



# Years 5 and 6 Maths Workshop

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# The National Curriculum

- A huge focus on written and mental arithmetic, particularly through instant recall and rote
- Can be divided into different areas; fluency, problem solving and reasoning
- Children are expected to reason more about their Maths – this is a huge focus for the school this year



# Building for SATs

If your child is currently in Year 6, they will sit the following Maths examinations in May 2019:

- Written Arithmetic Paper 1 (40 marks)
- Reasoning Paper 2 (35 marks)
- Reasoning Paper 3 (35 marks)

If your child is currently in Year 5, they will sit the same exams as above in May 2020. However, these things change all of the time!

**2016** – 70% of children met the expected standard

**2017** – 75% of children met the expected standard

**2018** – 76% of children met the expected standard



# Fluency and Arithmetic

## Written Arithmetic

- Recalling times table multiplication and division facts (e.g.  $9 \times 7$ ,  $12 \times 8$ ,  $77 \div 7$ )
- Written sums for addition, subtraction, multiplication and division (e.g.  $\pounds 43.67 + \pounds 17.15$ ,  $5686 - 1579$ ,  $19 \times 7$ ,  $184 \div 8$ ) – including decimals for smaller numbers (e.g.  $3.2 + 0.005$ ,  $6.72 \times 4$ )
- Finding percentages of numbers (e.g. 35% of  $\pounds 720$ )
- Finding fractions of numbers (e.g.  $\frac{5}{8}$  of 104)
- Adding and subtracting fractions (e.g.  $\frac{5}{8} - \frac{3}{8}$ ,  $1\frac{7}{8} + \frac{7}{8}$ )
- Multiplying and dividing fractions (e.g.  $\frac{5}{8} \div 2$ ,  $\frac{3}{8} \times 5$ ,  $\frac{3}{4} \times \frac{1}{2}$ )
- Square numbers, cube numbers and the square root of numbers (e.g.  $7^2$ ,  $8^3$ ,  $\sqrt{144}$ )
- Simple algebra (e.g.  $4y + 3 = 15$ , so what is  $y$ ?)
- Multiply and dividing numbers by 10, 100 and 1,000 (e.g.  $7,256 \div 100$ ,  $0.072 \times 100$ )



# Building for SATs – Arithmetic

**14**  $50 + (36 \div 6) =$

1 mark

**15**  $\frac{4}{6} \times \frac{3}{5} =$

1 mark

**17**  $581 \div 7 =$

1 mark

**22**

$$\begin{array}{r} 4781 \\ \times 23 \\ \hline \end{array}$$

Show your method

2 marks

**26**  $\frac{1}{4} + \frac{1}{5} + \frac{1}{10} =$

1 mark

**27**  $\frac{4}{5} \div 4 =$

1 mark



# Problem solving and reasoning

## Problem Solving

- Application through word problems, both 2 and 3–step
  - money
  - the number system and place value
  - applying number facts from arithmetic
  - more algebra and fractions, percentages, decimals!
- Data Handling
- Shape, Space and Measure
- Roman Numerals

## Reasoning

Can your child identify what they need to do to solve a problem?

Can they apply all of their numerous Maths skills to help them out?

Can they explain/show how they got an answer?

Can they check that their answer is realistic?

Can they spot patterns?



# Building for SATs – Reasoning

At the start of June, there were 1,793 toy cars in the shop.

During June,

- 8,728 more toy cars were delivered
- 9,473 toy cars were sold.

How many toy cars were left in the shop at the end of June?

