Year 5

Mastery Overview
Spring

MathsHUBS
White Rose

Year 5

SOL Overview

As well as providing term by term overviews for the new National Curriculum, as a Maths Hub we are aiming to support primary schools by providing more detailed Schemes of Learning, which help teachers plan lessons on a day to day basis.

The following schemes provide exemplification for each of the objectives in our new term by term overviews, which are linked to the new National Curriculum. The schemes are broken down into fluency, reasoning and problem solving, which are the key aims of the curriculum. Each objective has with it examples of key questions, activities and resources that you can use in your classroom. These can be used in tandem with the mastery assessment materials that the NCETM have recently produced.

In addition to this we have also creates our own network area where teachers form across the country can share their lesson plans and resources that are linked to our schemes.

We hope you find them useful. If you have any comments about this document or have any ideas please do get in touch.

The White Rose Maths Hub Team

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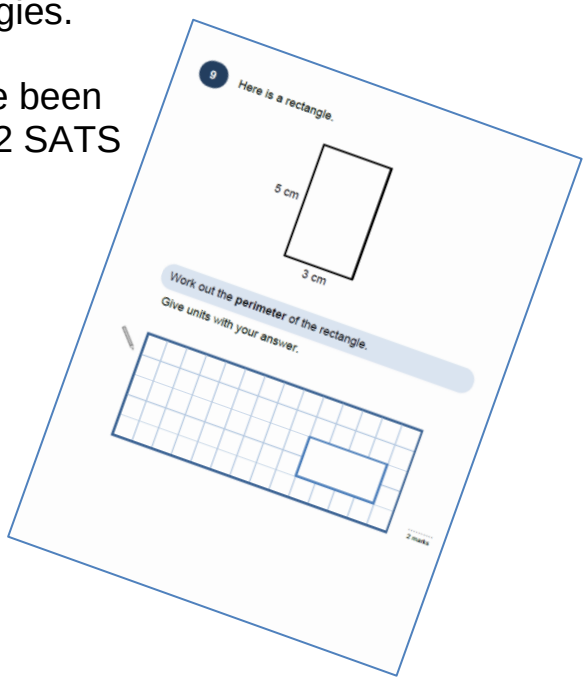
Assessment

Alongside these curriculum overviews, our aim is also to provide a free assessment for each term's plan. Each assessment will be made up of two parts:

Part 1: Fluency based arithmetic practice
Part 2: Reasoning based questions

You can use these assessments to determine gaps in your students' knowledge and use them to plan support and intervention strategies.

The assessments have been designed with new KS2 SATS in mind. All of the assessments will be ready by 30 November 2015.



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Teaching for Mastery

These overviews are designed to support a mastery approach to teaching and learning and have been designed to support the aims and objectives of the new National Curriculum.

The overviews:

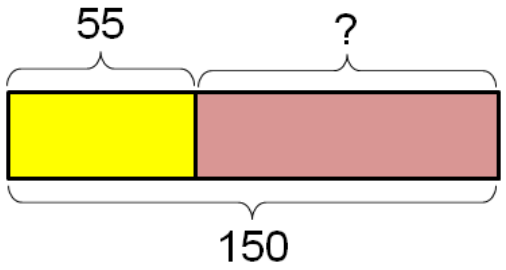
- have number at their heart. A large proportion of time is spent reinforcing number to build competency
- ensure teachers stay in the required key stage and support the ideal of depth before breadth.
- ensure students have the opportunity to stay together as they work through the schemes as a whole group
- provide plenty of time to build reasoning and problem solving elements into the curriculum.

Concrete – Pictorial – Abstract

As a hub we believe that all students, when introduced to a key new concept, should have the opportunity to build competency in this topic by taking this approach.

Concrete – students should have the opportunity to use concrete objects and manipulatives to help them understand what they are doing.

Pictorial – students should then build on this concrete approach by using pictorial representations. These representations can then be used to reason and solve problems.



An example of a bar modelling diagram used to solve problems.

Abstract – with the foundations firmly laid, students should be able to move to an abstract approach using numbers and key concepts with confidence.

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Frequently Asked Questions

We have bought one of the new Singapore textbooks. Can we use these curriculum plans?

Many schools are starting to make use of a mastery textbook used in Singapore and China, the schemes have been designed to work alongside these textbooks. There are some variations in sequencing, but this should not cause a large number of issues.

If we spend so much time on number work, how can we cover the rest of the curriculum?

