

# Year 1

Mastery Overview  
Spring

## 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 created our own network area where teachers from 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***

## Assessment

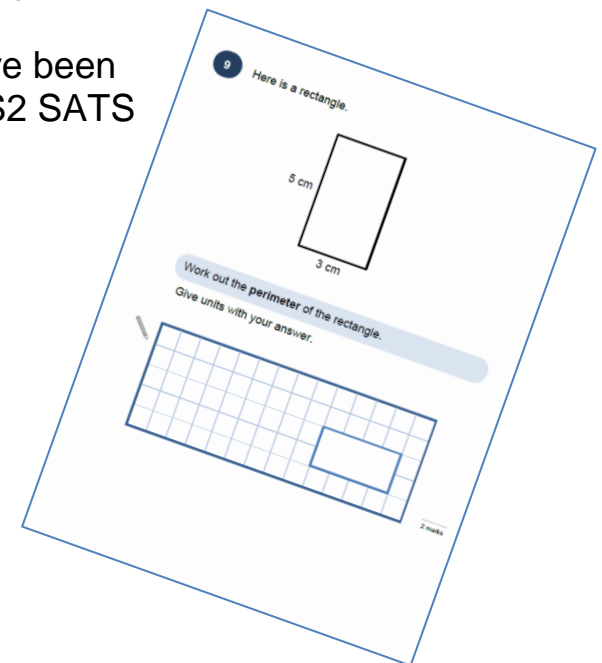
Alongside these curriculum overviews, our aim is also to provide a free assessment for each term's plan. Each assessment will be made up of two parts:

**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.



## 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;

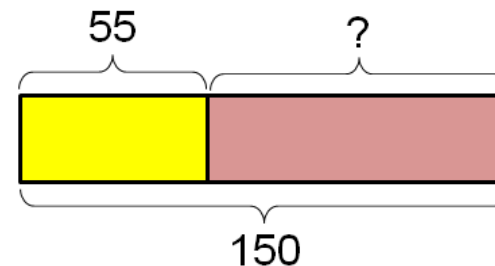
- have number at their heart. A large proportion of time is spent reinforcing number to build competency
- ensure teachers stay in the required key stage and support the ideal of depth before breadth.
- ensure students have the opportunity to stay together as they work through the schemes as a whole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

## 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.

## 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](mailto: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.

## Year 1 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			Geometry: Shape	Number: Place Value		Number: Addition and Subtraction		
Spring	Time		Place Value		Number: Addition and Subtraction	Measures: Length and height	Number: Multiplication and Division		Number: Fractions			
Summer	Number: Place Value			Number: Four Operations			Measurement: Money	Measurement: Weight and Volume				


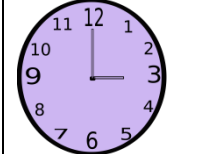


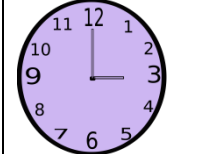
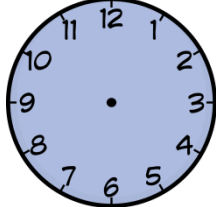

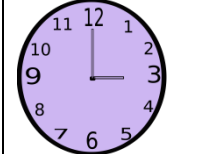
# Term by Term Objectives

# Year 1

Year Group	Y1	Term	Spring
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Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12		
<p><u>Time</u> Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.</p> <p>Recognise and use language relating to dates, including days of the week, weeks, months and years.</p> <p>Compare, describe and solve practical problems for time [for example, quicker, slower, earlier, later] and measure and begin to record time (hours, minutes, seconds)</p> <p>Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening.</p>		<p><u>Place Value</u> Count to 40 forwards and backwards, beginning with 0 or 1, or from any number.</p> <p>Count, read and write numbers from 1-40 in numerals and words.</p> <p>Identify and represent numbers using objects and pictorial representations.</p> <p>Given a number, identify 1 more or 1 less.</p>		<p><u>Number: Addition and Subtraction</u> Add and subtract one digit and two digit numbers to 20, including zero.</p> <p>Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.</p> <p>Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems.</p>		<p><u>Measures: Length and height</u> Compare, describe and solve practical problems for: lengths and heights for example, long/short, longer/shorter, tall/short, double/half</p> <p>Measure and begin to record lengths and heights.</p>		<p><u>Number: Multiplication and Division</u> Count in multiples of twos, fives and tens.</p> <p>Solve one step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.</p>		<p><u>Number: Fractions</u> Recognise, find and name a half as one of two equal parts of an object, shape or quantity.</p> <p>Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.</p>		<p>Time at the beginning or end of the term for consolidation, gap filling, seasonal activities, assessments, etc.</p>	