Pack of 12 stickers  
£10.49

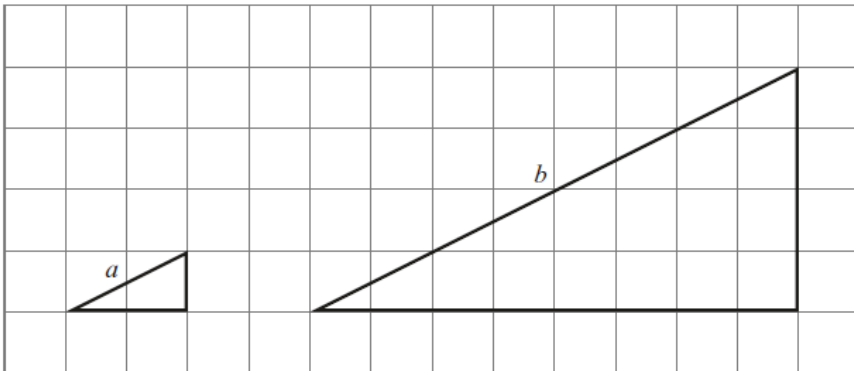
12 stickers  
99p each

Ally buys a pack of 12 stickers for £10.49

Jack buys 12 single stickers for 99p each.

How much more does Jack pay than Ally?

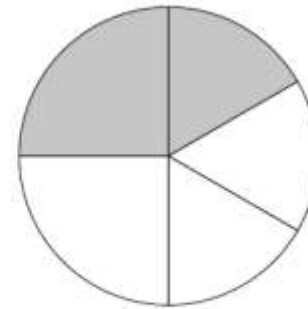
Here are two similar right-angled triangles.



Write the ratio of side  $a$  to side  $b$ .

$a:b =$    $:$

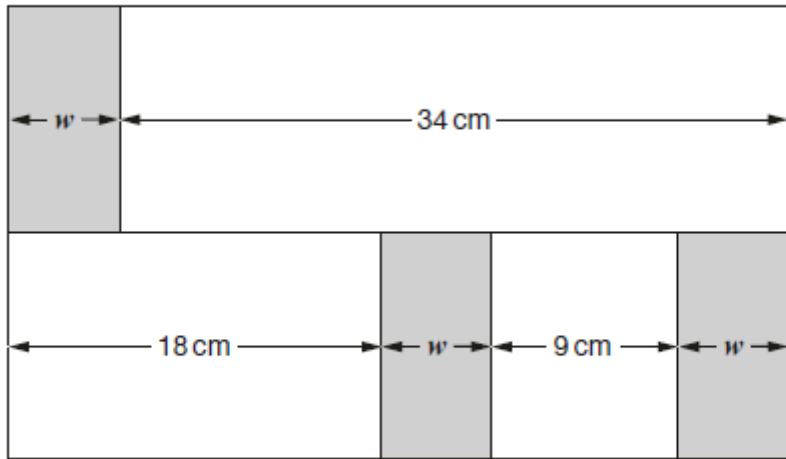
In this circle,  $\frac{1}{4}$  and  $\frac{1}{6}$  are shaded.



What fraction of the whole circle is **not** shaded?

# Building for SATs – Reasoning

In this diagram, the shaded rectangles are all of equal width ( $w$ ).



Not to scale

Calculate the width ( $w$ ) of one shaded rectangle.

William wants to travel to Paris by train.

He needs to arrive in Paris by 5:30 pm.

Circle the **latest time** that William can leave London.

Leaves London	Arrives Paris
12:01	15:22
12:25	15:56
13:31	16:53
14:01	17:26
14:31	17:53
15:31	18:53
16:01	19:20

A **square** number and a **prime** number have a total of 22

What are the two numbers?

$$\begin{array}{ccc} \boxed{\phantom{00}} & + & \boxed{\phantom{00}} = 22 \\ \text{square} & & \text{prime} \\ \text{number} & & \text{number} \end{array}$$





# Reasoning at school and home

## What does it involve?

- **Thinking behind mathematics**
- **Making connections / Looking for patterns**
- **Application of facts and knowledge**
- **Ability to convince yourself and others**
- **Justifying**

The 'glue' behind the different elements of maths...



