Year 4

Mastery Overview
Autumn

MathsHUBS
White Rose

Year 4

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

mathshub@trinityacademyhalifax.org

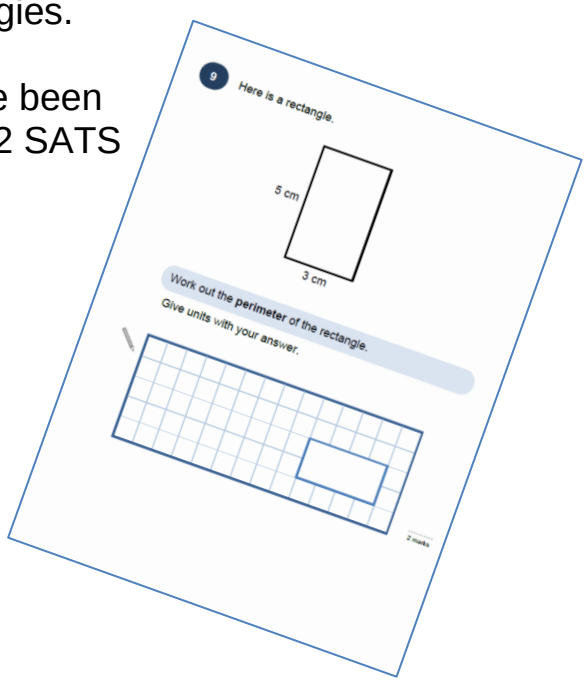
Assessment

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;

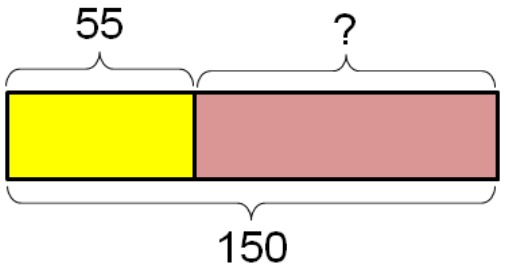
- have number at their heart. A large proportion of time is spent reinforcing number to build competency
- ensure teachers stay in the required key stage and support the ideal of depth before breadth.
- ensure students have the opportunity to stay together as they work through the schemes as a whole 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 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 the other Maths Hubs across the country.

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Term by Term Objectives

Year 4

Year 4 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				Measurement: Area	
Spring	Number: Fractions				Measurement : Time		Number: Decimals			Measurement: Money		
Summer	Measurement : Perimeter and length	Geometry: Angles	Geometry: Shape and symmetry		Geometry: Position and direction		Statistics		Measurement: Area and perimeter			

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Term by Term Objectives

Year 4

Year Group	Y4	Term	Autumn

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 – place value</u> Count in multiples of 6, 7, 9. 25 and 1000. Find 1000 more or less than a given number. Count backwards through zero to include negative numbers. Recognise the place value of each digit in a four digit number (thousands, hundreds, tens and ones) Order and compare numbers beyond 1000. Identify, represent and estimate numbers using different representations. Round any number to the nearest 10, 100 or 1000. Solve number and practical problems that involve all of the above and with increasingly large positive numbers. Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.			<u>Number- addition and subtraction</u> Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate. Estimate and use inverse operations to check answers to a calculation. Solve addition and subtraction two step problems in contexts, deciding which operations and methods to use and why.			<u>Number – multiplication and division</u> Recall and use multiplication and division facts for multiplication tables up to 12 x 12. Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers. Recognise and use factor pairs and commutatively in mental calculations. Multiply two digit and three digit numbers by a one digit number using formal written layout. Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.				<u>Measurement- Area</u> Find the area of rectilinear shapes by counting squares.	

