

# Year 4

Mastery Overview  
Autumn

## 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.

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

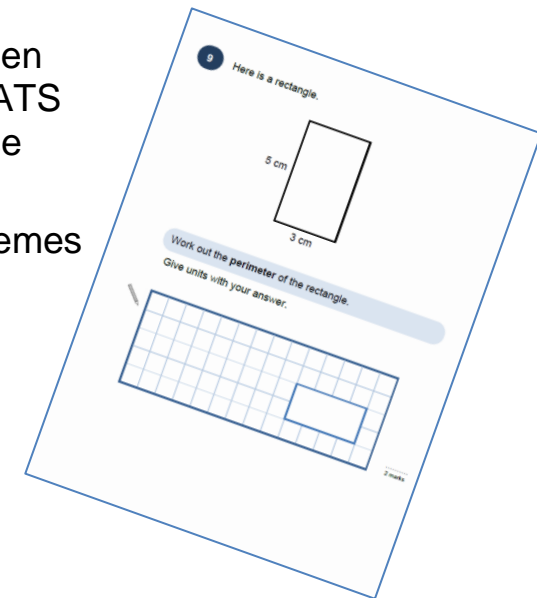
Alongside these curriculum overviews, we also provide a free assessment for each term's plan. Each assessment will be made up of two parts:

**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. The questions use strategies and methods promoted through the schemes of learning.



## 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;

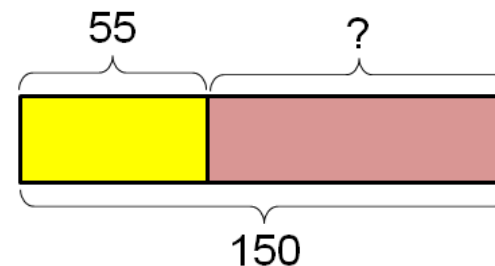
- have number at their heart. A large proportion of time is spent reinforcing number to build competency
- ensure teachers stay in the required key stage and support the ideal of depth before breadth.
- ensure students have the opportunity to stay together as they work through the schemes as a whole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



## 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
- 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.

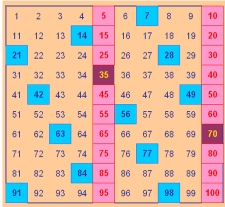
## Year 4 Overview

|        | 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 |                    |                   |         |




















































# Term by Term Objectives

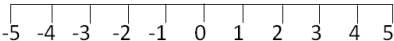
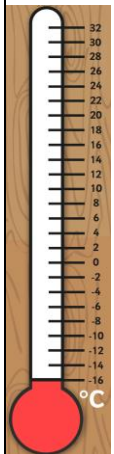
# Year 4

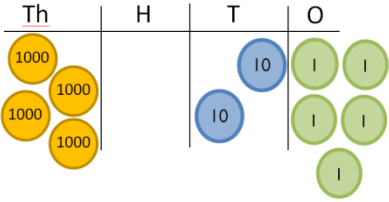
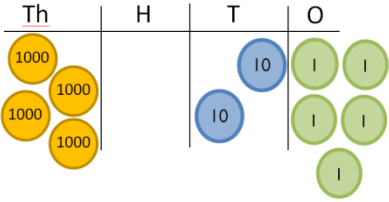

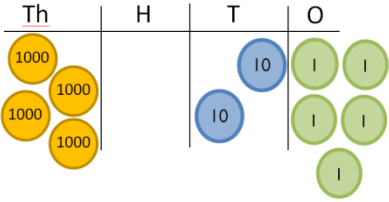
| Year Group                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |        | Y4     | Term                                                                                                                                                                                                                                                                                                                                                                                              | Autumn |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |        |         |                                                                                              |         |  |  |  |
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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>Number – place value</u><br/>Count in multiples of 6, 7, 9, 25 and 1000.</p> <p>Find 1000 more or less than a given number.</p> <p>Count backwards through zero to include negative numbers.</p> <p>Recognise the place value of each digit in a four digit number (thousands, hundreds, tens and ones)</p> <p>Order and compare numbers beyond 1000.</p> <p>Identify, represent and estimate numbers using different representations.</p> <p>Round any number to the nearest 10, 100 or 1000.</p> <p>Solve number and practical problems that involve all of the above and with increasingly large positive numbers.</p> <p>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.</p> |        |        | <p><u>Number- addition and subtraction</u><br/>Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.</p> <p>Estimate and use inverse operations to check answers to a calculation.</p> <p>Solve addition and subtraction two step problems in contexts, deciding which operations and methods to use and why.</p> |        |        | <p><u>Number – multiplication and division</u><br/>Recall and use multiplication and division facts for multiplication tables up to 12 x 12.</p> <p>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.</p> <p>Recognise and use factor pairs and commutatively in mental calculations.</p> <p>Multiply two digit and three digit numbers by a one digit number using formal written layout.</p> <p>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.</p> |        |        |         | <p><u>Measurement- Area</u><br/>Find the area of rectilinear shapes by counting squares.</p> |         |  |  |  |


|             | National Curriculum Statement               | All students                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |           |                 |    |    |  |     |  |  |     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |    |    |    |    |    |    |    |    |
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|             |                                             | Fluency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Reasoning | Problem Solving |    |    |  |     |  |  |     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |    |    |    |    |    |    |    |    |
| Place Value | Count in multiples of 6, 7, 9, 25 and 1000. | <ul style="list-style-type: none"> <li>Find the next two numbers<br/>6, 12, 18, 24,<br/>7, 14, 21, 28, 35,<br/>9, 18, 27, 36<br/>25, 50, 75,<br/>5000, 6000, 7000</li> <li>Fill in the missing numbers:<br/><table border="1" style="margin: 5px 0;"><tr><td>14</td><td></td><td>28</td><td>35</td><td></td></tr></table><br/><table border="1" style="margin: 5px 0;"><tr><td>100</td><td></td><td></td><td>175</td><td>200</td></tr></table></li> <li>Hassan counts on in 25's from 250. Circle the numbers he will say.<br/><br/><b>990, 125, 300, 440, 575, 700</b></li> </ul> | 14        |                 | 28 | 35 |  | 100 |  |  | 175 | 200 | <ul style="list-style-type: none"> <li>What is the same and what is different about these two number sequences?<br/>6, 12, 18, 24, 30.....<br/>45, 36, 27, 18, 9.....</li> <li>Convince me that the number 14 will be in this sequence if it is continued.<br/>49, 42, 35, 28 .....</li> <li><b>Always, Sometimes, Never</b><br/><br/>Hayley is counting in 25s and 1,000s. She says:<br/>- Multiples of 1,000 are also multiples of 25.<br/>- Multiples of 25 are therefore multiples of 1,000.<br/><br/>Are these statements always, sometimes or never true?</li> </ul> | <ul style="list-style-type: none"> <li>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?</li> <li>Here is a hundred square.<br/><br/><br/>Some numbers have been shaded in blue, and some in pink. Can you notice the pattern?<br/>Why are some numbers maroon?<br/><table border="1" style="margin: 10px auto;"><tr><td>34</td><td>35</td><td>36</td></tr><tr><td>44</td><td>45</td><td>46</td></tr><tr><td>54</td><td>55</td><td>56</td></tr></table></li> </ul> | 34 | 35 | 36 | 44 | 45 | 46 | 54 | 55 | 56 |
|             |                                             | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           | 28              | 35 |    |  |     |  |  |     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |    |    |    |    |    |    |    |    |
| 100         |                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 175       | 200             |    |    |  |     |  |  |     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |    |    |    |    |    |    |    |    |
| 34          | 35                                          | 36                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |                 |    |    |  |     |  |  |     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |    |    |    |    |    |    |    |    |
| 44          | 45                                          | 46                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |                 |    |    |  |     |  |  |     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |    |    |    |    |    |    |    |    |
| 54          | 55                                          | 56                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |                 |    |    |  |     |  |  |     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |    |    |    |    |    |    |    |    |