# Reasoning at school and home

## Why is it important?

- It requires us to evaluate
- It is a useful when choosing a problem-solving strategy
- It helps us draw logical conclusions
- To develop, describe and reflect on solutions
- Important real life skills
- Learning to think about thinking (practice thinking skills)
- To increase our arithmetic/knowledge/fluency skills



# QUESTION STEMS TO HELP

- Explain how...
- Why does...
- Prove that...
- How do you know that...
- Is it true that...
- What else do you know...
- Can you convince me that...



# ANSWER SCAFFOLDS TO HELP

- I think this because ...
- If this is true then ...
- I know that the next one is ... because ...
- This can't work because ...
- When I tried xxxx I noticed that...
- The pattern looks like ...
- All the numbers begin with ...
- Because xxxx then I know xxxx
- This won't work because ...



# IN THE CLASSROOM

Andy says 'I can use my three times table to work out  $180 \div 3$ '. Show what Andy could do to work out this calculation.

**Convince me**, that 8 will be in the following sequence

0, 0.4, 0.8, 1.2,  
1.6, 2.0, 2.4

Marcia scored 45 out of 80 in a test. Johnathon scored 45%. Marcia says she scored more. Is she correct? Can you prove it?

Is it true that if you add three consecutive numbers the answer is a multiple of 3. Explain why

$$\begin{aligned}1 + 2 + 3 &= 6 \\2 + 3 + 4 &= 9 \\3 + 4 + 5 &= 12\end{aligned}$$

# IN THE CLASSROOM

**Convince me,** *that 8 will be in the following sequence.*

0, 0.4, 0.8, 1.2, 1.6, 2.0, 2.4

**All the numbers** *increase by 0.4 each time.* **When I tried** *writing out the whole sequence by adding 0.4 each time, I* **noticed** *that the number 8 is in it.*

**Can you prove that** *without writing it out?*



# IN THE CLASSROOM

**Because I know** that 80 is a multiple of 4 ( $20 \times 4$ ), **I can use this information to say** 8 is a multiple of 0.4. As the sequence increases by 0.4, I know 8 will feature.

**I noticed that** the sequence starts at 0 and includes 2. This means every second whole number will feature in it. **If this is true, then I know** every even number appear in it. Therefore 8 will appear.



# IN THE CLASSROOM

When you add 3 consecutive numbers, **is it true** that result is always a multiple of 3? **Why do you think that is?**

**I think this this rules works because** *you are adding 3 numbers: one number is one less than the middle number, one number is one more. **Therefore**, it is like adding the middle number 3 times. In other words, multiplying the middle number by 3.*





# IN THE CLASSROOM

- **2 bananas, 1 apple and 1 orange cost £1.00**  
**Bananas cost 30p each. Apples and oranges cost the same.**
- **What else do we know?**



# THE REASONING CULTURE

- Take risks, children not afraid to make 'mistakes'
- Time to talk throughout maths
- Encouraging children to persevere
- Open ended questions, with less limits