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Term by Term Objectives

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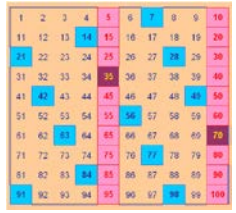
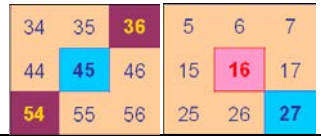
	National Curriculum Statement	All students		
		Fluency	**Reasoning**	**Problem Solving**
Place Value	Count in multiples of 6, 7, 9. 25 and 1000.	• Find the next two numbers 6, 12, 18, 24, 7, 14, 21, 28, 35, 9, 18, 27, 36 25, 50, 75, 5000, 6000, 7000 • Fill in the missing numbers: | 14 | | 28 | 35 | | | 100 | | | 175 | 200 | • Hassan counts on in 25's from 250. Circle the numbers he will say. **990, 125, 300, 440, 575, 700**	• What is the same and what is different about these two number sequences? 6, 12, 18, 24, 30….. 45, 36, 27, 18, 9…… **Same:**_____ **Different:**_____ • Convince me that the number 14 will be in this sequence if it is continued. **49, 42, 35, 28 …….** • **Always, Sometimes, Never** Hayley is counting in 25's and 1000's. She says: - Multiples of 1000 are also multiples of 25. - Multiples of 25 are therefore multiples of 1000. **Are these statements always, sometimes or never true?**	• Mr Hamm has three disco lights. The first light shines for 3 seconds then is off for 3 seconds. The second light shines for 4 seconds then is off for four seconds. The third light shines for 5 seconds then is off for 5 seconds. All the lights have just come on. When is the first time all the lights will be off? When is the next time all the lights will come on at the same time? • Here is a hundred square.  Some numbers have been shaded in blue, and some in pink. Can you notice the pattern? Why are some numbers maroon? Work out the patterns on the parts of the hundred squares below. Could there be more than one pattern? 

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Term by Term Objectives

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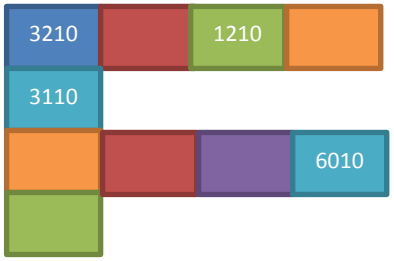
	National Curriculum Statement	All students		
		Fluency	**Reasoning**	**Problem Solving**
Place Value	Find 1000 more or less than a given number.	• What is 1000 more than 3452? • What is 1000 less than 2671? • Find the value of ● 3891 + ● = 4891	• Henry says 'When I add 1000 to 4325 I only have to change 1 digit.' Is he correct? Which digit does he need to change? • Phil says that he can make the number that is 1000 less than 3512 using the number cards 1, 2, 3 and 4. Do you agree? Explain your answer. • Lucy thinks of a number. She says ' The number 1000 more than my number has the digits 1,2,3 and 4.The number 1000 less uses the digits 1, 3 and 4' What number is Lucy thinking of?	• Fill in the boxes by finding the patterns. 

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Term by Term Objectives

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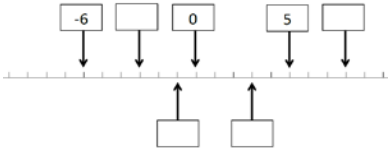
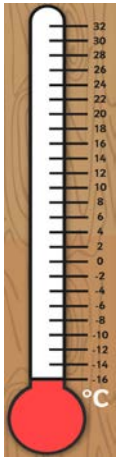
	National Curriculum Statement	All students		
		Fluency	**Reasoning**	**Problem Solving**
Place Value	Count backwards through zero to include negative numbers.	• Find the missing numbers in the sequences: 5, 4, 3, 2, 1, 0, _, -2, _ 8, 6, 4, 2, 0, _, -4, _, 10, 6, 2, -2, _, -10, __ • What temperature is 10 degrees below 3 degrees Celsius? • Fill in the empty boxes on the number line. 	• Anna is counting down from 11 in fives. Does she say -11? Explain your reasoning. • Harris is finding the missing numbers in this sequence. _, _, 5, _, _, -5 He writes down: 15, 10, 5, 0, -0, -5 Explain the mistake Harris has made. • Sam counted down in 3's until he reached -18. He started at 21. What was the tenth number he said?	• Fred is a police officer. He is chasing a suspect on Floor 5 of an office block. The suspect jumps into the lift and presses -1. Fred has to run down the stairs, how many flights must he run down?  • Draw the new temperature on the thermometer after each temperature change:  -In the morning it is 4 degrees, it drops 8 degrees. -In the afternoon it is 12 degrees Celsius, overnight it drops by 14 degrees. -It is 1 degree, it drops by 11 degrees.