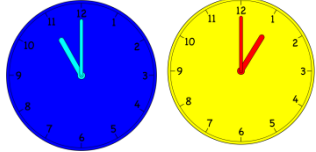
## Measurement - Time

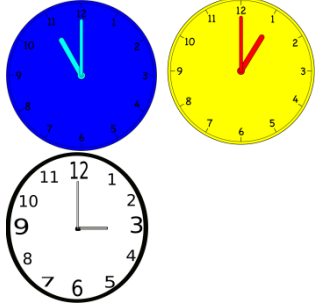
National Curriculum Statement	All students						
	Fluency	Reasoning	Problem Solving				
<p>Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.</p>	<ul style="list-style-type: none"> <li>Point to 11 o'clock on the class clock.</li> <li>Match the words to the correct clock:                             <table border="1" data-bbox="725 443 1111 762"> <tr> <td></td> <td>Three o'clock</td> </tr> <tr> <td></td> <td>One o'clock</td> </tr> </table> </li> <li>What time is the clock showing?                              </li> </ul>		Three o'clock		One o'clock	<ul style="list-style-type: none"> <li>Kim says, "The big hand is pointing to the 6 and the small hand is pointing to the 12 so it is 6 o'clock." Do you agree?</li> <li>Can you explain to your partner how to show half past 8 on your clock?</li> <li>Using the blank clocks, can you draw three times and write something that you would do at this time?                              </li> </ul>	<ul style="list-style-type: none"> <li>In pairs, children start at 6 o'clock. In turns, they move the time on either half hour or 1 hour. Whoever lands on 12 o'clock is the winner.</li> <li>Create a short play with friends on activities you would do at half past 12, 7 o'clock and 9 o'clock.</li> <li>Ben was in bed asleep. Can you show me two different times on your clock to show when this could be happening?</li> </ul>
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	One o'clock						


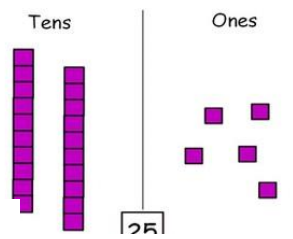


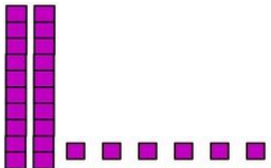
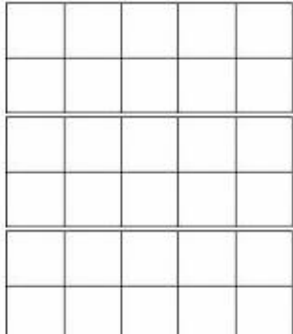
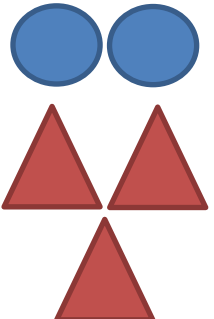
## Measurement - Time

