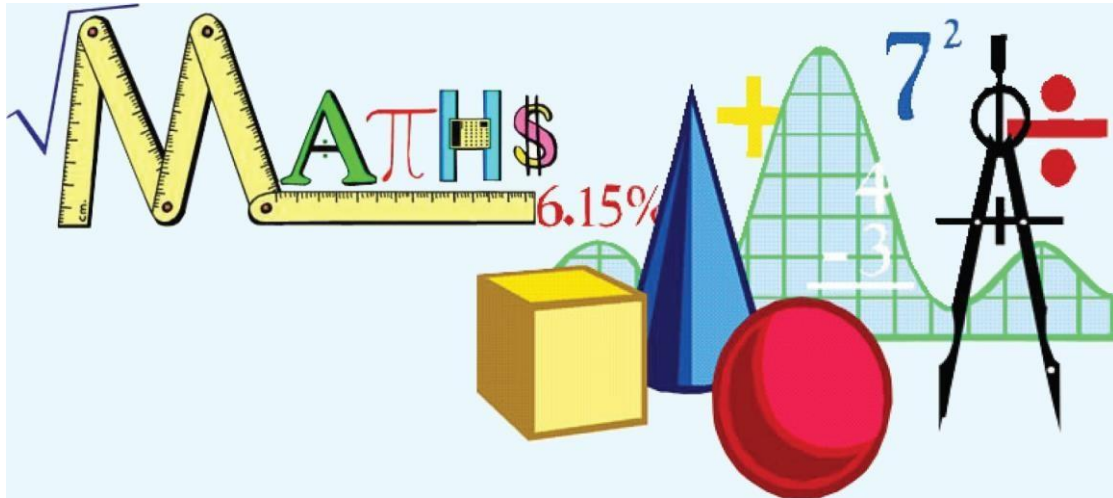




Key Stage 1 Mathematics Curriculum



Compiled by:
Mahbub Hossain
Cleveland Road Primary School

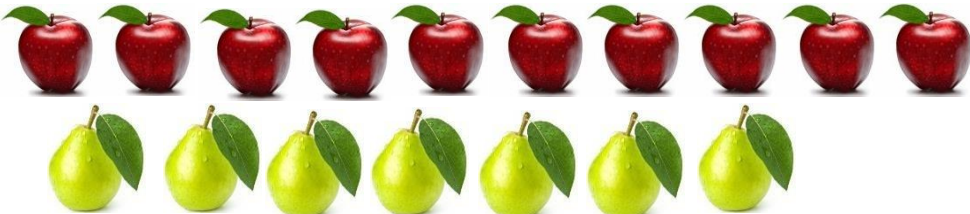
Change of mathematical terms and elimination of some topics	Replacement
Shape and Space	Replaced by Geometry: properties of shape and Geometry: position, direction and movement
Handling data	Replaced by statistics. No longer in year 1
Timetables	By the end of year 4, pupils should have memorised their multiplication tables up to 12
Written calculations	Introduce written calculation methods in year 2 and by end of year 6 pupils should be fluent in written methods for all four operations.

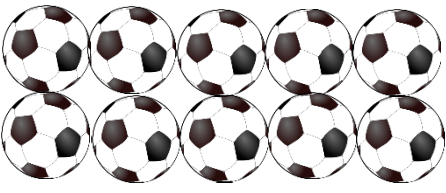
Mathematics in the new National Curriculum 2014