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Term by Term Objectives

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	National Curriculum Statement	All students		
		Fluency	**Reasoning**	**Problem Solving**
Place Value	Recognise the place value of each digit in a four digit number (thousands, hundreds, tens and ones)	• Find the value of ● in each statement. ● = 3000+ 500+ 40 2000 + ● + 2 = 2702 ● + 40 + 5 = 3045 • Write the value of the underlined digit. 3462, 5124, 7024, 4720 • 1423 is made up of _ thousands, _ hundreds, _ tens and _ ones.	• Show the value of 5 in each of these numbers. 5462, 345, 652, 7523 Explain how you know. • Create 5 four digit numbers where the tens number is 2 and the digits add up to 9. Order them from smallest to largest. • How many different ways can you write 5340?	• Claire thinks of a 4 digit number. The digits add up to 12. The difference between the first and fourth digit is 5. What could Claire's number be? • Use the clues to find the missing digits. □□□□ The thousands and tens digit multiply together to make 24. The hundreds and tens digit have a digit total of 9. The ones digit is double the thousands digit. The whole number has a digit total of 18. • There are 4 number cards, A, B, C and D. They each have a four digit number on. Using the clues below, work out which card has which number. 3421, 1435, 3431, 1243 A has a digit total of 10. B and C have the same thousands digit. In C and D the tens and hundreds digits add up to 7. D has the largest digit total.

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Term by Term Objectives

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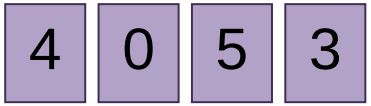
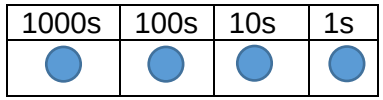
	National Curriculum Statement	All students		
		Fluency	**Reasoning**	**Problem Solving**
Place Value	Order and compare numbers beyond 1000.	• Write these numbers in order from smallest to largest. 1324, 1423, 1342, 1432, 2341 • Here are 4 digit cards. Arrange them to make as many 4 digit numbers as you can and order your numbers from largest to smallest.  • Using four counters in the place value grid below make as many 4 digit numbers as possible. Put them in ascending order. 	• If you wrote these numbers in order from largest to smallest which number would be fourth. 5331, 1335, 1533, 5313, 5133, 3513, 3531. Explain how you ordered them. • Put one number in each box so that the list of numbers is ordered largest to smallest. 1 1 _ 3 1 _ 2 7 1 2 5 _ 1 _ 5 9 1 3 0 _ 1 _ 1 5 • **True or False:** You must look at the highest place value column first when ordering any numbers.	• I am thinking of a number. It is greater than 1500 but smaller than 2000. The digits add up to 13. The difference between the largest and smallest digit is 5. What could the number be? Order them from smallest to largest. • Lola has ordered five 4 digit numbers. The smallest number is 3450, the largest number is 3650. All the other numbers have digit totals of 20. What could the other three numbers be? • You have 2 sets of 0-9 digit cards. You can use each card once. Arrange the digits so they are as close to the target numbers as possible. 1. Largest odd number 2. Largest even number 3. Largest multiple of 3 4. Smallest multiple of 5 5. Number closest to 5000.

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Term by Term Objectives

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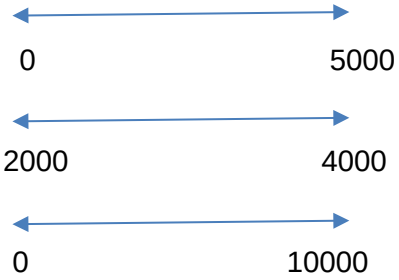
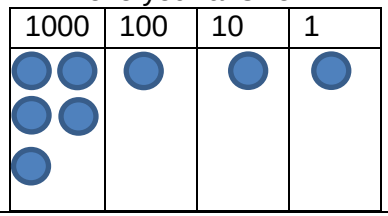
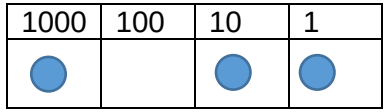
	National Curriculum Statement	All students		
		Fluency	**Reasoning**	**Problem Solving**
Place Value	Identify, represent and estimate numbers using different representations.	• What number is represented below?  • Use place value counters to represent the following numbers: 1245, 3015, 4702 • Show 1600 on the number line.  	• Place 2500 on the number lines below.  • Hamish has one counter and a place value grid. He says he can make a one, two, three, four and five digit number. Is he correct? Show this on a place value grid. • Amelia says 'The number in the place value grid is the largest number you can make with 8 counters.' Do you agree? Prove your answer.  	• Using 3 counters and the place value grid below, how many 4 digit numbers can you make?  • Dan was making a 4 digit number using place value counters. He dropped two of his counters on the floor. What number could he have made?  • If the number on the number line is 1788, what could the start and end numbers be? 