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<p>Recognise and use language relating to dates, including days of the week, weeks, months and years.</p>	<ul style="list-style-type: none"> <li>Fill in the missing blanks: On _____, I visited the seaside all day. On _____, we did P.E. at school.</li> <li>Can you write down the month and year you were born?</li> <li>Here are the days of the week mixed up. Can you put them in the correct order?</li> </ul> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>Thursday</td></tr> <tr><td>Tuesday</td></tr> <tr><td>Saturday</td></tr> <tr><td>Monday</td></tr> <tr><td>Friday</td></tr> <tr><td>Sunday</td></tr> <tr><td>Wednesday</td></tr> </table>	Thursday	Tuesday	Saturday	Monday	Friday	Sunday	Wednesday	<ul style="list-style-type: none"> <li>Match the picture to the month you think it is showing. Explain why you have made that choice:</li> </ul> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td>June</td> </tr> <tr> <td></td> <td>September</td> </tr> <tr> <td></td> <td>January</td> </tr> </table> <ul style="list-style-type: none"> <li>Hannah is describing a month. She says, "I don't like this month because it's always cold and it's darker outside for longer. Sometimes it snows." What month do you think this is? Convince me!</li> <li>Look at the calendar below</li> </ul> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><th colspan="7">APRIL 2016</th></tr> <tr><td>Sun</td><td>Mon</td><td>Tue</td><td>Wed</td><td>Thu</td><td>Fri</td><td>Sat</td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td>1</td><td>2</td></tr> <tr><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr> <tr><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td></tr> <tr><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td></tr> <tr><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr> </table> <p>Kirsty wants to go to the cinema one weekend. List the days she could possibly go. Explain why.</p>		June		September		January	APRIL 2016							Sun	Mon	Tue	Wed	Thu	Fri	Sat						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	<ul style="list-style-type: none"> <li>Below is a list of activities Jonathan did. Can you explain to him which he should spend a day, week and year on and why?</li> </ul> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>A holiday to Spain</td></tr> <tr><td>A trip to the zoo</td></tr> <tr><td>Learning in Year 1</td></tr> </table> <ul style="list-style-type: none"> <li>Robbie is describing different things he did on different days. Can you write a day next to each activity and explain why you chose that day.</li> </ul> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Robbie's activity</th> <th>Day</th> <th>Reason</th> </tr> </thead> <tbody> <tr> <td>At the weekend I like to play football at the park.</td> <td></td> <td></td> </tr> <tr> <td>I went to a party for my friend's birthday.</td> <td></td> <td></td> </tr> <tr> <td>I learnt how to write a story in English.</td> <td></td> <td></td> </tr> </tbody> </table>	A holiday to Spain	A trip to the zoo	Learning in Year 1	Robbie's activity	Day	Reason	At the weekend I like to play football at the park.			I went to a party for my friend's birthday.			I learnt how to write a story in English.		
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<b>Measurement - Time</b>	<p>Compare, describe and solve practical problems for time [for example, quicker, slower, earlier, later] and measure and begin to record time (hours, minutes, seconds)</p>	<ul style="list-style-type: none"> <li>Using a stop watch. Can you see who can do 10 stars jumps the quickest? Take it in turns to record each other.</li> <li>James took 35 seconds to read a page in a book. A class spent 4 minutes looking at a page in a book. Who was the slowest?</li> <li>Peter is eating his lunch at half past 12. Jane is eating her lunch half an hour later. Tick the clock which is showing when Jane eats her lunch.</li> </ul> <div style="text-align: center;">  </div>	<ul style="list-style-type: none"> <li>Holly arrived at school at 8 o'clock. Megan arrived 9 minutes past 8. Holly says, "I arrived earlier." Do you agree? Explain why.</li> <li>Sarah explained to the class that she woke up for school at 6 o'clock. Her friend said, "I'm confused because I have my tea at that time." Why is Sarah's friend confused?</li> <li>Explain to a friend why the big hand moves round the clock faster than the small hand.</li> </ul>	<ul style="list-style-type: none"> <li>On Saturday, I played at the park for 15 minutes. On Sunday, I played for longer. Can you write an amount of time I could have played for? Explain how you know it is correct.</li> <li>Mick, Seb and Annie all walk to a football match. Mick takes 8 minutes to walk there. Seb is 3 minutes slower than Mick. Annie is 5 minutes faster than Seb. Who arrived at the football match first? How do you know?</li> </ul>

