ 7 = 4 |
| 3 × 7 = 21 | 7 × 4 = 28 | 35 ÷ 7 = 5 |
| 4 × 7 = 28 | 7 × 5 = 35 | 42 ÷ 7 = 6 |
| 5 × 7 = 35 | 7 × 6 = 42 | 49 ÷ 7 = 7 |
| 6 × 7 = 42 | 7 × 7 = 49 | 56 ÷ 7 = 8 |
| 7 × 7 = 49 | 7 × 8 = 56 | 63 ÷ 7 = 9 |
| 8 × 7 = 56 | 7 × 9 = 63 | 70 ÷ 7 = 10 |
| 9 × 7 = 63 | 7 × 10 = 70 | 77 ÷ 7 = 11 |
| 10 × 7 = 70 | 7 × 11 = 77 | 84 ÷ 7 = 12 |
| 11 × 7 = 77 | 7 × 12 = 84 | |
| 12 × 7 = 84 | 7 ÷ 7 = 1 | |
| 7 × 1 = 7 | 14 ÷ 7 = 2 | |

**Vocabulary**

- Factor
- Product
- Multiple
- Multiplication
- Multiplier
- Multiplicand
- Divide
- Divisor
- Dividend
- Quotient

**Key Questions**

- What is the product of __ and __?
- What two factors make ___?
- __ = __ x __
- __ x __ = __
- __ ÷ __ = __

**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!**

- Make some cards with the answer and question. Use these to play the memory game or snap.
- Create a board game or a treasure hunt related to find the answer.
- Multiplication – Jumping Jack
- Make some flashcards and ask a family member to test you!
- Times table grids
- Write a song

**Useful websites (games and information):**

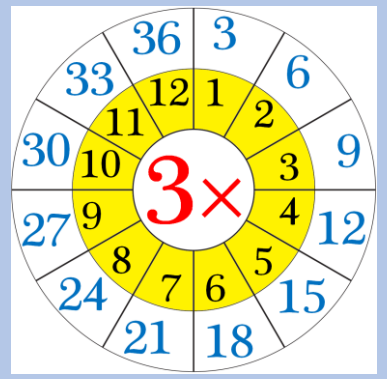
Times Tables Games (maths-games.org)
Times Tables Games (topmarks.co.uk)
Times tables games - Learn them all here!
Multiplication Time Table Games for Kids – SplashLearn
Times Tables Rock Stars – Times Tables Rock Stars (ttrockstars.com)

## Know multiplication and division facts for the 7 times table.

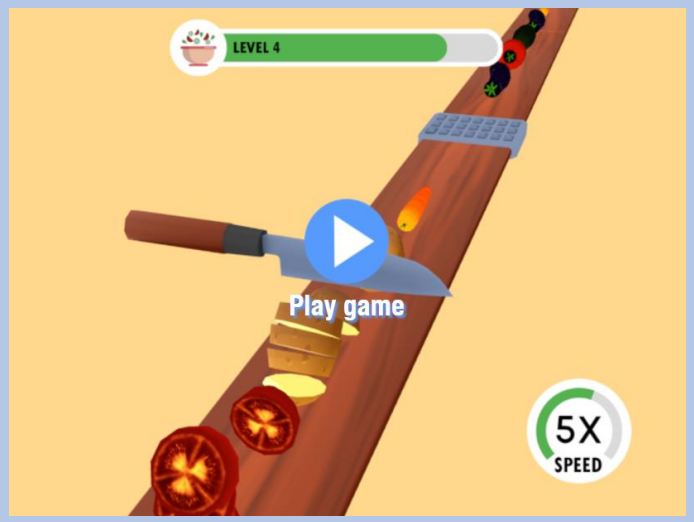
| Understanding | Fluency | Reasoning | Problem Solving |
| --- | --- | --- | --- |
| Complete the multiplication: 7 × 4 = ____. Explain how you arrived at your answer. | Write out the 7 times table up to 10 × 7. | James says that 42 is a multiple of 7. Can you explain why he is correct? | You have a rectangular garden that measures 7 metres long and 4 metres wide. What is the area of the garden? Show how you calculated it. |
| If you know that 7 × 6 = 42, can you use this fact to find out what 7 × 5 is? Explain your reasoning. | Can you solve the following: 56 ÷ 7 = ____? What division strategy did you use? | A baker has baked a batch of 7 trays of cookies, with 8 cookies on each tray. Calculate the total number of cookies and explain your process. | If a group of children wins 7 points for each game they play, how many points would they have after playing 6 games? Show your working and explore whether there is another method to find the answer. |