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Term by Term Objectives

Year 4

Place Value

National Curriculum Statement	All students		
	Fluency	**Reasoning**	**Problem Solving**
Round any number to the nearest 10, 100 or 1000.			

	Nearest 10	Nearest 100	Nearest 1000
667			
1274			
2495			

Lowest possible whole number	Rounded number	Highest possible whole number
4500	5000 to the nearest 1000	5499
_____	300 to the nearest 100	_____
_____	___ to the nearest 10	74

- The school kitchen wants to order enough jacket potatoes for lunch. Potatoes come in sacks of 100. How many sacks do they need for 766 children?

Reasoning

- Caroline thinks that the largest whole number that rounds to 400 is 449. Is she correct? Explain why.
- Henry says '747 to the nearest 10 is 740.' Do you agree with Henry? Explain why.
- A number rounded to the nearest 10 is 550. What is the smallest possible number it could be?

Problem Solving

- When a number is rounded to the nearest 100 it is 200. When the same number is rounded to the nearest 10 it is 250. What could the number be?
- Roll three dice. Make all the three digit numbers that you can using the three digits. Round them to the nearest 100. Can each of the numbers round to the same multiple of 100? Can all of the numbers round to a different multiple of 100?
- Using the number cards 0-9, can you make numbers that fit the following rules?

  1. When rounded to the nearest 10, I round to 20.
  2. When rounded to the nearest 10, I round to 10.
  3. When rounded to the nearest 1000, I round to 1000.
  4. When rounded to the nearest 100, I round to 7200.

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Term by Term Objectives

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	National Curriculum Statement	All students		
		Fluency	Reasoning	Problem Solving
Place Value	Solve number and practical problems that involve all of the above and with increasingly large positive numbers.	Covered above	Covered above	Covered above

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Term by Term Objectives

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	National Curriculum Statement	All students		
		Fluency	**Reasoning**	**Problem Solving**
Place Value	Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.	• Match the Arabic numeral to the correct Roman numeral. • Using the table above, fill in the missing Roman numerals. 15 | LV 55 | XCIII 39 | | XV 88 | C 93 | XXXIX • Convert the Roman numeral into Arabic numerals. • XVII - XXIV -XIX	• Look at the multiples of 10. Is there a pattern? What do you notice? • Bobby says "In the 10 times table, all the numbers have a zero. Therefore, in Roman numerals all multiples of 10 have an X." Is he correct? Prove it.	• Treasure hunt- Complete the trail by adding the Roman Numerals together as you go. • If you know 1 – 100 in Roman numerals can you guess the numbers up to 1000?

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Term by Term Objectives

Year 4

Addition and Subtraction

National Curriculum Statement	All students		
	Fluency	**Reasoning**	**Problem Solving**
Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.	• Complete the calculations below using the column method. 354 + 276= 1425 + 2031= 3864 – 2153 = 2416 – 1732= • Fill in the missing numbers: 432 + ▭ = 770 50 + 199 + ▭ = 450 ▭ - 75 = 94 ▭ - 5000 = 5700 • Choose whether to solve these questions mentally or using written methods. 54 + 46 540 + 460 34 + 69 + 26 298 + 342 566 + 931 999 + 999 1547 + 2742 1999 + 364	• There are mistakes in the following calculations. Explain the mistake and then make a correction to find the correct answer. 2451 + 562 = 8071 782 - 435 = 353 • ▭ - 555 = 8▭5 What is the largest possible number that will go in the rectangular box? What is the smallest? Convince me. • Write three calculations where you would use mental calculations and three where you would use the column method. Explain the decision you made for each calculation.	• A game to play for two people. The aim of the game is to get a number as close to 5000 as possible. Each child rolls a 1-6 die and chooses where to put the number on their grid or the other players. Once they have filled their grids then they add up their totals to see who has won. | | ? | ? | ? | ? | | + | ? | ? | ? | ? | • A chocolate factory usually produce 1568 caramel bars on a Saturday but on a Sunday production decreases and they make 325 fewer bars. How many bars are produced at the weekend in total? • All of the digits below are either a 3 or a 9. Can you work out each digit? 7338=???? + ????