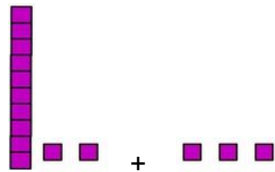
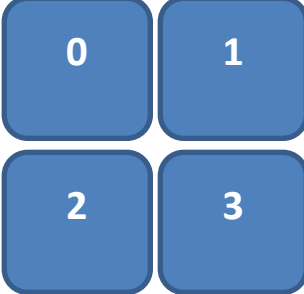
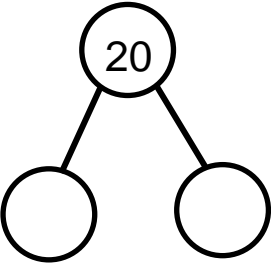
	National Curriculum Statement	All students						
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Measurement - Time	<p>Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening.</p>	<ul style="list-style-type: none"> <li>Put the following statements in the correct order.                             <table border="1" style="margin-left: 20px;"> <tr><td>Next week I am going to the seaside</td></tr> <tr><td>Yesterday I walked my dog</td></tr> <tr><td>Tomorrow I will have pizza</td></tr> <tr><td>Today I am going shopping</td></tr> </table> </li> <li>Fill in the missing blanks for instructions on how to do work. Use next, first and after.                             <p>_____ I open my book</p> <p>_____ I write the date</p> <p>_____ I do my work</p> </li> </ul>	Next week I am going to the seaside	Yesterday I walked my dog	Tomorrow I will have pizza	Today I am going shopping	<ul style="list-style-type: none"> <li>Look at the clocks below. Can you put them in order and explain why you have chosen that order?                             <div style="display: flex; justify-content: space-around; align-items: center;">  </div> </li> <li>True or false? We go to bed <b>before</b> we brush our teeth? Explain why.</li> </ul>	<ul style="list-style-type: none"> <li>Using pictures of different activities e.g. waking up, eating dinner, working at school. Can you order them in a sensible way and explain why you have done this using prompt words e.g. after...</li> <li>Can you write a diary entry for your day at school yesterday? Include at least 3 prompt words e.g. first, next...</li> </ul>
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	National Curriculum Statement	All students																	
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Place Value	<p>Count to 40 forwards and backwards, beginning with 0 or 1, or from any number.</p>	<ul style="list-style-type: none"> <li>Complete the missing numbers:                             <table border="1" style="margin: 5px 0;"> <tr> <td>31</td> <td></td> <td></td> <td>28</td> <td>27</td> </tr> <tr> <td>19</td> <td></td> <td>21</td> <td>22</td> <td>23</td> </tr> <tr> <td>40</td> <td></td> <td>38</td> <td></td> <td>36</td> </tr> </table> </li> <li>In pairs, take turns to say 3 consecutive numbers starting from any point. Record who says 40. e.g. start from 28  <b>28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39</b>  <b>40</b> </li> <li>How many bricks are there altogether?                              </li> </ul>	31			28	27	19		21	22	23	40		38		36	<ul style="list-style-type: none"> <li>Kate says, "I have 3 tens and 8 ones. My number must be 308." Explain the mistake Kate has made.</li> <li>True or false? I am counting forwards to 40 from 25. I will say 30. Convince me.</li> <li>Spot and explain the mistake. 26, 27, 28, 29, 40</li> </ul>	<ul style="list-style-type: none"> <li>My friend and I created the same number using base 10. My number is below. How much did we have altogether?                             <div style="text-align: center;">  </div> </li> <li>Simon had 3 numbers in his bag. He gave three clues about them. Work out what each number could be:                             <ul style="list-style-type: none"> <li>- One number has seven less than 35.</li> <li>- One number has no ones.</li> <li>- One number more ones than it has tens.</li> </ul> </li> <li>Put cards 0-40 face down. When you turn one over count how many jumps it takes to get to 40. Count how many jumps it takes to get to 0. Which is it closer to? Why?</li> </ul>
		31			28	27													
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	National Curriculum Statement	All students		
		Fluency	Reasoning	Problem Solving
Place Value	<p>Count, read and write numbers from 1-40 in numerals and words.</p>	<ul style="list-style-type: none"> <li>Using base 10, show me 37.</li> <li>What is my number?</li> </ul>  <ul style="list-style-type: none"> <li>Using counters, fill the ten frames to make 28.</li> </ul>  <p>How many would you have if it was full? How many more do you need to make it 30?</p>	<ul style="list-style-type: none"> <li>True or false? I have 2 tens and 7 ones. If I take one ten away, I will have 17. Explain why.</li> <li>Odd one out! Explain why you think a number is the odd one out. How many different reasons can you find? 10, 15, 25, 36</li> <li>Each circle represents 10. Each triangle represents one. Harry says the number below is 24. Is he correct? Explain why.</li> </ul> 	<ul style="list-style-type: none"> <li>Create a word search for a friend including the words eighteen, forty and twenty four.</li> <li>Create a number story using the number 40.</li> <li>Write or look at the numbers 1-40. Are there any patterns in how they are pronounced? Are there any numbers that are different? Does this make it easier or harder to remember them?</li> </ul>