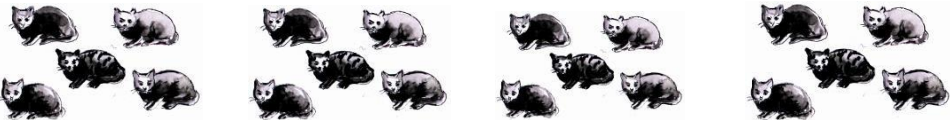
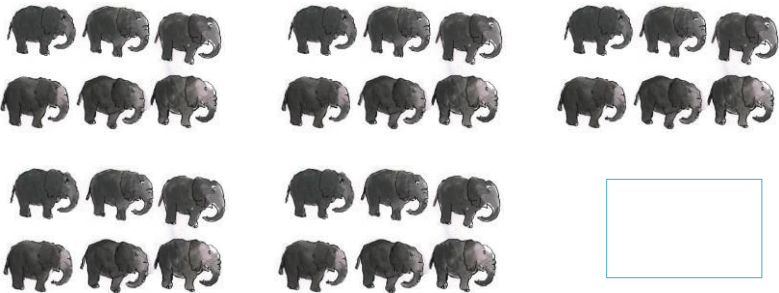
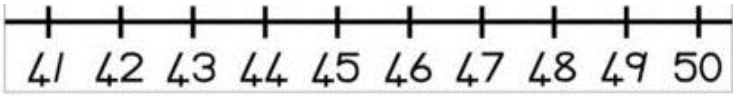
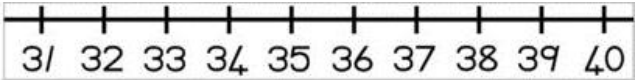
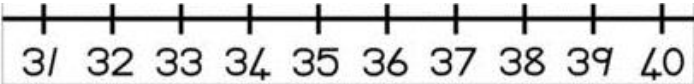
Year	Page Number
1	3
2	25

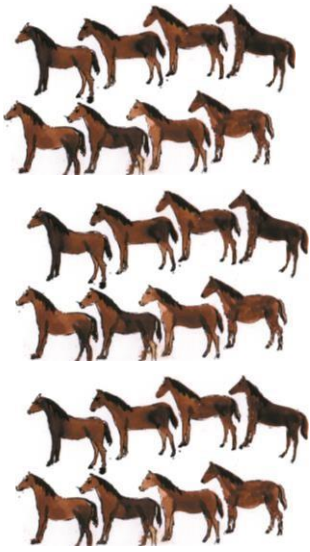
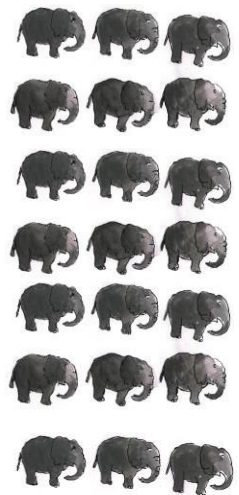
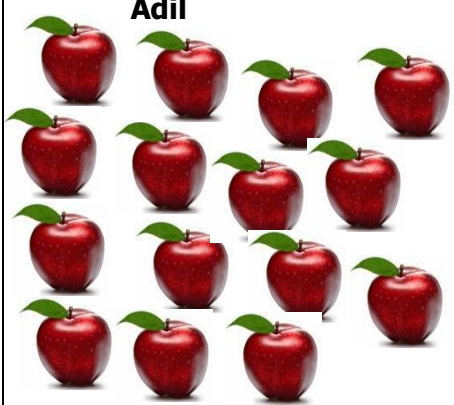
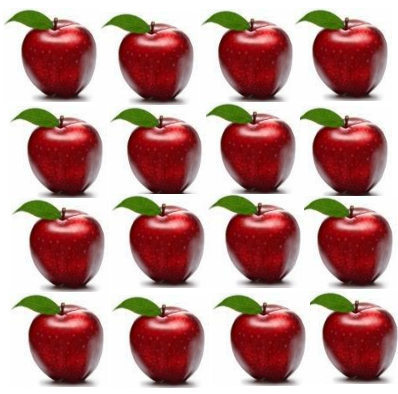
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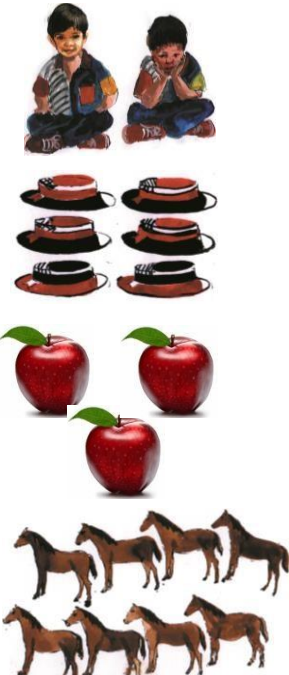
Cleveland Road Primary School