Students who have an excellent grasp of number make better mathematicians. Spending longer on mastering key topics will build a student's confidence and help secure understanding. This should mean that less time will need to be spent on other topics.

In addition schools that have been using these schemes already have used other subjects and topic time to teach and consolidate other areas of the mathematics curriculum.

My students have completed the assessment but they have not done well.

This is your call as a school, however our recommendation is that you would spend some time with the whole group focussing on the areas of the curriculum that they don't appear to have grasped. If a couple of students have done well then these could be given rich tasks and deeper problems to build an even deeper understanding.

Can we really move straight to this curriculum plan if our students already have so many gaps in knowledge?

The simple answer is yes. You might have to pick the correct starting point for your groups. This might not be in the relevant year group and you may have to do some consolidation work before.

These schemes work incredibly well if they are introduced from Year 1 and continued into Year 2, then into Year 3 and so on.

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NCETM Mastery Booklets

In addition to the schemes attached the NCETM have developed a fantastic series of problems, tasks and activities that can be used to support 'Teaching for Mastery'. They have been written by experts in mathematics.

It will also give you a detailed idea of what it means to take a mastery approach across your school. Information can be found on the link below.

https://www.ncetm.org.uk/resources/46689

WRMH Primary Network

over the past 12 months we have been working with a company called MyFlo to develop a free online platform where teachers from across our region (and wider) can share their own resources and lesson plans based on this new curriculum. All our overviews, schemes and assessment materials will be made available on the MyFlo network.

Everyone Can Succeed

As a Maths Hub we believe that all students can succeed in mathematics. We don't believe that there are individuals who can do maths and those that can't. A positive teacher mindset and strong subject knowledge are key to student success in mathematics.

More Information

If you would like more information on 'Teaching for Mastery' you can contact the White Rose Maths Hub at mathshub@trinityacademyhalifax.org

We are offering courses on:

- Bar Modelling
- Teaching for Mastery
- Year group subject specialism intensive courses – become a Maths expert.

Our monthly newsletter also contains the latest initiatives we are involved with. We are looking to improve maths across our area and on a wider scale by working with other Maths Hubs across the country.

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Term by Term Objectives

Year 5

Year 5 Overview

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value			Number: Addition and Subtraction			Number: Multiplication and Division				Statistics	
Spring	Number: Fractions					Number: Decimals			Number: Percentages			
Summer	Geometry: Angles		Geometry: Shapes		Geometry: Position and Direction	Measurement- Converting Units		Number: Prime Numbers	Perimeter and Area	Measures volume		

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Term by Term Objectives

Year 5

Year Group	Y5	Term	Spring

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
<u>Number: Fractions</u> Compare and order fractions whose denominators are multiples of the same number. Identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths. Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number [for example $\frac{2}{5}+\frac{4}{5}=\frac{6}{5}=1\frac{1}{5}$]. Add and subtract fractions with the same denominator and denominators that are multiples of the same number. Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. Read and write decimal numbers as fractions [for example 0.71 = $\frac{71}{100}$]. Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.					<u>Number: Decimals</u> Read, write, order and compare numbers with up to three decimal places. Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. Round decimals with two decimal places to the nearest whole number and to one decimal place. Solve problems involving number up to three decimal places. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.			<u>Number: Percentages</u> Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal. Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25			Time at the beginning or end of the term for consolidation , gap filling, seasonal activities, assessments , etc.

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Term by Term Objectives

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	National Curriculum Statement	All Students		
		Fluency	**Reasoning**	**Problem Solving**
Fractions	Compare and order fractions whose denominators are multiples of the same number.	• Use **< > or =** to make the statement below correct $\frac{3}{4}$ $\frac{9}{12}$ • Order these fractions $\frac{2}{5}, \frac{5}{15}, \frac{3}{10}$ • Fill in the missing fraction $\frac{1}{3} = \frac{2}{\quad} = \frac{3}{9}$	• **Sometimes, always, never** If two denominators are different multiples of the same number then you can simplify the bigger number to make them the same e.g. $\frac{3}{4}$ $\frac{9}{12}$ $\frac{9}{12}$ can be simplified to $\frac{3}{4}$ • Paul thinks denominators with bigger numbers are bigger fractions. Prove to him that $\frac{1}{4}$ is bigger than $\frac{1}{8}$ Use a diagram/drawing/ concrete materials.	• Cut out lots of different fractions. Ask children in pairs to sort them into equivalent piles. Ask children to record three more fractions – an equivalent fraction, a bigger fraction and a smaller fraction. • **Fraction trail** On a grid, write 12 different fractions where all denominators are a different multiple of the 4 times table. Player A goes first and chooses a fraction, Player B finds a smaller fraction, Player A finds a bigger fraction and so on. Whoever cannot find a fraction first loses. $\frac{17}{20}$ $\frac{17}{32}$ $\frac{2}{16}$ $\frac{10}{28}$ $\frac{2}{4}$ $\frac{20}{36}$ $\frac{18}{44}$ $\frac{35}{48}$ $\frac{5}{8}$ $\frac{2}{12}$ $\frac{22}{40}$ $\frac{23}{24}$