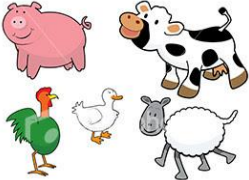

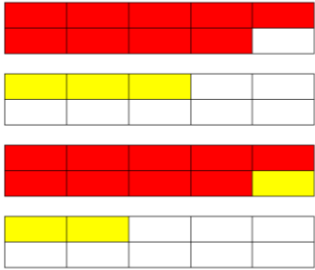

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		Fluency	Reasoning	Problem Solving		
Place Value	Identify and represent numbers using objects and pictorial representations.	<ul style="list-style-type: none"> <li>Using Base 10, show me:                             <ol style="list-style-type: none"> <li>38</li> <li>a number smaller than 25</li> <li>a number with 1 ten and 6 ones in it</li> </ol> </li> <li>How many ways can you represent 17 using drawings?</li> <li>Treasure hunt activity! Can you find all the things on your sheet?</li> </ul>	<ul style="list-style-type: none"> <li>If blue counters are worth 5. Can you make 35 using them?</li> <li>Can you create a story, including drawings, for the number sentence below? <math>17 + 9 =</math></li> <li>Jamie had some teddy bears. He said if I had another equal set of teddy bears I would have 20. Is he right? Explain why.</li> </ul>	<ul style="list-style-type: none"> <li>Look at the picture below. List all the mathematical vocabulary, numbers and calculations you can create from this.</li> </ul>		
		<table border="1"> <tr> <td>11 pencils</td> <td>27 stickers</td> </tr> <tr> <td>19 leaves</td> <td>15 balls</td> </tr> </table>	11 pencils	27 stickers	19 leaves	15 balls
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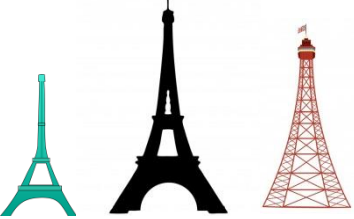



	National Curriculum Statement	All students		
		Fluency	Reasoning	Problem Solving
Place Value	<p>Given a number, identify 1 more or 1 less.</p>	<ul style="list-style-type: none"> <li>Complete the more and less boxes below:</li> </ul>  <ul style="list-style-type: none"> <li>Fill in the missing gaps:</li> </ul> <p>One more than 29 is <input type="text"/></p> <p><input type="text"/> is one less than 13</p> <p><input type="text"/> = 1 less than 45</p>	<ul style="list-style-type: none"> <li>Anna thinks 1 more than 14 is 24. Can you explain her mistake?</li> <li>True or false? 1 more than 10 is the same as 1 less than 30.</li> <li>Calvin is finding one more and one less of a number. Here are some he has found: 21,22,23 34,35,36 17,18,19 Calvin says, "No matter what number I pick the tens will stay the same. It is only the ones that change." Is he right? Explain why.</li> </ul>	<ul style="list-style-type: none"> <li>Sarah has £1 more than Katie. Brian has £1 less than Katie. Sarah has £22. How much money do Katie and Brian have?</li> <li>A bag is full of digit cards from 1-40. Michelle pulls out a card and says "The difference between the digits is 1." What card could she have pulled out? Is this the only option?</li> <li>In pairs, take it in turns to build a tower. Your partner needs to make 2 towers. The first will be 1 more than the original; the second will be 1 less.</li> </ul>

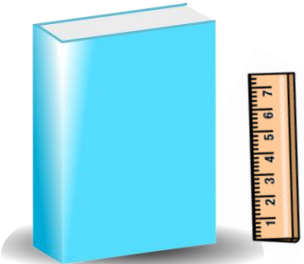

	National Curriculum Statement	All students		
		Fluency	Reasoning	Problem Solving
Addition and Subtraction	Add and subtract one digit and two digit numbers to 20, including zero.	<ul style="list-style-type: none"> <li>Fill in the missing gaps:                 <math>20 - \square = 10</math>   <math>\square + 13 = 19</math>   <math>\square = 17 - 13</math>    </li> <li>Alan baked 16 cookies. He gave 14 of them away. How many are left?</li> </ul>	<ul style="list-style-type: none"> <li>Clare is working out <math>19 - 12 =</math>. She begins building both numbers with base 10. Explain why she doesn't need to do this.</li> <li>Martin is subtracting single digits from 20. He says, "The lowest answer I can get is 11." Do you agree? Explain why.</li> <li>Explain why <math>20 - 10 = 10</math></li> </ul>	<ul style="list-style-type: none"> <li>Look at the digit cards below.                                  How many calculations and answers can you make? How do you know you have found them all?             </li> <li>Roll three dice and add the numbers to get an answer. Use a ten frame to help if needed. What are the highest and lowest possible answers? How do you know?</li> <li>How many part-whole models can you make where the whole number is 20? Can you have 3 parts?</li> </ul> 