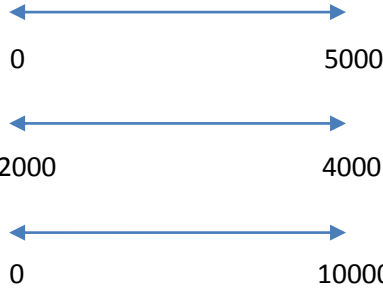
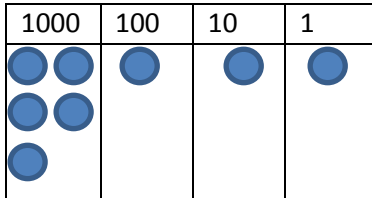
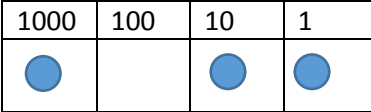




|                                                                                     | National Curriculum Statement                                                                                                                                           | All students                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           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                                       | Reasoning                                                                            | Problem Solving |           |  |      |  |      |  |  |  |  |     |    |   |   |   |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                    |                                                                                     |                                                                                                                                                                         |                                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                                                    |                                                                                     |      |                                                                                     |  |  |  |
| Place Value                                                                         | Find 1000 more or less than a given number.                                                                                                                             | <ul style="list-style-type: none"> <li>Find the missing value<br/><math>3,891 + \bigcirc = 4,891</math></li> <li>Complete the table                             <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>1000 more</th> <th>Starting number</th> <th>1000 less</th> </tr> </thead> <tbody> <tr> <td></td> <td>3467</td> <td></td> </tr> <tr> <td>2219</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>665</td> </tr> </tbody> </table> </li> <li>Write the number represented in the place value chart.                             <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Th</th> <th>H</th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td></td> <td> </td> <td> </td> <td></td> </tr> <tr> <td></td> <td> </td> <td></td> <td></td> </tr> </tbody> </table> <p>Add 3 thousands. Write the new number.<br/>What has changed?</p> </li> </ul> | 1000 more                                                                            | Starting number | 1000 less |  | 3467 |  | 2219 |  |  |  |  | 665 | Th | H | T | O |  |   |   |  |  |   |  |  | <ul style="list-style-type: none"> <li>Henry says 'When I add 1,000 to 4,325 I only have to change 1 digit.' Is he correct? Which digit does he need to change?</li> <li>Phil says that he can make the number that is 1,000 less than 3,512 using the number cards 1, 2, 3 and 4. Do you agree? Explain your answer.</li> <li>Add one thousand to 2,554<br/>Add ten hundreds to 2,554<br/>What do you notice? Why does this happen?</li> </ul> | <ul style="list-style-type: none"> <li>Fill in the boxes by finding the patterns.                             <table border="1" style="margin-left: 20px;"> <tbody> <tr> <td>3210</td> <td></td> <td>1210</td> <td></td> </tr> <tr> <td>3110</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>6010</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> </li> <li>Lucy thinks of a number. She says 'The number 1,000 more than my number has the digits 1,2,3 and 4. The number 1,000 less uses the digits 1, 3 and 4' What number is Lucy thinking of?</li> </ul> | 3210 |  | 1210 |  | 3110 |  |  |  |  |  |  | 6010 |  |  |  |  |
|                                                                                     |                                                                                                                                                                         | 1000 more                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              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| 3210                                                                                |                                                                                      | 1210                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| 3110                                                                                |                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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|             | National Curriculum Statement                             | All students                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|             |                                                           | Fluency                                                                                                                                                                                                                                                                                                                                                                                                   | Reasoning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Problem Solving                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Place Value | Count backwards through zero to include negative numbers. | <ul style="list-style-type: none"> <li>Find the missing numbers in the sequences:<br/>               5, 4, 3, 2, 1, 0, <u>  </u>, -2, <u>  </u><br/>               8, 6, 4, 2, 0, <u>  </u>, -4, <u>  </u><br/>               10, 6, 2, -2, <u>  </u>, -10, <u>  </u></li> <li>What temperature is 10 degrees below 3 degrees Celsius?</li> <li>Use the number line to complete the questions.</li> </ul> | <ul style="list-style-type: none"> <li>Anna is counting down from 11 in fives. Does she say -11? Explain your reasoning.</li> <li>Harris is finding the missing numbers in this sequence.<br/><br/> <math>\underline{\quad}, \underline{\quad}, 5, \underline{\quad}, -5</math><br/><br/>               He writes down:<br/><br/>               15, 10, 5, 0, -0, -5<br/><br/>               Explain the mistake Harris has made.</li> <li>Sam counted down in 3's until he reached -18. He started at 21. What was the tenth number he said? Prove it.</li> </ul> | <ul style="list-style-type: none"> <li>Fred is a police officer. He is chasing a suspect on Floor 5 of a building. The suspect jumps into the lift and presses -1. Fred has to run down the stairs, how many flights must he run down?</li> <li>Draw the new temperature on the thermometer after each temperature change:               <ul style="list-style-type: none"> <li>-In the morning it is 4 degrees, it drops 8 degrees.</li> <li>-In the afternoon it is 12 degrees Celsius, overnight it drops by 14 degrees.</li> <li>-It is 1 degree, it drops by 11 degrees.</li> </ul> </li> </ul> |
|             |                                                           |                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