# Approaches to KIRFs in the Classroom

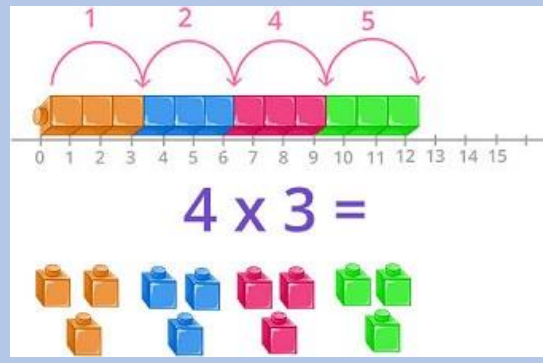
To effectively integrate KIRFs into the classroom and at home, families and teachers can implement regular practice sessions, quick quizzes, and interactive games. Daily starters focusing on KIRFs can help build speed and fluency. Additionally, tracking progress through assessments can provide insight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





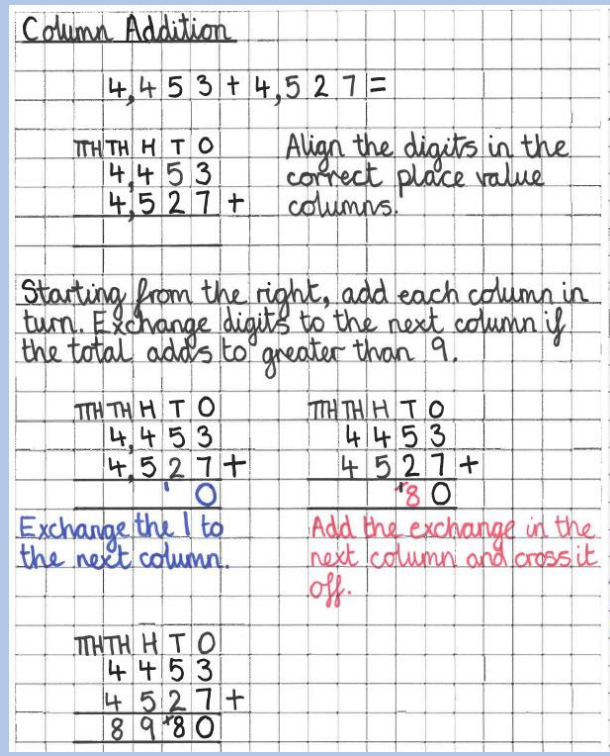



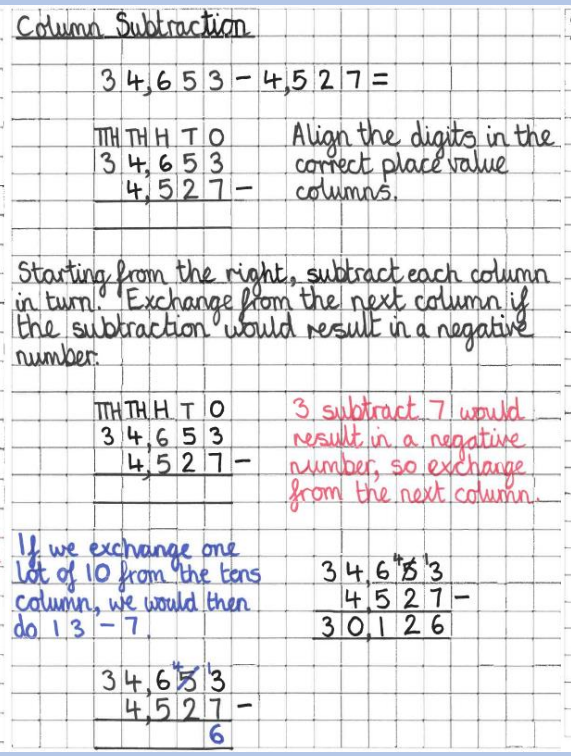

TIMES TABLES ROCK STARS

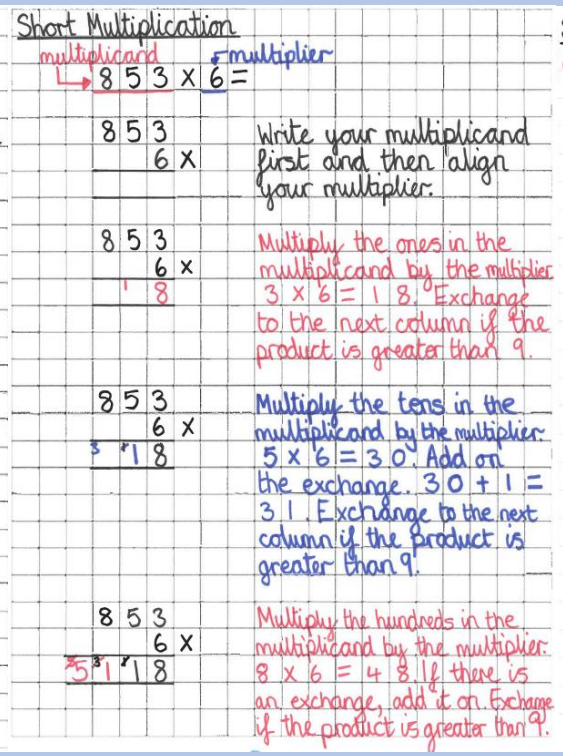


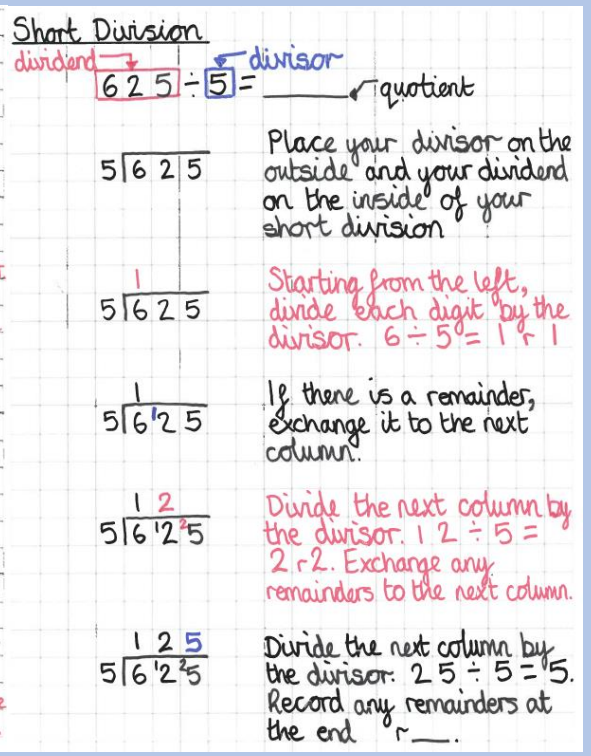
# Calculation Policy

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