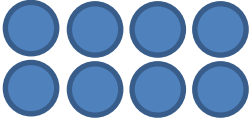
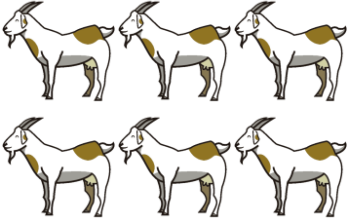
	National Curriculum Statement	All students									
		Fluency	Reasoning	Problem Solving							
Addition and Subtraction	<p>Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.</p>	<ul style="list-style-type: none"> <li>What word could be used in the calculation below? <math>33 \square 12 = 2</math></li> <li>There were 15 people in the cinema and 23 people joined them. Can you write a calculation to show this?</li> <li>Use the cards below to create a mathematical statement.</li> </ul>	<ul style="list-style-type: none"> <li>A year one class have been using the equals sign. Their teacher presents them with the following calculation: <math>17 + 3 = 30 - 10</math> They are confused why the teacher has put 30 after the equals sign and not 20. Can you explain this to them?</li> <li>The following numbers are given to 2 children. 14, 6, 20 Harjas says "I will use an addition sign for this calculation." Kaemon says "This will need a subtraction sign." Who is right? Explain why.</li> </ul>	<ul style="list-style-type: none"> <li>Look at the picture below. How many calculations can you create from it?</li> </ul>  <ul style="list-style-type: none"> <li>Using the numbers 1-40, how many calculations can you create? Have you used a strategy?</li> <li>Two numbers added together make 8. The difference between them is 2. What are the two numbers?</li> </ul>							
		<table border="1" data-bbox="470 853 795 949"> <tbody> <tr> <td>17</td> <td>9</td> <td>6</td> </tr> <tr> <td>14</td> <td>-</td> <td>5</td> </tr> <tr> <td>+</td> <td>11</td> <td>=</td> </tr> </tbody> </table>	17	9	6	14	-	5	+	11	=
17	9	6									
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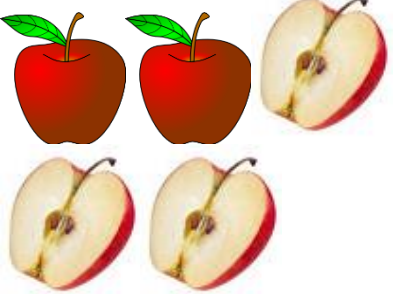
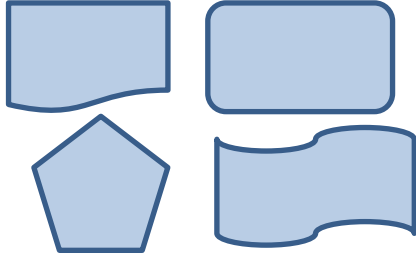

	National Curriculum Statement	All students		
		Fluency	Reasoning	Problem Solving
Addition and Subtraction	Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems.	<ul style="list-style-type: none"> <li>A farmer had 35 sheep. He sold 8 of them to his farmer friend. How many did he have left?</li> <li>Each animal got one bag of food in the morning and one at night. How many bags of food are used in a day?</li> </ul>  <ul style="list-style-type: none"> <li>A man counted 38 red and blue cars in an hour. 9 of them were red. How many blue cars did he count?</li> </ul>	<ul style="list-style-type: none"> <li>There are 7 flowers in a vase and Kelsey is holding 8 in her hand. She wants to know the total number of flowers but doesn't know whether to add or subtract. Can you explain which she needs to do?</li> <li>I have 4 more sweets than Olivia has. How many books must I give Olivia so that we have the same number of sweets? Explain how you know.</li> </ul> 	<ul style="list-style-type: none"> <li>Phil is using ten frames to solve <math>9 + 3</math>. He moves one over to make <math>10 + 2</math>. He says, "This is the best way to do this sum." Do you agree? What other ways can you make 12? Justify which is the best way.</li> </ul>  <ul style="list-style-type: none"> <li>Keeley says she has at least 10 more sweets than Stacey does. What are all the possible amounts of sweets Keeley and Stacey could have from the pile of sweets below?</li> </ul> 