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Term by Term Objectives

Year 4

	National Curriculum Statement	All students		
		Fluency	**Reasoning**	**Problem Solving**
Addition and Subtraction	Estimate and use inverse operations to check answers to a calculation.	Julie has 578 stamps, Heidi has 456 stamps. How many stamps do they have altogether? Show how you can check your answer using the inverse. Estimate the answers to these number sentences. Show your working. 3243 + 4428 7821- 2941 Check the answers to the following calculations using the inverse. Show all your working. 762 + 345 = 1107 2456- 734 = 1822	Jenny estimates the answer to 3568 + 509 ≈ 4000. Do you agree? Explain your answer. Grace says that 5129 – 3372= 2257 because: ‘ 5000-3000= 2000 300- 100=200 70-20 = 50 9-2 = 7 so 5129-3372 is 2257’ Do you agree with Grace? Use an addition calculation to justify your answer. Always, sometimes, never. The difference between two odd numbers is odd.	Harry thinks of a number, he multiplies it by 3, adds 7 and then divides it by 2. How could he get back to his original number? If Harry starts with the number 3, write out all the calculations he will do to get back to his original number.

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Term by Term Objectives

Year 4

Addition and Subtraction

National Curriculum Statement	All students		
	Fluency	**Reasoning**	**Problem Solving**
Solve addition and subtraction two step problems in contexts, deciding which operations and methods to use and why.	• There are 2452 people at a theme park. 538 are children, how many are adults? Sarah draws a diagram to help. Place a (√) next to the correct diagram Adults | 2452 | 538 2452 | Adults | 538 538 | 2452 | Adults Use the correct diagram to help you solve the problem.	• Archie and Sophie are both working out the answer to the following question: 350 + 278 + 250 They have both used different strategies. Archie's method: 350+ 278+ 250; 350+ 278= 628; 628 + 250= 878; Answer = 878 Sophie's method: 350+278+250; 350+250= 600; 600+ 278= 878; Answer= 878 Which do you prefer? Explain why. Use the method you preferred to solve 320+ 458 + 180	• Alice is trying to complete a sticker book. It needs 350 stickers overall. She has 134 in the book and a further 74 ready to stick in. How many more stickers will she need? • A supermarket has 1284 loaves of bread at the start of the day. During the day, 857 loaves are sold and a further 589 loaves are delivered. How many loaves of bread are there at the end of the day? • John is having a garden party. He will need to make 412,250 sandwiches in total. He makes 28,000 tuna, 51,000 cheese, 84,500 ham and 75,025 egg. He decides to make the rest cucumber. How many cucumber sandwiches will there be?

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		Fluency	**Reasoning**	**Problem Solving**
Multiplication and Division	Recall and use multiplication and division facts for multiplication tables up to 12 x 12.	• Find the answers: 4 x 12 = 5 x 9 = 7 x 8 = 8 x 11 = • Fill in the gaps: 4 x __ = 12 8 x __ = 64 32 = 4 x __ 6 = 24 ÷ __ • Leila has 6 bags with 5 apples in each. How many apples does she have altogether?	•  X = 48 Which pair of numbers could go in the boxes? • Complete these calculations: 7 x 8= 7 x 4 x 2= 5 x 6 = 5 x 3 x 2= 12 x 4 = 12 x 2 x 2= Which calculations have the same answer? Can you explain why? • **True or False** 6 x 8 = 6 x 4 x 2 6 x 8 = 6 x 4 + 4 Explain your reasoning. Can you write the number 24 as a product of three numbers?	• Find three possible values for  and  . x = 24 • I am thinking of 2 secret numbers where the sum of the numbers is 16 and the product is 48. What are my secret numbers? Can you make up 2 secret numbers and tell somebody what the sum and product are? • How many multiplication and division sentences can you write that have the number 72 in them?

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	National Curriculum Statement	All students		
		Fluency	Reasoning	Problem Solving
Multiplication and Division	Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.	• Fill in the missing numbers: ☐ x 1 = 13 12 x 0 = ☐ 3 x 2 x ☐ = 18 • Holly has 1 box of 12 eggs, how many eggs does she have? Sally has 0 boxes of 12 eggs, how many eggs does she have? Write these two questions as multiplication sentences.	• **Always, sometimes, never** An even number that is divisible by 3 is also divisible by 6. • Harvey has written a number sentence. 13 x 0 = 0 He says, 'I can change one number in my number sentence to make a brand new multiplication.' Is he correct? Which number should he change? Explain your reasoning.	• Write the number 30 as the product of 3 numbers. Can you do it in different ways? • Try to reach the target number below by multiplying three of the numbers together. Cross out any numbers you don't use. Target number: 144 1 5 3 0 6 8