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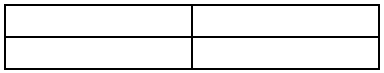
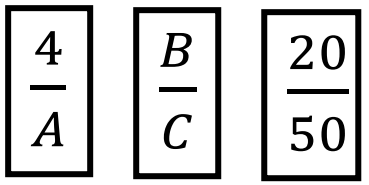
Term by Term Objectives

Year 5

	National Curriculum Statement	All Students		
		Fluency	**Reasoning**	**Problem Solving**
Fractions	Identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths.	• Find 5 equivalent fractions of $\frac{3}{4}$ • Colour $\frac{6}{8}$ of this shape  • Complete the sentences: One eighth is a half of one _____ One sixth is a half of one _____ One quarter is a half of one _____	• Which fraction is the odd one out? Is this the only option? Explain your answers. $\frac{4}{6}$ $\frac{16}{24}$ $\frac{9}{12}$ $\frac{12}{18}$ $\frac{20}{30}$ • Martin thinks you can only simplify even numbered fractions because you keep on halving until you get an odd number. Do you agree? Explain why. • Is this statement true or false? Explain why. $\frac{3}{5} < \frac{11}{15}$	• Here are some fraction cards. All of the fractions are equal.  A + B = 16 Work out the value of C. • Find the value of the symbol ★ $\frac{1}{2} = \frac{1+5}{2+★}$

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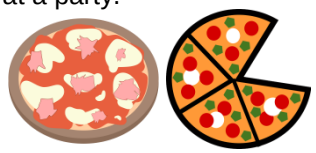
	National Curriculum Statement	All Students		
		Fluency	**Reasoning**	**Problem Solving**
Fractions	Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number [for example $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$].	• Convert these from mixed numbers to improper fractions: $3\frac{2}{5}$ $2\frac{1}{6}$ • A pizza has 8 slices. At a party, 2 full pizzas and 3 slices are left over. Write this as an improper fraction. • Pencils are packed 6 to a box. A teacher hands them out and has $\frac{15}{6}$ left. Write how many boxes she has left as a mixed number.	• **True or false** A mixed number is not a whole number. Explain why. • Spot and explain the mistake $\frac{13}{5} = 3\frac{3}{5}$ • This was the pizza left over at a party.  Each pizza was cut equally. Anna said, "If you add the $\frac{11}{5}$ we ate then there was 5 whole pizzas altogether." Do you agree? Explain why.	• For the school's sports day, a group of students prepared $21\frac{1}{2}$ litres of lemonade. At the end of the day they had $2\frac{5}{8}$ litres left over. How many litres of lemonade were sold? • If they sold the lemonade in 125ml glasses, which they sold at 30p each, how many glasses did they sell and how much did they make?

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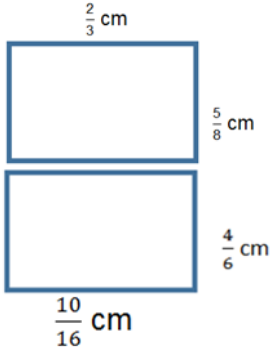
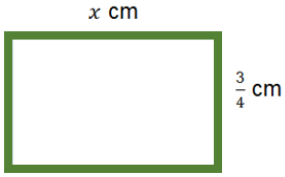
Fractions