	National Curriculum Statement	All students								
		Fluency	Reasoning	Problem Solving						
Measures	<p>Compare, describe and solve practical problems for: lengths and heights for example, long/short, longer/shorter, tall/short, double/half</p>	<ul style="list-style-type: none"> <li>Complete the sentences based on the picture below using the flashcards.</li> </ul> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>tall</td> <td>shortest</td> <td>tallest</td> </tr> <tr> <td>taller</td> <td>short</td> <td>shorter</td> </tr> </table>  <p>The black tower is tall. It is _____ than the red tower.</p> <p>The blue tower is _____. It is shorter than the red tower.</p> <p>The black tower is the _____. The blue tower is the _____.</p> <ul style="list-style-type: none"> <li>Circle the longest line.</li> </ul>  <ul style="list-style-type: none"> <li>Balraj makes a tower of 4. Ryan makes a tower of 8. Ryan's tower is _____ Balraj's tower.</li> </ul>	tall	shortest	tallest	taller	short	shorter	<ul style="list-style-type: none"> <li>Rick ate half a Mars bar and said, "My chocolate bar is longer now I have eaten some of it." Do you agree? Explain why.</li> <li>Pick two objects. Before you measure them, can you guess which is longer? How do you know?</li> <li>Which piece of string is longer? Explain why you think that?</li> </ul> 	<ul style="list-style-type: none"> <li>Look at the picture below. How many ways can you compare the different objects? Make a list.</li> </ul>  <ul style="list-style-type: none"> <li>Pick up your book. Find 5 items in the room that are shorter than it and 5 items that are longer. Record them in sentences.</li> <li>Helen has a mystery object. She says, "It is shorter than my work table. It is taller than my exercise book." What could Helen's object be?</li> </ul>
		tall	shortest	tallest						
taller	short	shorter								

	National Curriculum Statement	All students		
		Fluency	Reasoning	Problem Solving
Measures	Measure and begin to record lengths and heights.	<ul style="list-style-type: none"> <li>Find an object:                             <ol style="list-style-type: none"> <li>Bigger than 10cm</li> <li>Shorter than 7cm</li> <li>Double your pencil</li> </ol> </li> <li>Estimate the length of your exercise book then measure it. Were you close?</li> <li>Use a ruler to measure how long these lines are.</li> </ul>	<ul style="list-style-type: none"> <li>Sal wants to measure the length of his house. He suggests using his feet to do this. Do you think this is the best way? Explain why.</li> <li>I measure a pencil at 9cm. My friend measures another at 7cm. Without looking at a ruler, which is bigger? How do you know?</li> <li><b>True or false?</b> Everything is measured in cm. Prove it.</li> </ul>	<ul style="list-style-type: none"> <li>Here is a ruler. Here is a book bigger in length than the ruler. Find the length of the book.</li> </ul>  <ul style="list-style-type: none"> <li>Gather 6 objects from around the classroom. Estimate them first then measure them. Work out the difference between your estimate and the actual measurement.</li> </ul>
				

	National Curriculum Statement	All students					
		Fluency	Reasoning	Problem Solving			
Multiplication and Division	Count in multiples of twos, fives and tens.	<ul style="list-style-type: none"> <li>What are the first 5 multiples of 10?</li> <li>Work out <math>6 \times 5</math></li> <li>Find the missing number:  <math>2 \times \underline{\quad} = 18</math>  <math>\underline{\quad} \times 5 = 35</math>  <math>90 = 10 \times \underline{\quad}</math></li> </ul>	<ul style="list-style-type: none"> <li>Amrit is counting in twos. She says the number 11. Explain the mistake she has made.</li> <li>Balraj says it's easy to know if a number is a multiple of 5. Can you explain why?</li> <li>Danielle says, "I know 50 is in the ten times table so I know it is also in the five times table." Is she correct? Explain why.</li> </ul>	<ul style="list-style-type: none"> <li>Are there any numbers in the 2 times table that are also in the 5 and 10 times table? Have you found them all? Have you used a strategy to find them all?</li> <li>If you know the following information                     <table border="1" style="margin: 10px auto;"> <tr> <td><math>2 \times 4 = 8</math></td> </tr> <tr> <td><math>5 \times 6 = 30</math></td> </tr> <tr> <td><math>7 \times 10 = 70</math></td> </tr> </table> <p>What other facts do you know? You can use addition, subtraction and multiplication.</p> </li> <li>There are 8 children sat on a table. They each have to complete 2 calculations. How many calculations are completed altogether?</li> </ul>	$2 \times 4 = 8$	$5 \times 6 = 30$	$7 \times 10 = 70$
$2 \times 4 = 8$							
$5 \times 6 = 30$							
$7 \times 10 = 70$							