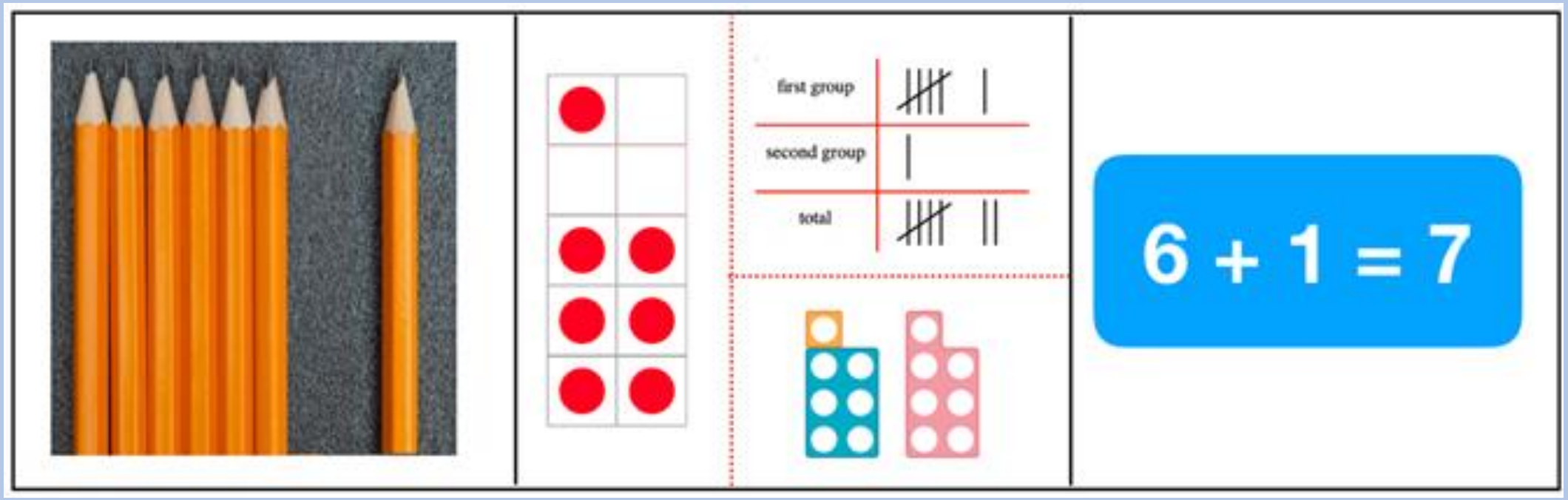
At Studley St Mary's, we are committed to providing a high-quality mathematics education that aligns with the National Curriculum. We implement the White Rose Maths scheme of learning, which supports a mastery approach. This scheme emphasises a robust focus on number, crucial for developing our children's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

Furthermore, White Rose Maths encourages reasoning and problem-solving, essential for effective learning. We believe in a concrete-pictorial-abstract approach to aid understanding.



# Conclusion and Key Takeaways

In conclusion, effective mathematics teaching in Year Three and Four 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.