# Maths Rockets

## Rocket Card Year 5

Challenge 1:	Challenge 2:	Challenge 3:	Challenge 4:	Challenge 5:
a) Adding fractions with the same and different denominators	a) Subtracting fractions with the same and different denominators	a) Multiplying pairs of fractions b) Multiplying fractions by a whole number	a) Dividing pairs of fractions b) Dividing pairs of fractions by a whole number	a) Mixed fraction problems
<p><b>Congratulations! You have completed all of the KS1 and KS2 Mental Maths objectives. Now it is time for you to face your toughest challenge... written arithmetic!</b></p>				
<p><b>Captain</b> Mixed tests for all steps</p>				
<p><b>Chief Navigator</b> Mixed steps 1-3</p>		<p><b>Pilot</b> Mixed steps 4-6</p>		<p><b>First Mate</b> Mixed steps 7-9</p>
<p><b>Step 8</b></p> <p>a) Recognise and use square numbers up to <math>12 \times 12</math> (i.e. <math>4^2 = 4 \times 4 = 16</math>)            b) Use knowledge of fractions to find 10%, 20%, 25% and 50% of a number with the answer being a whole number (i.e. 25% = <math>\frac{1}{4}</math>, so 25% of 80 = <math>80 \div 4</math>)            c) Mentally identify whether a number is a prime number to 50 (i.e. use knowledge of times tables)</p>				
<p><b>Step 7</b></p> <p>a) Use times table facts to divide other numbers mentally (i.e. <math>640 \div 8 = 7, 7.2 \div 0 = ?</math>)            b) Extend simple linear sequences for fractions and decimals (i.e. 0.7, 1.4, 2.2... 1.34, 2, 2.34...)            c) Use knowledge of place value to double and halve decimal numbers (i.e. double 4.2, half of 12.0)</p>				
<p><b>Step 6</b></p> <p>a) Count forwards in multiples of 25, including not starting at zero (i.e. 200, 225, 250...)            b) Use times table facts to multiply other numbers mentally (i.e. <math>7 \times 0.8 = 5, 50 \times 0 = ?</math>)            c) Find complements of 1 (i.e. <math>0.73 + 0.2 = 1</math>)</p>				
<p><b>Step 5</b></p> <p>a) Count forwards in multiples of 50, including not starting at zero (i.e. 350, 400, 450...)            b) Count forwards in all multiples of 2, 3, 4, 5, 6, 7, 8, 9 and 10 (i.e. 7, 14, 21...)            c) Use times table facts to divide larger whole numbers mentally (i.e. <math>480 \div 0, 02 + 4</math>)</p>				
<p><b>Step 4</b></p> <p>a) Count forwards and backwards in steps of thousands to 1,000,000 (i.e. 4,000, 8,000, 12,000... 7,000, 14,000...)            b) Count forwards and backwards with positive and negative whole numbers (i.e. the temperature is <math>12^\circ\text{C}</math> in London and <math>-15^\circ\text{C}</math> in Moscow. What is the difference?)            c) Recall division facts for all times tables to <math>12 \times 12</math> (consolidation from years 1-4)*</p>				
<p><b>Step 3</b></p> <p>a) Use times table facts to multiply larger numbers mentally (i.e. <math>15 \times 7 = 10 \times 7 + 5 \times 7, 70 \times 0</math>)            b) Given a number, add and subtract 10/100/1,000 to 100,000 (i.e. what is 1,000 more than 23,751?)            c) Count forwards and backwards in steps of tens of thousands to 1,000,000 (i.e. 30,000, 00,000, 00,000)</p>				
<p><b>Step 2</b></p> <p>a) Divide numbers by 10 and 100 to 2 decimal places (i.e. <math>34.2 \div 100, 1.5 \div 100</math>)            b) Add three 2-digit numbers together mentally (i.e. <math>50 + 25 + 10</math>)            c) Double and halve 3 and 4-digit numbers using knowledge of partitioning/place value (i.e. double 240 = double 200 + double 40 + double 0, Half of 528 = half of 500 + half of 20 + half of 8)</p>				
<p><b>Step 1</b></p> <p>a) Recall multiplication facts for all times tables to <math>12 \times 12</math> (consolidation from years 1-4)*            b) Find all factor pairs for a given number (i.e. factors of 24 are 1, 2, 3, 4, 6, 8, 12 and 24)            c) Multiply numbers by 10 and 100 to 2 decimal places (i.e. <math>2.45 \times 100, 0.12 \times 100</math>)</p>				

## Rocket Card Year 6

### WRITTEN ARITHMETIC

#### Place Value and the Number System

- Read and write all numbers to 10,000,000 in figures and words
- Order and compare numbers to 10,000,000 (i.e. order the following numbers from smallest to largest...)
- Determine the value of each digit in a number to 10,000,000 (i.e. what is the value of the digit 1 in the number 412,589?)
- Read and write numbers to 3 decimal places
- Determine the value of each digit in a decimal number to 3 decimal places
- Round a whole number to the nearest 10, 100 and 1,000
- Round a decimal number to the nearest tenth and hundredth
- Add and subtract negative and positive numbers (i.e.  $-7 + 15 = 2$ )
- Find the difference between a negative and a positive number (i.e. the temperature is  $10^\circ\text{C}$  in London and is  $-27^\circ\text{C}$  in Moscow. What is the difference?)
- Recognise and use square numbers up to  $12^2$
- Recognise and use cube numbers up to  $10^3$
- Find all prime numbers to 100
- Count forwards and backwards in any given multiple, including decimals (i.e. 0.3, 0.6, 0.9, 1.2...)
- Identify all of the factors of a given number and check whether a number is a factor (i.e. the factors of 72 are 1, 2, 3, 4...)