National Curriculum Statement	All Students		
	Fluency	**Reasoning**	**Problem Solving**
Add and subtract fractions with the same denominator and denominators that are multiples of the same number.	• Calculate: $\frac{15}{6} - \frac{5}{3} =$ $\frac{24}{8} - \frac{15}{8}$ $\frac{2}{3} + \frac{8}{12}$ • Kelsey and Beth had a bag of sweets. Kelsey took $\frac{2}{7}$ and Beth took $\frac{6}{21}$ What was the difference between their amounts? • Fill in the missing fractions: $\frac{11}{7} + _ = \frac{18}{7}$ $\frac{18}{5} - _ = \frac{9}{10}$ $_ - \frac{4}{6} = \frac{1}{6}$	• Monica and Rachel are given this missing number problem: $_ - \frac{2}{4} = \frac{1}{4}$ Monica thinks the missing fraction is $\frac{3}{4}$ Rachel disagrees and thinks it's a different fraction. Explain why it could be both. • Joey eats $\frac{1}{3}$ of a cake. Ross says, "That means I have $\frac{7}{9}$ left to eat." Do you agree? Explain why. • Which perimeter is bigger? Give your answer as a mixed number. What do you notice?  	• The green rectangle has a perimeter of $\frac{22}{4}$ Work out the value of x.  • Beki bought 7L of paint from the shop. What variations of paint could she have bought? How many options can you find?

Colour	Amount in tin
Blue paint	$2\frac{1}{4}$L
Red paint	$\frac{3}{4}$L
White paint	$1\frac{1}{2}$L
Yellow paint	1L
Green paint	$\frac{1}{2}$L
Purple paint	$1\frac{3}{4}$L

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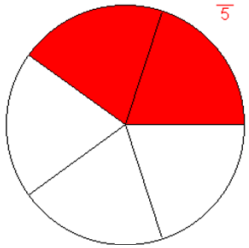
Fractions

National Curriculum Statement	All Students		
	Fluency	**Reasoning**	**Problem Solving**
Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.	• Complete the table: | Multiplication	Improper fraction	Mixed number | |---|---|---| | $3 \times \frac{4}{7}$ | $\frac{12}{7}$ | | | $2 \times \frac{5}{8}$ | | | | $6 \times \frac{3}{9}$ | | | • Use the diagram to find the answer. $3 \times \frac{2}{3}$ • Draw a diagram to represent $5 \times \frac{3}{7}$	• Tony says, "When I multiply a fraction by a whole number I turn the whole number into a fraction by adding $\frac{}{1}$ to it, for example, $2 \times \frac{6}{8}$ becomes $\frac{2}{1} \times \frac{6}{8}$". Does this make a difference? Does it help? Explain why. • Sally says, "I feel ok multiplying a fraction by a whole number but multiplying a mixed number confuses me." Can you write a set of instructions to help her understand? Include an example in your explanation.	• Abi says, "This diagram represents the children who passed their swimming test in a Year 5 class one week. The exact same data was collected from six other schools."  Write this data as an improper fraction and a mixed number. • Multiply these mixed numbers by 3 and place them in order from the biggest to smallest $2\frac{3}{5}$, $2\frac{6}{8}$, $2\frac{3}{7}$, $2\frac{1}{6}$ Did you think they would be in that order? Discuss why.

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Fractions

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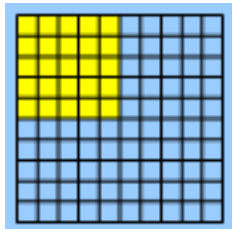
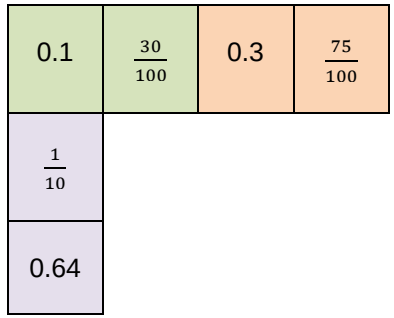
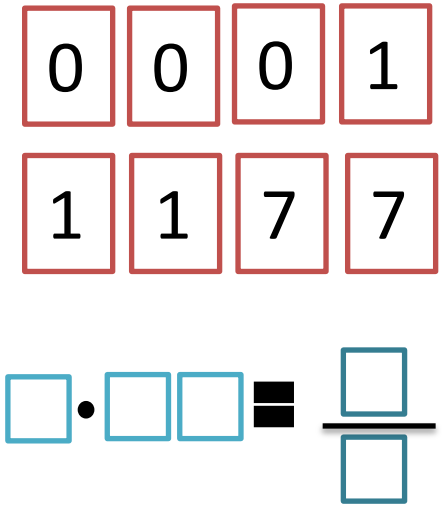
	Fluency	**Reasoning**	**Problem Solving**
Read and write decimal numbers as fractions [for example 0.71 = $\frac{71}{100}$].	• Fill in the blanks: $\square = \frac{65}{100}$ $\square = 0.88$ $0.2 = \square$ • Write the shaded part of this 100 square grid as a decimal number and a fraction.  • Match the decimal number to the equivalent fraction: 0.5 — $\frac{50}{100}$ 0.05 — $\frac{1}{2}$ 0.55 — $\frac{5}{100}$ 0.50 — $\frac{55}{100}$	• Rob is finding equivalent decimals and fractions. He writes: $\frac{30}{100} = 0.30$ Can both sides of the equals sign be simplified? Explain why. • **True or false?** Only percentages that are multiples of 10 can be simplified.	• Play decimal and fraction dominoes.  • Complete the statement below by only using these number cards. You can use these cards more than once. 