|                                                                                      | National Curriculum Statement                                                                              | All students                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |                 |   |   |                                                                                      |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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|                                                                                      |                                                                                                            | Fluency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Reasoning | Problem Solving |   |   |                                                                                      |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Place Value                                                                          | <p>Recognise the place value of each digit in a four digit number (thousands, hundreds, tens and ones)</p> | <ul style="list-style-type: none"> <li>Find the value of <math>\bigcirc</math> in each statement.               <math display="block">\bigcirc = 3,000 + 500 + 40</math> <math display="block">2,000 + \bigcirc + 2 = 2702</math> <math display="block">\bigcirc + 40 + 5 = 3045</math> </li> <li>Write the value of the underlined digit.               <math display="block">\underline{3},462, 5,\underline{1}24, 7,0\underline{2}4, 4,7\underline{2}0</math> </li> <li>1,423 is made up of               <ul style="list-style-type: none"> <li>_ thousands,</li> <li>_ hundreds,</li> <li>_ tens</li> <li>_ ones</li> </ul> </li> <li>What number has been made in the place value chart?               <table border="1" style="margin: 10px auto;"> <thead> <tr> <th>Th</th> <th>H</th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">  </td> <td></td> <td></td> <td></td> </tr> </tbody> </table> </li> </ul> | Th        | H               | T | O |  |  |  |  | <ul style="list-style-type: none"> <li>Show the value of 5 in each of these numbers.<br/>5,462, 345, 652, 7,523<br/>Explain how you know.</li> <li>Create 5 four digit numbers where the tens number is 2 and the digits add up to 9. Order them from smallest to largest.</li> <li>Jeff says               <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0; text-align: center;"> <p><b>My number has fifty three hundreds, 6 tens and 4 ones</b></p> </div> <p>Hafsa says</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0; text-align: center;"> <p><b>My number has five thousands, three hundreds and 64 ones</b></p> </div> <p>Who has the biggest number?<br/>Explain why.</p> </li> </ul> | <ul style="list-style-type: none"> <li>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?</li> <li>Use the clues to find the missing digits.               <div style="text-align: center; margin: 10px 0;">  </div> <p>The thousands and tens digit multiply together to make 24.<br/>The hundreds and tens digit have a digit total of 9.<br/>The ones digit is double the thousands digit. The whole number has a digit total of 18.</p> <li>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.               <p style="text-align: center;">3,421, 1,435, 3,431, 1,243</p> <p>A has a digit total of 10.<br/>B and C have the same thousands digit.<br/>In C and D the tens and hundreds digits add up to 7.<br/>D has the largest digit total.</p> </li> </li></ul> |
| Th                                                                                   | H                                                                                                          | T                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | O         |                 |   |   |                                                                                      |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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|             | National Curriculum Statement                 | All students                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |                 |   |   |        |      |     |    |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |   |   |   |   |   |  |   |   |  |   |   |   |   |   |  |   |  |   |   |   |   |   |  |   |  |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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|             |                                               | Fluency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Reasoning | Problem Solving |   |   |        |      |     |    |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |   |   |   |   |   |  |   |   |  |   |   |   |   |   |  |   |  |   |   |   |   |   |  |   |  |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Place Value | <p>Order and compare numbers beyond 1000.</p> | <ul style="list-style-type: none"> <li>Write these numbers in order from smallest to largest.<br/>1,324, 1,423, 1,342, 1,432, 2,341</li> <li>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.<br/><table border="1" style="margin: 10px auto;"><tr><td>4</td><td>0</td><td>5</td><td>3</td></tr></table></li> <li>Using four counters in the place value grid below make as many 4 digit numbers as possible. Put them in ascending order.<br/><div style="text-align: center; margin: 10px auto;"><br/><table border="1" style="margin: 0 auto;"><tr><th>1,000s</th><th>100s</th><th>10s</th><th>1s</th></tr><tr><td> </td><td> </td><td> </td><td> </td></tr></table></div></li> </ul> | 4         | 0               | 5 | 3 | 1,000s | 100s | 10s | 1s |  |  |  |  | <ul style="list-style-type: none"> <li>If you wrote these numbers in order from largest to smallest which number would be fourth?<br/>5,331, 1,335, 1,533, 5,313, 5,133, 3,513, 3,531.<br/>Explain the process of ordering.</li> <li>Put one number in each box so that the list of numbers is ordered largest to smallest.<br/><table border="1" style="margin: 10px auto;"><tr><th>Th</th><th>H</th><th>T</th><th>O</th></tr><tr><td>1</td><td>1</td><td> </td><td>3</td></tr><tr><td>1</td><td> </td><td>2</td><td>7</td></tr><tr><td>1</td><td>2</td><td>5</td><td> </td></tr><tr><td>1</td><td> </td><td>5</td><td>9</td></tr><tr><td>1</td><td>3</td><td>0</td><td> </td></tr><tr><td>1</td><td> </td><td>1</td><td>5</td></tr></table></li> <li><b>True or False</b><br/>You must look at the highest place value column first when ordering any numbers.</li> </ul> | Th | H | T | O | 1 | 1 |  | 3 | 1 |  | 2 | 7 | 1 | 2 | 5 |  | 1 |  | 5 | 9 | 1 | 3 | 0 |  | 1 |  | 1 | 5 | <ul style="list-style-type: none"> <li>I am thinking of a number. It is greater than 1,500 but smaller than 2,000. 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.</li> <li>Lola has ordered five 4 digit numbers. The smallest number is 3,450, the largest number is 3,650. All the other numbers have digit totals of 20. What could the other three numbers be?</li> <li>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.             <ol style="list-style-type: none"> <li>Largest odd number</li> <li>Largest even number</li> <li>Largest multiple of 3</li> <li>Smallest multiple of 5</li> <li>Number closest to 5000.</li> </ol> </li> </ul> |
| 4           | 0                                             | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 3         |                 |   |   |        |      |     |    |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |   |   |   |   |   |  |   |   |  |   |   |   |   |   |  |   |  |   |   |   |   |   |  |   |  |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1,000s      | 100s                                          | 10s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1s        |                 |   |   |        |      |     |    |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |   |   |   |   |   |  |   |   |  |   |   |   |   |   |  |   |  |   |   |   |   |   |  |   |  |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| Th          | H                                             | T                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | O         |                 |   |   |        |      |     |    |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |   |   |   |   |   |  |   |   |  |   |   |   |   |   |  |   |  |   |   |   |   |   |  |   |  |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1           | 1                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 3         |                 |   |   |        |      |     |    |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |   |   |   |   |   |  |   |   |  |   |   |   |   |   |  |   |  |   |   |   |   |   |  |   |  |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| 1           | 2                                             | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |                 |   |   |        |      |     |    |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |   |   |   |   |   |  |   |   |  |   |   |   |   |   |  |   |  |   |   |   |   |   |  |   |  |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1           |                                               | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 9         |                 |   |   |        |      |     |    |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |   |   |   |   |   |  |   |   |  |   |   |   |   |   |  |   |  |   |   |   |   |   |  |   |  |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1           | 3                                             | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |                 |   |   |        |      |     |    |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |   |   |   |   |   |  |   |   |  |   |   |   |   |   |  |   |  |   |   |   |   |   |  |   |  |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1           |                                               | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 5         |                 |   |   |        |      |     |    |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |   |   |   |   |   |  |   |   |  |   |   |   |   |   |  |   |  |   |   |   |   |   |  |   |  |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

|             | National Curriculum Statement                                             | All students                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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|             |                                                                           | Fluency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Reasoning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Problem Solving                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Place Value | Identify, represent and estimate numbers using different representations. | <ul style="list-style-type: none"> <li>What number is represented below?<br/> <br/>                     I add 7 hundreds and 4 tens to it. What is the new number?</li> <li>Show 1600 on the number line.<br/> </li> <li>This ten frame represents 1000 when it is full.<br/> <br/>                     What number is represented in the ten frame?</li> </ul> | <ul style="list-style-type: none"> <li>Place 2500 on the number lines below.<br/> <br/>                     Has the place on the number line changed? Why?</li> <li>Amelia says 'The number in the place value grid is the largest number you can make with 8 counters.'<br/>                     Do you agree?<br/>                     Prove your answer.<br/> </li> </ul> | <ul style="list-style-type: none"> <li>Using 3 counters and the place value grid below, how many 4 digit numbers can you make?<br/> </li> <li>Dan was making a 4 digit number using place value counters. He dropped two of his counters on the floor. These are the counters he had left.<br/> <br/>                     What number could he have made?</li> <li>If the arrow on the number line represents 1788, what could the start and end numbers be?<br/> </li> </ul> |