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Term by Term Objectives

Year 4

	National Curriculum Statement	All students		
		Fluency	**Reasoning**	**Problem Solving**
Multiplication and Division	Recognise and use factor pairs and commutatively in mental calculations.	• 7 x 5 = ■ = 5 x ■ • Find the missing numbers 12 x 6 = 6 x ___ 2 x 3 x 5 = __ x 5 2 x 7 x 5 = __ x 5 • 13 x 12 can be solved by using factor pairs, eg 13 x 3 x 4 or 13 x 2 x 6. What factor pair could you use to solve 17 x 8?	• Fill in the missing numbers 25 x 3 = □= □ ÷□ • Use factor pairs to solve 15 x 8. Is there more than one way you can do it? • Multiply a number by itself and then make one factor one more and the other one less. What do you notice? Does this always happen? Eg 4 x 4 = 16 6 x 6= 36 5 x 3 = 15 7 x 5= 35 Try out more examples to prove your thinking.	• Place <, >, or = in these number sentences to make them correct: 50 x 4 ■ 4 x 50 4 x 50 ■ 40 x 5 200 x 5 ■ 3 x 300 • The school has a singing group of more than 12 singers but less than 32. They sing together in different ways. Sometimes they sing in pairs and sometimes in groups of 3, 4 or 6. Whatever size groups they are in, no one is left out and everyone is singing. How many singers are there in the school choir?

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Term by Term Objectives

Year 4

	National Curriculum Statement	All students		
		Fluency	**Reasoning**	**Problem Solving**
Multiplication and Division	Multiply two digit and three digit numbers by a one digit number using formal written layout.	• 57 x 5 = • 324 x 6= • Sahil has 45 packets of sweets. Each packet has 6 sweets in it. How many sweets does he have altogether?	• Penny says a two digit number multiplied by a one digit number will always give a two digit answer. Is she correct? Justify your answer. • Find the mistake that has been made in the calculation below. Explain and correct it. 47 X 8 3256 • What number goes in the missing box? Convince me. 3 ☐ x 4 = 140	• What could the numbers in the multiplication be? Every digit is different. ??? x 3 = ???? • Miss Wood orders some new whiteboard pens for Year 5 and 6. There are 160 children in Year 5 and 6. If she orders 6 boxes of 27 pens, will she have enough? Show your calculation. • In one month, Charlie read 814 pages in his books. His mum read 4 times as much as Charlie which was 184 pages more than Charlie's dad. How many pages did they read altogether? Use a bar model to help.

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Term by Term Objectives

Year 4

	National Curriculum Statement	All students		
		Fluency	**Reasoning**	**Problem Solving**
Multiplication and Division	Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects. .	• Harry buys 6 chocolate bars, one chocolate bar costs 54p. How much does Harry spend? a) Write a number sentence to represent the problem. b) Solve the problem.	• Miss Smith estimates 399 x 60 = 240000 Was she right to do that? Explain why. • In a box there are red and yellow cubes. For every 5 red cubes there are 3 yellow cubes. Hannah says ' If I have more than 10 red cubes, I will definitely have more than 10 yellow cubes.' Do you agree? Convince me.	• An ice cream sundae is made from one scoop of ice cream, one topping and one sauce. **How many different ice cream sundaes can be created from 5 different flavours of ice cream, 3 different toppings and 4 different sauces?**

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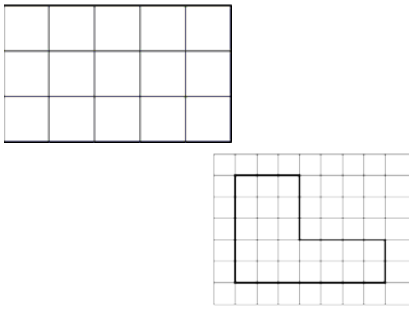
Term by Term Objectives

Year 4

	National Curriculum Statement	All students		
		Fluency	**Reasoning**	**Problem Solving**
Measurement	Find the area of rectilinear shapes by counting squares.	• Find the area of these shapes:  • A rectangle measures 5 squares long by 3 squares wide. What is the area of the shape? • Max is building a patio made of 24 square slabs. He has torn the paper with his design on. What would his complete design look like? Draw it on the grid.	• A shape has the area of 17cm^2. Could the shape be a rectangle? Explain your answer. • A rectangle measures 5 squares by 3 squares. Amy says 'The area must be 8 squares' Do you agree? Explain your thinking. • The area of any rectangle has an even number of squares. Do you agree? Prove it.	• A fourteen sided shape has an area of eight squares. Draw the shape on squared paper. • How many shapes can you draw that have an area of 8 square centimetres?

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