#### Fractions, decimals and percentages

- Add fractions with the same denominator (i.e.  $\frac{3}{4} + \frac{3}{4}$ )
- Add fractions with different denominators (i.e.  $\frac{3}{4} + \frac{3}{4}$ )
- Subtract fractions with the same denominator (i.e.  $\frac{3}{4} - \frac{3}{4}$ )
- Subtract fractions with different denominators (i.e.  $\frac{3}{4} - \frac{3}{4}$ )
- Multiply a fraction by a fraction (i.e.  $\frac{3}{4} \times \frac{3}{4}$ )
- Multiply a fraction by a whole number (i.e.  $\frac{3}{4} \times 3$ )
- Divide a fraction by a fraction (i.e.  $\frac{3}{4} \div \frac{3}{4}$ )
- Divide a fraction by a whole number ( $\frac{3}{4} \div 4$ )
- Find a fraction of an amount when the numerator is more than 1 (i.e.  $\frac{3}{4}$  of £128)
- Solve mixed number fraction problems (i.e.  $2\frac{3}{4} + \frac{3}{4}$ )
- Compare fractions by identifying which is larger or smaller (i.e. find common denominators)
- Identify fraction bonds to 1 (i.e.  $\frac{3}{4} + \frac{1}{4} = 1$ )
- Find equivalent fractions of a given fraction
- Reduce fractions to their simplest form
- Convert fractions to decimals and percentages
- Find percentages of a given number (i.e. 30% of 450)

#### The Four Operations

- Add two or more whole numbers to 1,000,000
- Add two or more decimal numbers to 3 decimal places
- Add numbers that contain a different number of digits (i.e.  $0 + 3.20$ )
- Add 10/100/1,000 to any number to 10,000,000
- Subtract two or more whole numbers to 1,000,000
- Subtract two or more decimal numbers to 3 decimal places
- Subtract numbers that contain a different number of digits (i.e.  $9 - 2.72$ )
- Subtract 10/100/1,000 from any number to 10,000,000
- Multiply a number by a single digit (i.e.  $437 \times 0$ )
- Multiply a number by a 2-digit number (i.e.  $200 \times 27$ )
- Multiply numbers that contain decimals (i.e.  $45.0 \times 0$ )
- Multiply any number by 10/100/1,000, including decimals to 3 decimal places (i.e.  $112 \times 100, 0.067 \times 10$ )
- Divide a number by a single digit (i.e.  $448 \div 8$ )
- Divide a number by a 2-digit number (i.e.  $1513 \div 17$ )
- Divide numbers that contain decimals (i.e.  $£40.80 \div 0$ )
- Divide any whole number to find a remainder
- Divide any number by 10/100/1,000, including decimals to 3 decimal places (i.e.  $45.07 \div 100$ )
- Solve problems using knowledge of BODMAS (i.e.  $2 + 1 \times 3 = 5$ , and  $(2 + 1) \times 3 = 9$ )
- Calculate the mean average of a set of data

#### Algebra

- Find the value of the letter in an algebraic equation (i.e.  $4y + 3 = 23$ , what is  $y$ ?)
- Solve an algebraic equation when a value is given (i.e.  $t = 3$ , what is  $7t - 0$ ?)
- Find pairs of numbers that satisfy an equation with 2 unknowns (i.e.  $y \times t = 0$ , what could  $y$  and  $t$  be?)
- Continue missing number patterns (i.e. 0.3, \_\_, 0.0...)