|                              | National Curriculum Statement                                                                                                                                                                      | All students                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                 |              |              |     |  |  |  |      |  |  |  |      |  |  |  |                              |                |                               |       |                            |       |  |                        |  |  |                       |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------|--------------|--------------|-----|--|--|--|------|--|--|--|------|--|--|--|------------------------------|----------------|-------------------------------|-------|----------------------------|-------|--|------------------------|--|--|-----------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              |                                                                                                                                                                                                    | Fluency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Reasoning  | Problem Solving |              |              |     |  |  |  |      |  |  |  |      |  |  |  |                              |                |                               |       |                            |       |  |                        |  |  |                       |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Place Value                  | Round any number to the nearest 10, 100 or 1000.                                                                                                                                                   | <ul style="list-style-type: none"> <li>Complete the tables</li> </ul> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th></th> <th>Nearest 10</th> <th>Nearest 100</th> <th>Nearest 1000</th> </tr> </thead> <tbody> <tr> <td>667</td> <td></td> <td></td> <td></td> </tr> <tr> <td>1274</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2495</td> <td></td> <td></td> <td></td> </tr> </tbody> </table><br><table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Lowest possible whole number</th> <th>Rounded number</th> <th>Highest possible whole number</th> </tr> </thead> <tbody> <tr> <td>4,500</td> <td>5,000 to the nearest 1,000</td> <td>5,499</td> </tr> <tr> <td></td> <td>300 to the nearest 100</td> <td></td> </tr> <tr> <td></td> <td>___ to the nearest 10</td> <td>74</td> </tr> </tbody> </table> |            | Nearest 10      | Nearest 100  | Nearest 1000 | 667 |  |  |  | 1274 |  |  |  | 2495 |  |  |  | Lowest possible whole number | Rounded number | Highest possible whole number | 4,500 | 5,000 to the nearest 1,000 | 5,499 |  | 300 to the nearest 100 |  |  | ___ to the nearest 10 | 74 | <ul style="list-style-type: none"> <li>Caroline thinks that the largest whole number that rounds to 400 is 449. Is she correct? Explain why.</li> <li>Henry says<br/> <div style="border: 1px solid black; border-radius: 15px; padding: 5px; display: inline-block; margin: 10px 0;">                     '747 to the nearest 10 is 740.'                 </div>                     Do you agree with Henry? Explain why.</li> <li>A number rounded to the nearest 10 is 550. What is the smallest possible number it could be?</li> </ul> | <ul style="list-style-type: none"> <li>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?</li> <li>Two different 2 digit numbers both round to 40 when rounded to the nearest ten. The sum of the two numbers is 79. What could the 2 number be? What are all the possibilities?</li> <li>Using the digit cards 0-9, can you make numbers that fit the following rules?                         <ol style="list-style-type: none"> <li>When rounded to the nearest 10, I round to 20.</li> <li>When rounded to the nearest 10, I round to 10.</li> <li>When rounded to the nearest 1000, I round to 1000.</li> <li>When rounded to the nearest 100, I round to 7200.</li> </ol> </li> </ul> |
|                              |                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Nearest 10 | Nearest 100     | Nearest 1000 |              |     |  |  |  |      |  |  |  |      |  |  |  |                              |                |                               |       |                            |       |  |                        |  |  |                       |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 667                          |                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |                 |              |              |     |  |  |  |      |  |  |  |      |  |  |  |                              |                |                               |       |                            |       |  |                        |  |  |                       |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 1274                         |                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |                 |              |              |     |  |  |  |      |  |  |  |      |  |  |  |                              |                |                               |       |                            |       |  |                        |  |  |                       |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 2495                         |                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |                 |              |              |     |  |  |  |      |  |  |  |      |  |  |  |                              |                |                               |       |                            |       |  |                        |  |  |                       |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Lowest possible whole number | Rounded number                                                                                                                                                                                     | Highest possible whole number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |                 |              |              |     |  |  |  |      |  |  |  |      |  |  |  |                              |                |                               |       |                            |       |  |                        |  |  |                       |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 4,500                        | 5,000 to the nearest 1,000                                                                                                                                                                         | 5,499                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                 |              |              |     |  |  |  |      |  |  |  |      |  |  |  |                              |                |                               |       |                            |       |  |                        |  |  |                       |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                              | 300 to the nearest 100                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |                 |              |              |     |  |  |  |      |  |  |  |      |  |  |  |                              |                |                               |       |                            |       |  |                        |  |  |                       |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                              | ___ to the nearest 10                                                                                                                                                                              | 74                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |                 |              |              |     |  |  |  |      |  |  |  |      |  |  |  |                              |                |                               |       |                            |       |  |                        |  |  |                       |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                              | <ul style="list-style-type: none"> <li>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?</li> </ul> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |                 |              |              |     |  |  |  |      |  |  |  |      |  |  |  |                              |                |                               |       |                            |       |  |                        |  |  |                       |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |


|             | National Curriculum Statement                                                                                          | All students                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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|             |                                                                                                                        | Fluency                                                                                                                                                                                                                                                                                                                                                                                                            | Reasoning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Problem Solving                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Place Value | <p>Solve number and practical problems that involve all of the above and with increasingly large positive numbers.</p> | <ul style="list-style-type: none"> <li>Use <math>&lt;</math>, <math>&gt;</math> or <math>=</math></li> </ul> <p>Th   H   T   O</p> <p>1000   100   100   10   10   1</p> <p>1000   100   10   1</p> <p>○</p> <p>Th   H   T   O</p> <p>1000   100   100   10   10   1</p> <p>100   100   10   1</p> <ul style="list-style-type: none"> <li>How many ways can you write this number?</li> </ul> <p>e.g. 314 ones</p> | <ul style="list-style-type: none"> <li>Organise these numbers into different groups.</li> </ul> <p>16, 40, 7, 26, 55, 39, 24, 2, 30</p> <p>How have you organised them?<br/>Can you add one more number to each category?<br/>Can you a friend guess how you have organised them?<br/>Would they organise them differently? <ul style="list-style-type: none"> <li>Odd one out.</li> </ul> <div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; margin: 5px;">12</div> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; margin: 5px;">25</div> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; margin: 5px;">8</div> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; margin: 5px;">40</div> </div> <p>Which of these numbers is the odd one out? Why?<br/>Is there a different answer?<br/>How many answers can you find?</p> </p> | <ul style="list-style-type: none"> <li>Annie is thinking of a number. She says these clues</li> </ul> <div style="border: 2px solid black; border-radius: 20px; padding: 10px; margin: 10px 0;"> <p>It has 4 digits.<br/>The column of the highest value is the greatest number it could be.<br/>The tens column is an even number in the 3 times table.<br/>The hundreds column is half of the ones column.</p> </div> <p>What could Annie's number be?<br/>What are all the possibilities?<br/>Create your own question for a friend.</p> <ul style="list-style-type: none"> <li><b>Guess my rule.</b><br/>Think of two rules for a Venn diagram. Other players say numbers for you to sort. They begin to guess the headings of the Venn diagram based on where the numbers are placed.</li> </ul> |