	National Curriculum Statement	All students		
		Fluency	Reasoning	Problem Solving
Multiplication and Division	<p>Solve one step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.</p>	<ul style="list-style-type: none"> <li>Use counters:                             <ol style="list-style-type: none"> <li>To double 3</li> <li>To halve 8</li> </ol> </li> <li>Harry has 5 friends. Each friend gives him 3 sweets. How many sweets does he have altogether?</li> <li>Kayleigh has 30 flowers to share between 3 vases equally. How many flowers can be put in each vase?</li> </ul>	<ul style="list-style-type: none"> <li>Saskia says, 'You can double any number but you can only halve some numbers.' Can you prove this using counters or explain it to me?</li> <li>Here is an array.                             <div style="text-align: center;">  </div> <p>Mandy says, "I can find four facts from this." Do you agree? Convince me!</p> </li> <li><b>True or false?</b>  <math>2 + 2 + 2 + 2 + 2</math>  <math>=</math>  <math>2 \times 5</math>                              Explain why.                         </li> </ul>	<ul style="list-style-type: none"> <li>6 goats have twins. How many goats are born?                             <div style="text-align: center;">  </div> </li> <li>How many multiplication and division facts can you make from using 12 cubes?</li> <li>15 sweets are shared equally between 3 children. How many do they get each? Write down what different objects you could use to solve this. Write an explanation to your partner to help them solve it. Write your own question.</li> </ul>

	National Curriculum Statement	All students		
		Fluency	Reasoning	Problem Solving
Fractions	<p>Recognise, find and name a half as one of two equal parts of an object, shape or quantity.</p>	<ul style="list-style-type: none"> <li>Shade a half of each object.  </li> <li>Find <math>\frac{1}{2}</math> of 8</li> <li>How many halves of the apples below have been eaten?  </li> </ul>	<ul style="list-style-type: none"> <li>Arvind has a shape that is split into 4 equal parts. He shades in 2 parts and says "I have shaded half of my shape." Do you agree? Explain why.</li> <li><b>True or false?</b> I use the 2 times table to find a half of an amount. Convince me!</li> <li>Matthew is finding halves. He says, "It is hard to find half of an odd number." Do you agree? Explain why.</li> </ul>	<ul style="list-style-type: none"> <li>Can you split each of these shapes into two equal halves? Explain why for each shape.  </li> <li>Here is a tower made from cubes.                        Which tower is showing double this tower? Explain why using the word 'half'.                     <ul style="list-style-type: none"> <li>A tower of 7 cubes.</li> <li>A tower of 8 cubes.</li> <li>A tower of 6 cubes.</li> </ul> </li> </ul>

	National Curriculum Statement	All students										
		Fluency	Reasoning	Problem Solving								
Fractions	<p>Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.</p>	<ul style="list-style-type: none"> <li>Shade a quarter of each shape.</li> </ul>  <ul style="list-style-type: none"> <li>Find <math>\frac{1}{4}</math> of 12.</li> <li>How many quarters are in 2 whole apples?</li> </ul>	<ul style="list-style-type: none"> <li>Sophie has split a square into 2 equal parts. She says, "I can also find one quarter of this square." Do you agree? Explain why.</li> <li><b>True or false?</b> If I can find half of an amount, this helps me to find a quarter of an amount.</li> <li><b>Sometimes, always, never.</b> 4 quarters are always made up of 4 equal parts.</li> </ul>	<ul style="list-style-type: none"> <li>Get a circle template, rectangle template and square template. Each template represents 1 whole. Can you these into quarters? Are they equal?</li> <li>Use a bag of skittles to start with different whole numbers. How many different quarter amounts can you find? Record them in a table.</li> </ul> <table border="1" data-bbox="1487 708 1966 839"> <thead> <tr> <th>Whole number</th> <th><math>\frac{1}{4}</math></th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	Whole number	$\frac{1}{4}$						
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