#### Measurement

- Convert between different units of distance (i.e. mm, cm, m, km)
- Convert between different units of weight (i.e. g and kg)
- Convert between different units of capacity (i.e. ml and L)
- Use knowledge of time facts to solve time problems (i.e. order the following from smallest to largest: 2 fortnights, 20 days, April, 648 hours)

# Fractions of quantities

Divide by the bottom and then times by the top.

Question: What is  $\frac{3}{4}$  of £48?

$$£48 \div 4 = £12$$

$$£12 \times 3 = £36$$

$$\frac{1}{4} \text{ of } 160 =$$

$$\frac{3}{4} \text{ of } £96 =$$

$$\frac{5}{8} \text{ of } 256 =$$

$$\frac{3}{5}$$

← numerator

← denominator



# Equivalent Fractions

What you do to the bottom you do to the top.

(Always  $\div$  or  $\times$ )

$\frac{2}{10}$	$\frac{1}{5}$
$\frac{2}{8}$	$\frac{1}{4}$
$\frac{9}{12}$	$\frac{3}{4}$
$\frac{5}{15}$	$\frac{1}{3}$
$\frac{10}{12}$	$\frac{5}{6}$

$$\frac{1}{4} \xrightarrow{\times 6} \frac{6}{24}$$

**=**

$$\frac{1}{4} \xrightarrow{\times 6} \frac{6}{24}$$



# Simplifying Fractions

Look at the numbers in your fraction. What can you divide both numbers by? Keep on doing so until you can no longer make the fraction smaller.

$\frac{5}{20}$	
$\frac{6}{9}$	
$\frac{9}{12}$	
$\frac{4}{8}$	
$\frac{8}{10}$	



# Comparing Fractions

	< > or =	
$\frac{1}{3}$		$\frac{4}{6}$
$\frac{3}{6}$		$\frac{1}{2}$
$\frac{3}{10}$		$\frac{1}{5}$
1 whole		$\frac{5}{5}$
$\frac{3}{4}$		$\frac{5}{8}$
$\frac{5}{6}$		$\frac{11}{12}$

When deciding which fraction is bigger, you need to make the number at the bottom the same first.



# Adding Fractions

$$\frac{2}{3} + \frac{1}{6} = \boxed{\phantom{000}}$$

$$\frac{1}{2} + \frac{1}{4} = \boxed{\phantom{000}}$$

$$\frac{1}{4} + \frac{3}{8} = \boxed{\phantom{000}}$$

$$\frac{1}{3} + \frac{1}{6} = \boxed{\phantom{000}}$$

$$\frac{1}{8} + \frac{1}{2} = \boxed{\phantom{000}}$$

Before solving, you need to make both fractions have the same number at the bottom by either  $\times$  or  $\div$ .

$$\frac{2}{15} + \frac{3}{5} = ?$$

$$\frac{2}{15} + \frac{3 \times 3}{5 \times 3}$$

$$\frac{2}{15} + \frac{9}{15} = \frac{2 + 9}{15} = \frac{11}{15}$$

Same





# Subtracting Fractions

$$\frac{1}{2} - \frac{1}{4} = \square$$

$$\frac{1}{3} - \frac{1}{6} = \square$$

$$\frac{2}{3} - \frac{1}{6} = \square$$

$$\frac{3}{4} - \frac{1}{2} = \square$$

$$\frac{5}{6} - \frac{1}{3} = \square$$

Before solving, you need to ensure both fractions have the same number at the bottom by either  $\times$  or  $\div$ .

$$\frac{11}{15} - \frac{3}{5} = ?$$

$$\frac{11}{15} - \frac{3 \times 3}{5 \times 3}$$

$$\frac{11}{15} - \frac{9}{15} = \frac{11 - 9}{15} = \frac{2}{15}$$

Same



# Multiplying Fractions – 1

$$\frac{1}{4} \times \frac{1}{2} =$$

$$\frac{1}{2} \times \frac{1}{3} =$$

$$\frac{1}{5} \times \frac{1}{2} =$$

$$\frac{2}{8} \times \frac{1}{2} =$$

Times the top numbers together and times the bottom numbers together.