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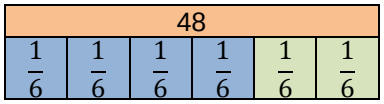
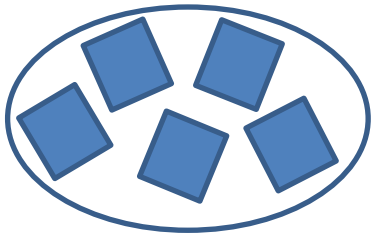
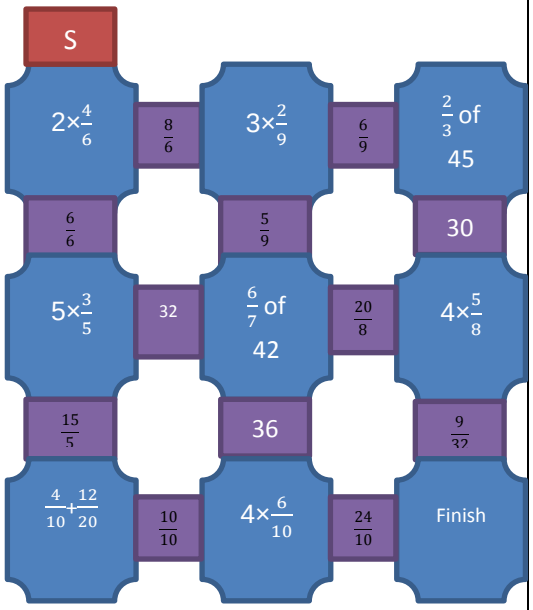
Fractions

National Curriculum Statement	All Students		
	Fluency	**Reasoning**	**Problem Solving**
Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	• There are 56 people playing rounders. $\frac{5}{8}$ of the players are girls. How many girls are playing? • In a class of 32 children, $\frac{3}{4}$ of them voted for maths as their favourite subject. How many children voted for something else? Give your answer as a whole number. • 48 people work at an office. On Monday, $\frac{4}{6}$ of them walked to work. How many people walked to work? Use the bar model to help you visualise the problem. 	• Ellie is solving this problem: Find $\frac{4}{6}$ of 24 She writes 16 down as the answer. Explain Ellie's mistake to her and write down instructions on how to solve this. • Mr Patel asks Emily to circle a quarter of some squares. She circles the following shapes.  Mr Patel says, "Well done! You are correct!" How many shapes were there to start with? Explain how you worked this out.	• 90 people were asked what their favourite colour was. 75 chose red. What fraction of people chose red? • Work your way through the maze by solving the questions. 