|             | National Curriculum Statement                                                                                                                  | All students                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |           |                 |    |       |    |  |  |    |    |   |    |       |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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|             |                                                                                                                                                | Fluency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Reasoning | Problem Solving |    |       |    |  |  |    |    |   |    |       |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Place Value | <p>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.</p> | <ul style="list-style-type: none"> <li>Match the Arabic numeral to the correct Roman numeral.                             <table border="1" style="margin-left: 20px;"> <tbody> <tr><td>15</td><td>LV</td></tr> <tr><td>55</td><td>XCIII</td></tr> <tr><td>39</td><td></td></tr> <tr><td></td><td>XV</td></tr> <tr><td>88</td><td>C</td></tr> <tr><td>93</td><td>XXXIX</td></tr> </tbody> </table> <p>Fill in the missing boxes.</p> </li> <li>Convert the Roman numeral into Arabic numerals.<br/>XVII - XXIV - XIX</li> <li>Order the numbers in ascending order.                             <table border="1" style="margin-left: 20px;"> <tbody> <tr><td>X</td><td>V</td><td>8</td></tr> </tbody> </table> </li> </ul> | 15        | LV              | 55 | XCIII | 39 |  |  | XV | 88 | C | 93 | XXXIX | X | V | 8 | <ul style="list-style-type: none"> <li>Look at the multiples of 10. Is there a pattern? What do you notice?</li> <li>Bobby says                             <div style="border: 2px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p>In the 10 times table, all the numbers have a zero. Therefore, in Roman numerals all multiples of 10 have an X</p> </div> <p>Is he correct? Prove it.</p> </li> <li>What is today's short date in Roman numerals? How do you know?</li> </ul> | <ul style="list-style-type: none"> <li><b>Treasure hunt.</b><br/>Complete the trail by adding the Roman Numerals together as you go.</li> <li>If you know 1 – 100 in Roman numerals can you guess the numbers up to 1000?</li> <li>Order these answers from greatest to smallest                             <p>XXII + XXXV =<br/>XXXI + LIV =<br/>LXIII + XXVI =<br/>LV + XXII =<br/>LXXI + XXXVIII =<br/>LXV + XXXII =</p> </li> </ul> |
| 15          | LV                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           |                 |    |       |    |  |  |    |    |   |    |       |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 55          | XCIII                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           |                 |    |       |    |  |  |    |    |   |    |       |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 39          |                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           |                 |    |       |    |  |  |    |    |   |    |       |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|             | XV                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           |                 |    |       |    |  |  |    |    |   |    |       |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 88          | C                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           |                 |    |       |    |  |  |    |    |   |    |       |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 93          | XXXIX                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           |                 |    |       |    |  |  |    |    |   |    |       |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| X           | V                                                                                                                                              | 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           |                 |    |       |    |  |  |    |    |   |    |       |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                          |





|                          | National Curriculum Statement                                                                                                                | All students                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |   |   |   |   |   |   |   |   |   |
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|                          |                                                                                                                                              | Fluency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Reasoning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Problem Solving                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |   |   |   |   |   |   |   |   |   |
| Addition and Subtraction | <p>Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.</p> | <ul style="list-style-type: none"> <li>Complete the part-whole models                     <div style="display: flex; flex-direction: column; align-items: center;"> <div style="display: flex; justify-content: center; gap: 20px;"> <div style="text-align: center;"> <p>2300</p> </div> <div style="text-align: center;"> <p>3886</p> </div> </div> <div style="display: flex; justify-content: center; gap: 20px; margin-top: 20px;"> <div style="text-align: center;"> <p>3886</p> </div> <div style="text-align: center;"> <p>5003</p> </div> </div> </div> </li> <li>Choose whether to solve these questions mentally or using written methods.                     <div style="display: flex; flex-wrap: wrap; justify-content: space-around; margin-top: 20px;"> <div style="width: 45%; text-align: center;">54 + 46</div> <div style="width: 45%; text-align: center;">540 + 460</div> <div style="width: 45%; text-align: center;">34 + 69 + 26</div> <div style="width: 45%; text-align: center;">298 + 342</div> <div style="width: 45%; text-align: center;">566 + 931</div> <div style="width: 45%; text-align: center;">999 + 999</div> <div style="width: 45%; text-align: center;">1,547 + 2742</div> <div style="width: 45%; text-align: center;">1,999 + 364</div> </div> </li> </ul> | <ul style="list-style-type: none"> <li>Complete the calculation                     <div style="text-align: center; margin-top: 20px;"> <math display="block">\begin{array}{r} \square 04 \\ - 2\square 1 \\ \hline 34\square \end{array}</math> </div> </li> <li>Desani adds three numbers together that total 7,170                     <div style="text-align: center; margin-top: 20px;"> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; width: fit-content; margin: 10px auto;"> <p>They all have 4 digits.<br/>They are all multiples of 5</p> </div> <p>What could the numbers be?<br/>Prove it.</p> </div> </li> </ul> | <ul style="list-style-type: none"> <li>A game to play for two people. The aim of the game is to get a number as close to 5,000 as possible. Each child rolls a 1-6 die and chooses where to put the number on their. Once they have each filled their grid, they add up their totals to see who is the closest.                     <div style="text-align: center; margin-top: 20px;"> <table border="1" style="border-collapse: collapse; width: 100px;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px; text-align: center;">?</td><td style="width: 20px; height: 20px; text-align: center;">?</td><td style="width: 20px; height: 20px; text-align: center;">?</td><td style="width: 20px; height: 20px; text-align: center;">?</td></tr> <tr><td style="width: 20px; height: 20px; text-align: center;">+</td><td style="width: 20px; height: 20px; text-align: center;">?</td><td style="width: 20px; height: 20px; text-align: center;">?</td><td style="width: 20px; height: 20px; text-align: center;">?</td><td style="width: 20px; height: 20px; text-align: center;">?</td></tr> </table> </div> </li> <li>All of the digits below are either a 3 or a 9. Can you work out each digit?                     <div style="text-align: center; margin-top: 20px;"> <math display="block">7,338 = \text{????} + \text{????}</math> </div> </li> <li>Work out the value of each shape                     <div style="margin-top: 20px;"> <div style="display: flex; align-items: center; gap: 10px;"> <div style="text-align: center;">○</div> <div>+</div> <div style="text-align: center;">△</div> <div>=</div> <div style="text-align: center;">16</div> </div> <div style="display: flex; align-items: center; gap: 10px; margin-top: 10px;"> <div style="text-align: center;">○</div> <div>+</div> <div style="text-align: center;">○</div> <div>+</div> <div style="text-align: center;">△</div> <div>=</div> <div style="text-align: center;">25</div> </div> <div style="display: flex; align-items: center; gap: 10px; margin-top: 10px;"> <div style="text-align: center;">○</div> <div>+</div> <div style="text-align: center;">△</div> <div>+</div> <div style="text-align: center;">□</div> <div>=</div> <div style="text-align: center;">30</div> </div> </div> </li> </ul> |  | ? | ? | ? | ? | + | ? | ? | ? | ? |
|                          | ?                                                                                                                                            | ?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |   |   |   |   |   |   |   |   |   |
| +                        | ?                                                                                                                                            | ?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |   |   |   |   |   |   |   |   |   |