Multiply the numerators

$$\frac{2}{5} \times \frac{3}{4} = \frac{6}{20}$$

Multiply the denominators

$$\frac{2}{5} \times \frac{3}{4} = \frac{6}{20}$$

Reduce the fraction if necessary

$$\frac{6}{20} = \frac{3}{10}$$



# Multiplying Fractions – 2

Example:

$$3 \times \frac{2}{9}$$

Multiply tops and bottoms:

$$\frac{3}{1} \times \frac{2}{9} = \frac{3 \times 2}{9} = \frac{6}{9}$$

Simplify:

$$\frac{6}{9} = \frac{2}{3}$$

Times the whole number by the top number of the fraction and then simplify.

1 a.  $\frac{1}{4} \times 5 =$

1 b.  $\frac{2}{4} \times 2 =$

2 a.  $\frac{2}{6} \times 6 =$

2 b.  $3 \times \frac{2}{12} =$



# Dividing Fractions – 1

$$\begin{aligned}\frac{2}{3} \div \frac{4}{5} &= \frac{2}{3} \times \frac{5}{4} \\ &= \frac{2 \times 5}{3 \times 4} \\ &= \frac{10}{12} \\ &= \frac{5}{6}\end{aligned}$$

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Flip the second fraction and then change the sum into a multiplication problem.

Multiply the top 2 numbers and then the bottom 2 numbers together.

Simplify.

$$\frac{1}{4} \div \frac{1}{2} =$$

$$\frac{1}{8} \div \frac{1}{4} =$$

$$\frac{3}{8} \div \frac{3}{4} =$$



# Dividing Fractions – 2

$$\frac{3}{4} \div 3 =$$

$$\frac{1}{4} \div 2 =$$

$$\frac{4}{6} \div 2 =$$

$$\frac{2}{3} \div 4 =$$

$$\frac{1}{4} \div 2 =$$

$$\frac{1}{4 \times 2} = \frac{1}{8}$$

Move the number that you are dividing by to the bottom of the fraction and change the  $\div$  to  $\times$ .



# EXPECTATIONS...



5WT	5ME	5EE
<p>Count forwards and backwards in steps of powers of 10 for any given number to 1,000, 000 in steps of 1,000 and 10 000.</p>	<p>Add and subtract numbers mentally with increasingly large numbers The pupil can work out mentally <math>23,712 - 1600 = 22,112</math></p>	<p>The pupil can solve problems continuing a set of positive and negative numbers including through 0 e.g. does the sequence <math>-11, -6, -1 \dots</math> pass through 91?</p>
<p>Count in multiples 6s, 9s, 3s, 8s, 2s and 4s.</p>	<p>Round any number up to 1,000,000, to the nearest 10, 100, 1000, 10,000 and 100 000 including decimals to two decimal places and to answer calculation questions in context.</p>	<p>Divide whole numbers using formal methods of division including by 2 digit numbers</p>
<p>Find equivalent fractions for <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{3}{4}</math>, in sequence.</p>	<p>Understand percent means number of parts per 100, e.g. 25% 50%</p>	<p>Decide the best way to present given data</p>
<p>To solve calculation problems involving factors, multiples, squares and cubes e.g. I am thinking of a two-digit number. It is a square number. It is a multiple of 12. What number is it?</p>	<p>Recall square numbers and cube numbers and the notation for them e.g. The pupil can identify whether a given number is a square number or cube number up to 100, interpret <math>6^2</math> as <math>6 \times 6 = 36</math> and <math>2^3</math> as <math>2 \times 2 \times 2 = 8</math>.</p>	<p>Recall square numbers and cube numbers and the notation for them e.g. The pupil can sort the numbers below 200 into a Venn diagram with two sets: square numbers and cube numbers. The pupil can also interpret <math>3^4</math> as <math>3 \times 3 \times 3 \times 3 = 81</math> and extend the idea to higher powers.</p>