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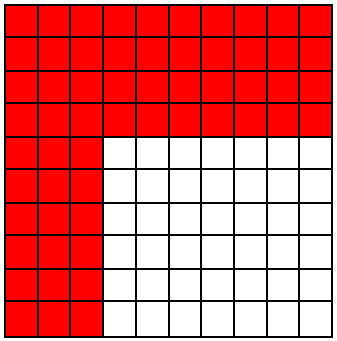
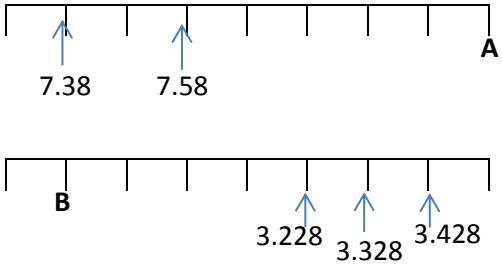
		Fluency	**Reasoning**	**Problem Solving**
Decimals	Read, write, order and compare numbers with up to three decimal places.	• Write the decimal number that is illustrated below:  • Write five and ninety-one tenths as a decimal number. • Insert **<** or **>** to make the statement below true. 0.06 ▭ 0.006	• Prove that 8.9 is smaller than 9.8 • What number is halfway between 2.7 and 3.4? Explain how you worked it out. • Which of the following is false? 1.009 < 1.09 1.249 > 1.25 1.35 > 1.053 Convince me! • Which of these numbers is closest in value to 0.2? 0.02 0.15 0.22 0.3 0.19 Explain why.	• Put a digit in each box so that the numbers are in order from smallest to largest. 6.1 ▭ ▭ .02 6.2 ▭ 6. ▭ 2 6. ▭ 2 • Here are two number lines.  Find the difference between the letters A and B. • 2 numbers have the difference of 1.427 and one of the numbers is 3.665 What is the other number? Are these the only possible numbers?

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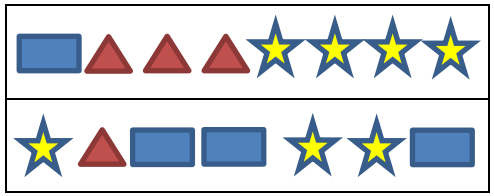
Decimals	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.	• What does the 3 represent in 14.253? • Put the following numbers in ascending order: six thousandths 0.5 $\frac{7}{1000}$ 1 tenth • Fill in the missing box: 2.645 = 2 + 0.6 + 0.04 + ▭	• Sophie thinks 1.007 is bigger than 1.01 because 7 is bigger than 1. Do you agree? Explain why. **1.007 > 1.01** • Convince me that $\frac{1}{8}$ is bigger than $\frac{1}{80}$	• Use all five cards below: 6 5 4 ● 0 What is the smallest number you can make? What is the largest number you can make? How many numbers can you make that are less than 0.5? • In this problem decimal numbers have been replaced with symbols. What is the value in each box if: $\frac{1}{10}$ = ★ $\frac{1}{100}$ = ▲ $\frac{1}{1000}$ = ▭ 

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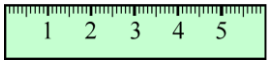
	National Curriculum Statement	All Students		
		Fluency	**Reasoning**	**Problem Solving**
Decimals	Round decimals with two decimal places to the nearest whole number and to one decimal place.	• Fill in the boxes: 18.5 rounded to ☐ is 19 12.34 rounded to the nearest whole number is ☐ ☐ rounded to the nearest tenth is 14.4 • Round each of these to the nearest tenth: 4.38 2.72 10.04 • The sales for a supermarket increased by 82.78% during December. Round this to the nearest tenth.	• Simon is measuring a box of chocolates with a ruler that measures in centimetres and millimetres.  He measures it to the nearest cm and writes the answer 28cm. What is the smallest length the box of chocolates could be? • A decimal number between 11 and 20 rounds to the same number when rounded to the nearest tenth and the nearest whole number? What could this be? Is there more than one option? Explain why.	• Rounded to the nearest 0.1, A is 3.5 and B is 3.0. What is the smallest possible difference between A and B? What is the largest possible difference? Explain your strategy to a partner. • Use 3 10-sided dice (0-9) to create a decimal number to 2 decimal places. Round this number to the nearest tenth. Are there any other decimal numbers you can make from these 3 digits? Do they round to the same tenth? What 3 numbers could you roll where more than 1 of the numbers would round to the same tenth? Why does this work? • What number with two or three decimal places round to 3.0 when rounded to the nearest tenth? Is the only option?

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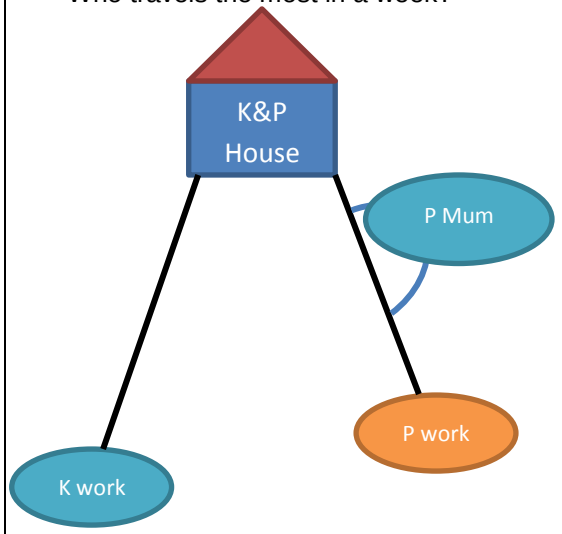
Year 5