|                          | National Curriculum Statement                                          | All students                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |  |      |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |                       |               |              |                       |                   |                   |                       |                   |
|--------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--|------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------|---------------|--------------|-----------------------|-------------------|-------------------|-----------------------|-------------------|
|                          |                                                                        | Fluency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Reasoning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Problem Solving |  |      |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |                       |               |              |                       |                   |                   |                       |                   |
| Addition and Subtraction | Estimate and use inverse operations to check answers to a calculation. | <ul style="list-style-type: none"> <li>Julie has 578 stamps, Heidi has 456 stamps. How many stamps do they have altogether?<br/>Show how you can check your answer using the inverse.</li> <li>Estimate the answers to these number sentences. Show your working.<br/><br/> <math>3,243 + 4,428</math><br/> <math>7,821 - 2,941</math> </li> <li>Check the answers to the following calculations using the inverse. Show all your working.<br/><br/> <math>762 + 345 = 1,107</math><br/> <math>2,456 - 734 = 1,822</math> </li> </ul> | <ul style="list-style-type: none"> <li><b>Always, sometimes, never.</b><br/><br/>The difference between two odd numbers is odd.</li> <li>Hazel fills in this bar model<br/><br/> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center; width: 100px;">2821</td> <td style="width: 50px;"></td> </tr> <tr> <td style="text-align: center;">2178</td> <td style="width: 50px;"></td> </tr> </table> <br/>                     She makes the following calculations from it.<br/><br/> <math>2,821 - 2,178 = 757</math><br/> <math>2,821 - 757 = 2,178</math><br/> <math>2,178 + 757 = 2,821</math><br/> <math>757 + 2,178 = 2,821</math><br/><br/>                     Is she correct?<br/>                     Explain why.                 </li> </ul> | 2821            |  | 2178 |  | <ul style="list-style-type: none"> <li>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?</li> <li>If Harry starts with the number 3, write out all the calculations he will do to get back to his original number.</li> <li>With a friend, discuss before working each out which will be greater or smaller than the other. Why do you think this? What key facts did you use?<br/><br/> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><math>3,567 - 567</math></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><math>3,677 - 344</math></td> </tr> <tr> <td style="text-align: center;"><math>4,738 + 36</math></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><math>4,738 + 18 + 18</math></td> </tr> <tr> <td style="text-align: center;"><math>2,139 - 85 + 27</math></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><math>2,151 - 86 + 30</math></td> </tr> </table> </li> </ul> | $3,567 - 567$ | <input type="radio"/> | $3,677 - 344$ | $4,738 + 36$ | <input type="radio"/> | $4,738 + 18 + 18$ | $2,139 - 85 + 27$ | <input type="radio"/> | $2,151 - 86 + 30$ |
| 2821                     |                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |  |      |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |                       |               |              |                       |                   |                   |                       |                   |
| 2178                     |                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |  |      |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |                       |               |              |                       |                   |                   |                       |                   |
| $3,567 - 567$            | <input type="radio"/>                                                  | $3,677 - 344$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |  |      |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |                       |               |              |                       |                   |                   |                       |                   |
| $4,738 + 36$             | <input type="radio"/>                                                  | $4,738 + 18 + 18$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |  |      |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |                       |               |              |                       |                   |                   |                       |                   |
| $2,139 - 85 + 27$        | <input type="radio"/>                                                  | $2,151 - 86 + 30$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |  |      |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |                       |               |              |                       |                   |                   |                       |                   |


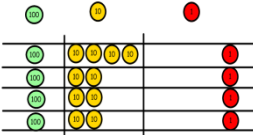

|                                 | National Curriculum Statement                                                                                       | All students                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           |                 |  |       |  |     |       |  |  |        |  |     |     |  |  |       |  |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                        |                        |                                 |                               |              |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------|--|-------|--|-----|-------|--|--|--------|--|-----|-----|--|--|-------|--|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------|---------------------------------|-------------------------------|--------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 |                                                                                                                     | Fluency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Reasoning | Problem Solving |  |       |  |     |       |  |  |        |  |     |     |  |  |       |  |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                        |                        |                                 |                               |              |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Addition and Subtraction        | Solve addition and subtraction two step problems in contexts, deciding which operations and methods to use and why. | <ul style="list-style-type: none"> <li>There are 2,452 people at a theme park. 538 are children, how many are adults?</li> </ul> <p>Sarah draws a diagram to help.<br/>Circle the correct diagram.</p> <table border="1" style="margin-bottom: 10px;"> <tr><td>Adults</td><td></td><td></td></tr> <tr><td>2,452</td><td></td><td>538</td></tr> </table> <table border="1" style="margin-bottom: 10px;"> <tr><td>2,452</td><td></td><td></td></tr> <tr><td>Adults</td><td></td><td>538</td></tr> </table> <table border="1"> <tr><td>538</td><td></td><td></td></tr> <tr><td>2,452</td><td></td><td>Adults</td></tr> </table> <p>Use the correct diagram to help you solve the problem.</p> <ul style="list-style-type: none"> <li>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.<br/>How many more stickers will she need?</li> </ul> | Adults    |                 |  | 2,452 |  | 538 | 2,452 |  |  | Adults |  | 538 | 538 |  |  | 2,452 |  | Adults | <ul style="list-style-type: none"> <li>Archie and Sophie are both working out the answer to the following question</li> </ul> $350 + 278 + 250$ <p>They have both used different strategies.</p> <table border="1" style="margin-bottom: 10px;"> <tr> <td style="padding: 5px;"><u>Archie's method</u></td> <td style="padding: 5px;"><u>Sophie's method</u></td> </tr> <tr> <td style="padding: 5px;">350+ 278= 628<br/>628 + 250= 878</td> <td style="padding: 5px;">350+250= 600<br/>600+ 278= 878</td> </tr> <tr> <td style="padding: 5px;">Answer = 878</td> <td style="padding: 5px;">Answer= 878</td> </tr> </table> <p>Which do you prefer?<br/>Explain why.<br/>Use the method you preferred to solve</p> $320+ 458 + 180$ | <u>Archie's method</u> | <u>Sophie's method</u> | 350+ 278= 628<br>628 + 250= 878 | 350+250= 600<br>600+ 278= 878 | Answer = 878 | Answer= 878 | <ul style="list-style-type: none"> <li>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?</li> <li>John is having a garden party. He will need to make 4,250 sandwiches in total. He makes 1,500 tuna, 750 cheese, 1,350 ham and 920 egg. He decides to make the rest cucumber. How many cucumber sandwiches will there be?</li> <li>These three chicks lay some eggs.</li> </ul> <div style="text-align: center;">  <p style="font-size: small; margin: 0;">Kelsey      Beth      Caroline</p> </div> <p>Beth lays twice as many as Kelsey.<br/>Caroline lays 4 more than Beth.<br/>They lay 44 eggs in total.<br/>How many eggs does Caroline lay?</p> |
| Adults                          |                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |                 |  |       |  |     |       |  |  |        |  |     |     |  |  |       |  |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                        |                        |                                 |                               |              |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 2,452                           |                                                                                                                     | 538                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           |                 |  |       |  |     |       |  |  |        |  |     |     |  |  |       |  |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                        |                        |                                 |                               |              |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 2,452                           |                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |                 |  |       |  |     |       |  |  |        |  |     |     |  |  |       |  |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                        |                        |                                 |                               |              |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Adults                          |                                                                                                                     | 538                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           |                 |  |       |  |     |       |  |  |        |  |     |     |  |  |       |  |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                        |                        |                                 |                               |              |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 538                             |                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |                 |  |       |  |     |       |  |  |        |  |     |     |  |  |       |  |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                        |                        |                                 |                               |              |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 2,452                           |                                                                                                                     | Adults                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |                 |  |       |  |     |       |  |  |        |  |     |     |  |  |       |  |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                        |                        |                                 |                               |              |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <u>Archie's method</u>          | <u>Sophie's method</u>                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |                 |  |       |  |     |       |  |  |        |  |     |     |  |  |       |  |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                        |                        |                                 |                               |              |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 350+ 278= 628<br>628 + 250= 878 | 350+250= 600<br>600+ 278= 878                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |                 |  |       |  |     |       |  |  |        |  |     |     |  |  |       |  |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                        |                        |                                 |                               |              |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Answer = 878                    | Answer= 878                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |                 |  |       |  |     |       |  |  |        |  |     |     |  |  |       |  |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                        |                        |                                 |                               |              |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |


|                             | National Curriculum Statement                                                            | All students                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |   |   |   |   |   |   |   |  |    |  |  |  |  |   |    |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
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|                             |                                                                                          | Fluency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Reasoning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Problem Solving                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |   |   |   |   |   |   |   |  |    |  |  |  |  |   |    |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
| Multiplication and Division | Recall multiplication and division facts of multiplication tables up to $12 \times 12$ . | <ul style="list-style-type: none"> <li>Find the answers:<br/> <math>4 \times 12 =</math>    <math>5 \times 9 =</math><br/> <math>7 \times 8 =</math>      <math>8 \times 11 =</math></li> <li>Fill in the gaps:<br/> <math>4 \times \underline{\quad} = 12</math>    <math>8 \times \underline{\quad} = 64</math><br/> <math>32 = 4 \times \underline{\quad}</math>    <math>6 = 24 \div \underline{\quad}</math></li> <li>Leila has 6 bags with 5 apples in each.<br/>How many apples does she have altogether?</li> <li>How many multiplication and division sentences can you write that have the number 72 in them?</li> </ul> | <ul style="list-style-type: none"> <li>Complete these calculations:<br/> <math>7 \times 8 =</math>      <math>7 \times 4 \times 2 =</math><br/> <math>5 \times 6 =</math>      <math>5 \times 3 \times 2 =</math><br/> <math>12 \times 4 =</math>    <math>12 \times 2 \times 2 =</math></li> <li>Which calculations have the same answer? Can you explain why?</li> <li>True or False<br/> <math>6 \times 8 = 6 \times 4 \times 2</math><br/> <math>6 \times 8 = 6 \times 4 + 4</math></li> <li>Explain your reasoning.</li> <li>Can you write the number 24 as a product of three numbers?</li> <li>Which pair of numbers could go in the boxes?<br/> <math>\square \times \square = 48</math></li> </ul> | <ul style="list-style-type: none"> <li>Find three possible values for <math>\bigcirc</math> and <math>\triangle</math>.<br/> <math>\bigcirc \times \triangle = 24</math></li> <li>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?</li> <li>Here is part of a multiplication square. Shade in any other squares that have the same answer as the shaded square.</li> </ul> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th><math>\times</math></th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> <th>8</th> <th>9</th> </tr> </thead> <tbody> <tr> <th>4</th> <td></td> <td>20</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <th>5</th> <td>20</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <th>6</th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <th>7</th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <th>8</th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <th>9</th> <td style="background-color: #cccccc;"></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> | $\times$ | 4 | 5 | 6 | 7 | 8 | 9 | 4 |  | 20 |  |  |  |  | 5 | 20 |  |  |  |  |  | 6 |  |  |  |  |  |  | 7 |  |  |  |  |  |  | 8 |  |  |  |  |  |  | 9 |  |  |  |  |  |  |
| $\times$                    | 4                                                                                        | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 8        | 9 |   |   |   |   |   |   |  |    |  |  |  |  |   |    |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
| 4                           |                                                                                          | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |   |   |   |   |   |   |   |  |    |  |  |  |  |   |    |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
| 5                           | 20                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |   |   |   |   |   |   |   |  |    |  |  |  |  |   |    |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
| 6                           |                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |   |   |   |   |   |   |   |  |    |  |  |  |  |   |    |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
| 7                           |                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |   |   |   |   |   |   |   |  |    |  |  |  |  |   |    |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
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|                             | National Curriculum Statement                                                                                                                                          | All students                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| Multiplication and Division | <p>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.</p> | <ul style="list-style-type: none"> <li>Fill in the missing numbers:               <math display="block">\square \times 1 = 13</math> <math display="block">12 \times 0 = \square</math> <math display="block">3 \times 2 \times \square = 18</math> </li> <li>Holly has 1 box of 12 eggs. How many eggs does she have?</li> <li>Sally has 0 boxes of 12 eggs. How many eggs does she have?</li> <li>Write these two questions as multiplication sentences.</li> <li>Five children share some cherries. Each child gets 6 cherries. There are 3 cherries left over. How many cherries were in the bag to begin with?</li> </ul> | <ul style="list-style-type: none"> <li>Always, sometimes, never</li> </ul> <p>An even number that is divisible by 3 is also divisible by 6.</p> <ul style="list-style-type: none"> <li>Harvey has written a number sentence.               <math display="block">13 \times 0 = 0</math> <p>He says</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; width: fit-content; margin: 10px auto;"> <p>I can change one number in my number sentence to make a brand new multiplication.</p> </div> <p>Is he correct?<br/>Which number should he change?<br/>Explain your reasoning.</p> </li> </ul> | <ul style="list-style-type: none"> <li>Write the number 30 as the product of 3 numbers. Can you do it in different ways?</li> <li>Try to reach the target number below by multiplying three of the numbers together. Cross out any numbers you don't use.               <p style="text-align: center;">Target number: 144</p> <div style="display: flex; justify-content: center; gap: 10px;"> <div style="border: 1px solid black; padding: 5px;">1</div> <div style="border: 1px solid black; padding: 5px;">5</div> <div style="border: 1px solid black; padding: 5px;">3</div> <div style="border: 1px solid black; padding: 5px;">0</div> <div style="border: 1px solid black; padding: 5px;">6</div> <div style="border: 1px solid black; padding: 5px;">8</div> </div> </li> <li>Use the numbers 1-8 to fill the circles.               <math display="block">\textcircled{?} \div \textcircled{?} = \textcircled{?}</math> <math display="block">\begin{array}{r} - \textcircled{?} \\ \hline \end{array} \quad \times \quad \begin{array}{r} \textcircled{?} \\ \hline \end{array}</math> <math display="block">\textcircled{?} + \textcircled{?} = \textcircled{?}</math> </li> </ul> |