6WT	6ME	6EE
<p>To add and subtract numbers mentally with increasingly large numbers including decimals to 2 places</p>	<p>To multiply whole numbers up to 4 digits (including decimals) by a one- or two- digit number using compact long multiplication.</p>	<p>To divide numbers up to 4 digits (including decimals) by a two-digit number using the formal written method of long division (with remainders interpreted as fractions and decimals).</p>
<p>Can count backwards and forwards in steps of 100,000, 10,000, 1000, 100, 10</p>	<p>To use knowledge of the order of operations e.g. <math>3 - 5 \times 8 + 1 = -36</math></p>	<p>Associate a fraction with division and calculate decimal fraction equivalents (<math>0.375 = 3/8</math>)</p>
<p>To solve multi-step addition and subtraction problems in contexts, deciding on appropriate operations and methods.</p>	<p>To divide numbers up to 4 digits by a two-digit number using the formal written method of short or long division</p>	<p>To investigate possibilities of combinations of two variables (If you have <math>2x+5y</math>, what could the possible answers be?)</p>
<p>Add and subtract fractions with the same denominator</p>	<p>Find percentages of amounts e.g. 10%, 20%, 50%, 75%</p>	<p>Illustrate and name parts of circles (radius, diameter, and circumference) and know that the diameter is twice the radius.</p>



# Helping at Home...

Developing children's confidence and enjoyment of maths!!

- **Real life maths** – shopping, money, time, building and making things (e.g. cooking or crafts )
- **Practicing /playing games** with number facts (times tables, number bonds , Rocket Card Test)
- **Explaining** – encourage children to explain their answer



	10p	20p	50p	80p	90p	99p
Alpaca	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 10	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 20	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 50	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 80	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 90	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 99	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 100	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 110	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 120	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 130	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 140	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 150	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 160	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 170	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 180	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 190	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 200	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 210	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 220	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 230	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 240	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 250	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 260	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 270	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 280	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 290	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 300	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 310	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 320	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 330	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 340	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 350	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 360	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 370	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 380	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 390	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 400	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 410	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 420	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 430	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 440	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 450	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 460	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 470	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 480	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 490	85.00	85.00	85.00	85.00	85.00	85.00
Alpaca 500	85.00	85.00	85.00	85.00	85.00	85.00



# Resources and support

Website	Summary
<a href="http://uk.mathletics.com/signin/">http://uk.mathletics.com/signin/</a>	All children have a Mathletics login. It covers all areas of Maths that the children need to know in Years 5 and 6
<a href="http://www.crickweb.co.uk/">http://www.crickweb.co.uk/</a>	Curriculum games and activities
<a href="http://www.topmarks.co.uk/">http://www.topmarks.co.uk/</a>	Curriculum games and activities. Click on ' <b>Learning Games</b> ' and then ' <b>7-11</b> '
<a href="http://resources.woodlands-junior.kent.sch.uk/maths/">http://resources.woodlands-junior.kent.sch.uk/maths/</a>	Maths games and activities.
<a href="http://sats.highamstjohns.com/">http://sats.highamstjohns.com/</a>	A few Maths worksheets/questions that can be used as practice. See the ' <b>Numeracy</b> ' and ' <b>Past Papers</b> ' sections.
<a href="http://www.tes.com/">www.tes.com/</a>	A large range of FREE curriculum resources once registered.

Please note: You can find sample SATs papers and general resources online by typing 'KS2 SATs papers' into



Further SATs and general curriculum resources can be found on



# Resources and support

## Recommended reading

- There are numerous study guides available that are suitable in helping to support home study. Please ensure that they are aligned with the **National Curriculum 2014**.
- You can find revision guides online through Amazon/WHSmith/Waterstones etc. or through any good book shop.
- There is also an abundance of ready made resources for FREE online if you take time to research.



**Collins**

**Also, ask me!!!**