	National Curriculum Statement	All Students		
		Fluency	**Reasoning**	**Problem Solving**
Decimals	Solve problems involving number up to three decimal places.	• Barney jumped 3.842 metres in a long jump competition. Sophie jumped 1.319 metres further. How far did Sophie jump? • Caroline took £20 to the shop. She spent £8.64 How much change did she have? • Naomi and her friends completed a 30 mile walk for charity over 3 days. On the first day, they walked 12.87 miles, on the second day they walked 16.55 miles. How many miles did they walk on the final day?	• If 3.985 – 1.999 = 1.986 **Explain why these are true or false.** 2.985 – 0.999 = 0.986 4.985 – 0.999 = 1.986 3.885 + 2.099 = 5.986 • Explain how to use the column method to work out whole numbers subtract decimal numbers e.g. 7 – 2.89 = • Charges for a bag of sweets are 3p per sweet and 15p for a bag. If I spent £3.75 on a bag of sweets, how many sweets did I buy? Explain your strategy to a partner. Did they use the same strategy? Which is easier?	• Kevin and Peter leave for work from the same house each day. Kevin travels 11.36 miles to get to work and Peter travels 10.29 miles every morning except Monday and Friday when he goes to his mum's house on his way. This adds an extra 3.4 miles to his journey. Who travels the most in a week?  • Use these digit cards to make the smallest and largest decimal number possible. Find the difference between them. e.g. 3.408 – 1.596 = 1 0 5 3 4 9 6 8

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Decimals

National Curriculum Statement	All Students		
	Fluency	**Reasoning**	**Problem Solving**
Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.	• Complete the grid: | | ×100 | ÷1000 | ×10 | |---|---|---|---| | 365 | | | | | 2669 | | | | | 12 | | | | • Fill in the boxes: ☐ × 100 = 38 56 ☐ = 5.6 0.8 x 1000 = ☐ • Some facts have been cut up. Work with a partner to put them back together. e.g. 74 ÷ 10 = 7.4 **100** **31** **×100** **÷1000** **3100** **=0.031** **÷100** **31** **= 1**	• **True or false?** When you multiply whole and decimal numbers by 10, 100 or 1000, you just add noughts on to the end. • If 5 x 4 = 20 Explain why these facts are true without working them out: 0.5 × 4 = 2 200 ÷ 4 = 50 0.4 × 0.5 = 0.2	• Put these calculations in order from smallest to biggest: 100 x 540 5.4 x 1000 5400 ÷ 10 5400 ÷ 1000 540 ÷ 10 • Using a number from column A, an operation from B and a number from C, how many ways can you find to make 70? (There are more than 4 ways!) | A | B | C | |---|---|---| | 7 | X | 1 | | 70 | | 10 | | 700 | ÷ | 100 | | 7000 | | 1000 |

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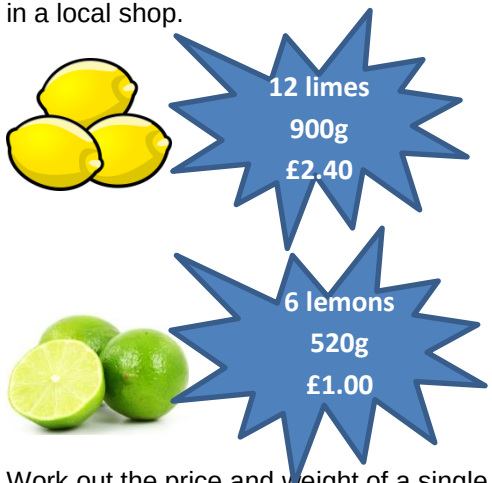
	National Curriculum Statement	All Students		
		Fluency	**Reasoning**	**Problem Solving**
Decimals	Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.	• A shop sold 6 bottles of water for £2.89. Each bottle was 1.5L. She bought 27L of water. How much money did she spend? • The flight from London to Alicante is 1465km the flight from Manchester is 289km longer. How long is the flight from Manchester to Alicante? • A family of four spent £1517.56 on a holiday. If split equally, how much would it cost each person? • Raisins are £1.45 for a packet. I have £10 to spend on raisins. What is the biggest number of packets I can buy?	• These are being measured. What unit of measurement should they be measured in. Explain why. Glass of milk Walking up 25 steps The distance from Edinburgh to Cornwall • Annie is adding up these mass values: 1kg + 343g + 700g She does this calculation: 100 343 + 700 1143 Explain her mistake.	• James is making buns for his friend's birthday. He finds a recipe on the internet for 20 people. The ingredients he needs are: *200g caster sugar* *200g butter* *5 eggs* *200g self-raising flour* *2.5g baking powder* *15ml milk* He only wants to make 12. Write the list of ingredients with the amount he needs of each item. • These lemons and limes are sold in a bag in a local shop.  Work out the price and weight of a single lemon and a single lime.