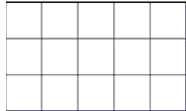
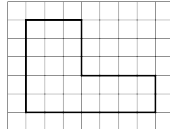
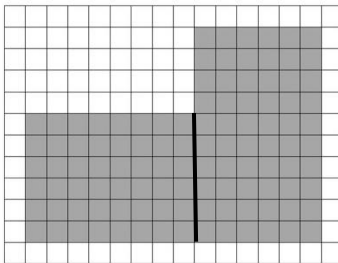
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| Multiplication and Division | Recognise and use factor pairs and commutatively in mental calculations. | <ul style="list-style-type: none"> <li>Use 16 cubes.<br/> <br/>                     How many different arrays can you make?<br/>                     Think about making towers of cubes that are equal in height.<br/>                     Can you write a multiplication sentence to describe the towers?<br/>                     The numbers in your multiplication sentences are the factors of 16!</li> <li><math>7 \times 5 = \square = 5 \times \square</math></li> <li>Find the missing numbers<br/> <math>12 \times 6 = 6 \times \underline{\quad}</math><br/> <math>2 \times 3 \times 5 = \underline{\quad} \times 5</math><br/> <math>2 \times 7 \times 5 = \underline{\quad} \times 5</math></li> <li><math>13 \times 12</math> can be solved by using factor pairs, eg <math>13 \times 3 \times 4</math> or <math>13 \times 2 \times 6</math>.<br/><br/>                     What factor pair could you use to solve <math>17 \times 8</math>?</li> </ul> | <ul style="list-style-type: none"> <li>Fill in the missing numbers<br/> <math>25 \times 3 = \square \times \square \times \square</math></li> <li>Use factor pairs to solve <math>15 \times 8</math>. Is there more than one way you can do it?</li> <li>Multiply a number by itself and then make one factor one more and the other one less.<br/>                     What do you notice?<br/>                     Does this always happen?<br/><br/>                     Eg <math>4 \times 4 = 16</math><br/> <math>6 \times 6 = 36</math><br/> <math>5 \times 3 = 15</math><br/> <math>7 \times 5 = 35</math></li> </ul> <p>Try out more examples to prove your thinking.</p> | <ul style="list-style-type: none"> <li>Place <math>&lt;</math>, <math>&gt;</math>, or <math>=</math> in these number sentences to make them correct:<br/> <math>50 \times 4 \square 4 \times 50</math><br/> <math>4 \times 50 \square 40 \times 5</math><br/> <math>200 \times 5 \square 3 \times 300</math></li> <li>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?<br/><br/> </li> </ul> |

## Multiplication and Division

| National Curriculum Statement                                                                        | All students                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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|                                                                                                      | Fluency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Reasoning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Problem Solving                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <p>Multiply two digit and three digit numbers by a one digit number using formal written layout.</p> | <ul style="list-style-type: none"> <li>Use counters to solve <math>126 \times 4</math><br/>Draw 4 rows and make 126 in each of them.</li> </ul>  <p>Add up the columns and exchange counters where needed to find the answer.</p>   | <ul style="list-style-type: none"> <li>Penny says a two digit number multiplied by a one digit number will always give a two digit answer.<br/>Is she correct?<br/>Justify your answer.</li> <li>Find the mistake that has been made in the calculation below.<br/>Explain and correct it.</li> </ul> $\begin{array}{r} 47 \\ \times 8 \\ \hline 3256 \end{array}$ <ul style="list-style-type: none"> <li>What digit goes in the missing box? Convince me.</li> </ul> $3 \square \times 4 = 140$ | <ul style="list-style-type: none"> <li>What could the numbers in the multiplication be?<br/>Every digit is different.</li> </ul> $\begin{array}{r} \square \square \square \\ \times \quad \square \\ \hline \square \square \square \square \end{array}$ <ul style="list-style-type: none"> <li>Miss Wood orders some new whiteboard pens for Year 3 and 4.<br/>There are 160 children in Year 3 and 4.<br/>If she orders 6 boxes of 27 pens, will she have enough?<br/>Show your calculation.</li> <li>In one month, Charlie read 814 pages in his books.<br/>His mum read 4 times as much as Charlie which was 184 pages more than Charlie's dad.<br/>How many pages did they read altogether?<br/>Use a bar model to help.</li> </ul> |

|                             | National Curriculum Statement                                                                                                                                                                                                               | All students                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| 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. | <ul style="list-style-type: none"> <li>Harry buys 6 chocolate bars, one chocolate bar costs 54p. How much does Harry spend?                             <ol style="list-style-type: none"> <li>Write a number sentence to represent the problem.</li> <li>Solve the problem.</li> </ol> </li> <li>Dan is using a number machine. Every number he puts in is multiplied by the same number. He puts 4 numbers in and the numbers that come out are 21, 49, 84 and 140. What could the machine be multiplying by?</li> <li>Laura is making a sequence using shapes. She uses 3 circles, 4 pentagons and 5 rectangles. If she uses the same pattern to make a longer sequence, how many pentagons will she use in a sequence with 72 shapes altogether?</li> </ul> | <ul style="list-style-type: none"> <li>Miss Smith estimates;                             <math display="block">399 \times 60 = 240,000</math>                             Is this a good estimate? Explain why.                         </li> <li>In a box there are red and yellow cubes. For every 5 red cubes there are 3 yellow cubes.                             <p>Hannah says;</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; width: fit-content; margin: 10px auto;"> <p>If I have more than 10 red cubes, I will definitely have more than 10 yellow cubes.</p> </div>                             Do you agree? Convince me.                         </li> </ul> | <ul style="list-style-type: none"> <li>An ice cream sundae is made from one scoop of ice cream, one topping and one sauce.                             <p>How many different ice cream sundaes can be created from 5 different flavours of ice cream, 3 different toppings and 4 different sauces?</p> </li> <li>Jenny needs to buy 20 cupcakes for a party. A shop has two offers on cupcakes.                             <div style="display: flex; justify-content: space-around; align-items: center; margin: 10px 0;"> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; text-align: center;">5 cupcakes<br/>for 40p</div> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; text-align: center;">4 cupcakes<br/>for 30p</div> </div>                             Which offer is better? How much money will Jenny spend altogether?                             <div style="text-align: center; margin-top: 10px;">  </div> </li> </ul> |



|             | National Curriculum Statement                                   | All students                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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|             |                                                                 | Fluency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Reasoning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Problem Solving                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Measurement | <p>Find the area of rectilinear shapes by counting squares.</p> | <ul style="list-style-type: none"> <li>Find the area of these shapes:                             <div style="display: flex; flex-direction: column; align-items: center; margin-top: 5px;">   </div> </li> <li>A rectangle measures 5 squares long by 3 squares wide. What is the area of the shape?</li> <li>Max is building a patio made of 24 square slabs. What could the patio look like? Design it on squared paper. Max is using 6 coloured square slabs in his design. None of them are touching each other. Where could they be in the designs you have made?</li> </ul> | <ul style="list-style-type: none"> <li>A shape has the area of <math>17\text{cm}^2</math>. Could the shape be a rectangle? Explain your answer.</li> <li>A rectangle measures 5 squares by 3 squares. Amy says;                             <div style="border: 1px solid black; border-radius: 15px; padding: 5px; width: fit-content; margin: 10px auto;">                                 The area must be 8 squares.                             </div>                             Do you agree? Explain your thinking.</li> <li>The area of any rectangle has an even number of squares. Do you agree? Prove it.</li> </ul> | <ul style="list-style-type: none"> <li>A fourteen sided shape has an area of eight squares. Draw the shape on squared paper.</li> <li>How many shapes can you draw that have an area of 8 square centimetres?</li> <li>Here is the floor plan of a lounge and a dining room. Each square represents <math>1\text{m}^2</math> <div style="text-align: center; margin: 10px 0;">  </div>                     Sam is a carpet fitter. He charges £3 per metre squared. How much will it cost to have the whole area of the lounge and dining room carpeted?                 </li> </ul> |