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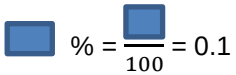
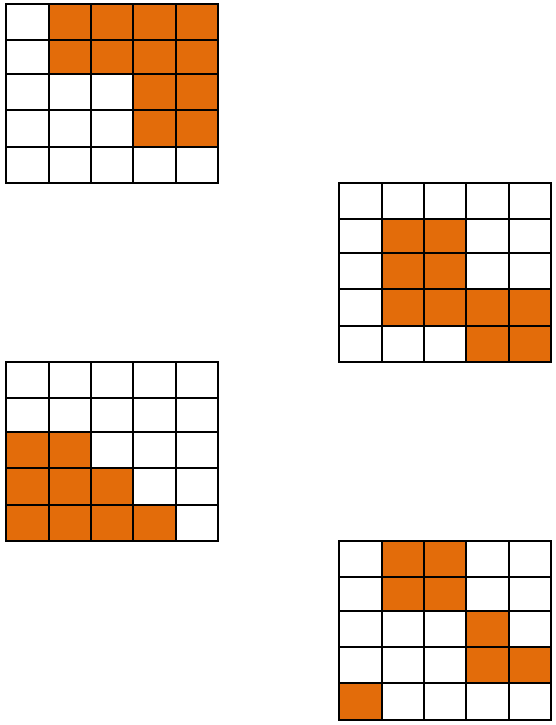
Percentages

National Curriculum Statement	All Students		
	Fluency	**Reasoning**	**Problem Solving**
Recognise the percent symbol (%) and understand that percent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal.	• There are 100 malteasers in a bag. 56 were eaten. How many are left? Write this as a fraction and as a decimal. • There are 200 lego pieces in a box. Theo uses 114 of them to build a robot. Write the amount he used as a percentage out of 100 • Fill in the missing boxes to make the statement true: 	• Clare reads 150 pages of her 500 page book. She says, "I have $\frac{350}{500}$ pages left to read." Can she write this as a percentage out of 100? Explain why. • **True or false?** You can write 12.5% as a decimal Explain your answer. • Lilly has a 100 square grid. She colours in 25% of them and says, "I have coloured in $\frac{1}{4}$" Is she right? Explain why.	• This 50 square grid showing a percentage out of 100 has been cut up. Work out the percentage from the pieces below. 

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	National Curriculum Statement	All Students		
		Fluency	**Reasoning**	**Problem Solving**
Percentages	Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25	• Ash spends $\frac{3}{5}$ of his money on a coat and 30% on shoes. He started with £55. How much does he have left? • A painter uses $\frac{1}{25}$ of white paint to paint a wall. What percentage does he have left? • Here are a mix of equivalent percentages, fractions and decimals. Put them into correct piles. (Cut up and put in an envelope)	• Blake is working out how much money he can spend on his dad's birthday present. He wants to spend 60% on a camera and $\frac{4}{9}$ on a t-shirt. Explain to Blake why this is not possible. • **If…** 0.1 = $\frac{1}{10}$ 0.2 = $\frac{2}{10}$ **Then…** 0.15 = $\frac{1.5}{10}$ Do you agree? Explain why.	• Bingo! Each child makes a grid of 6 and writes down 6 different, sensible (linking to objective) fractions or percentages. Read out decimals. First to mark off their whole board wins! • In pairs, take a pack of cards of different fractions, decimals and percentages. Turn them over one at a time. The first person to write an equivalent fraction, decimal or percentage on their whiteboard wins a point.

$\frac{1}{10}$	75%
80%	$\frac{15}{100}$
$\frac{10}{50}$	40%

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