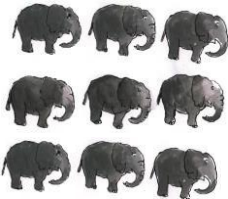
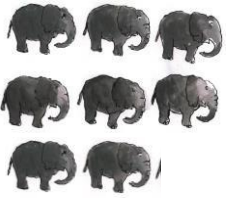
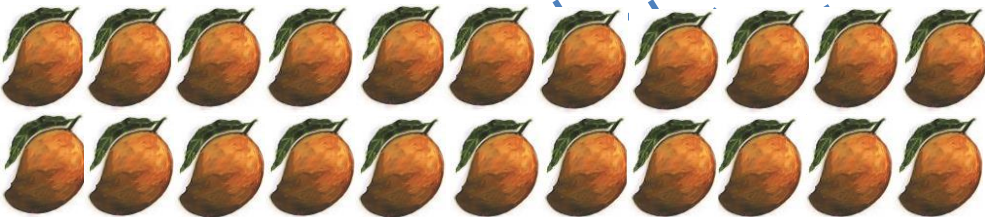
	Programme of Study	Examples
Y1	Number: Number and place value count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number	How many people are there?  How many tigers are there?  How many apples and pears are there altogether?  How many legs are there altogether?  Count up 3 from 27. Count down 1 from 19. Count up 8 from 31. Count down 7 from 50? Count forward from the given number : 6 50 Count on 5 from 9, what number did you land on? Count 7 from 65, what number did you land on? Write the missing number in these sequences. 17, 18, 19, , 21 22, 23, , 88, 90, , 94, , 98 Draw a ball 26 times.

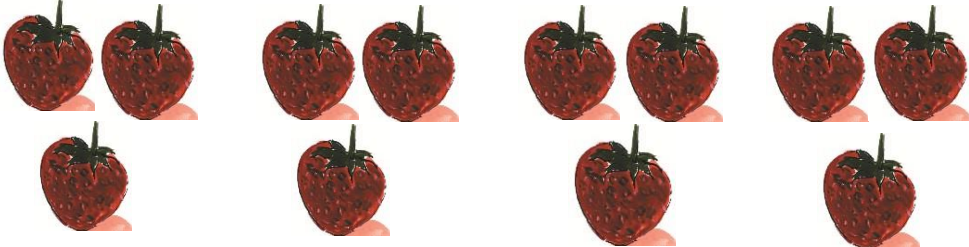
	Programme of Study	Examples
Y1	count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens	Write fifteen, twenty and eleven in figures? Write 75, 67 and 47 in words. Which pictures shows 5 bells?  A  B  C Count the balls.   Then complete the number sentence. ten + units = 14 Now complete this number sentence.   tens + units = 14 Write the number that is made up of : 5 units and 9 tens 7 tens and 7 units 3 tens and 0 unit

	Programme of Study	Examples
Y1	given a number, identify one more and one less	How many friends are there? Count by twos.  How many cats are there? Count by fives.  Count how many elephant are there?  What number is one more than the number above? Which number comes after 14  Which number comes after 47?  Which number comes before 38?  Which number comes between 34 and 36?  What is one more than 77 ? What is one less than 99 ?

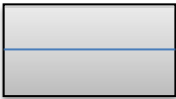
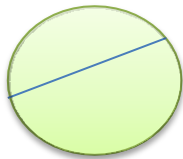
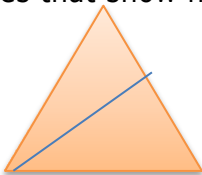
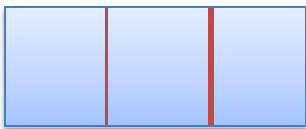
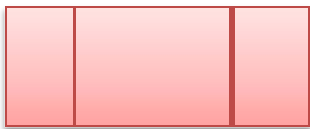
	Programme of Study	Examples
Y1	identify and represent numbers using objects and pictorial representations including the number line; use the language of: equal to, more than, less than (fewer), most, least	Which number is smaller ? 47 or 74 Which number is bigger ? 63 or 53 Which number is one more than 87 ? Which number is one less than 87 ? Which group is more?   Which number comes between 88 and 90? 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 Which number is missing? 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 Who has the most apples? Adil or Dave Adil  Dave  Which street has least houses?  Albert Street  Dudley Street

	Programme of Study	Examples
Y1	read and write numbers from 1 to 20 in numerals and words	Which picture shows equal to 27?  Read the door number. Which door says 13 ?  Write the nineteen and seven in figures? Write 17 and eight in words? Draw a line to match picture to the correct number.  3 apples 8 horses 2 boys 6 hats

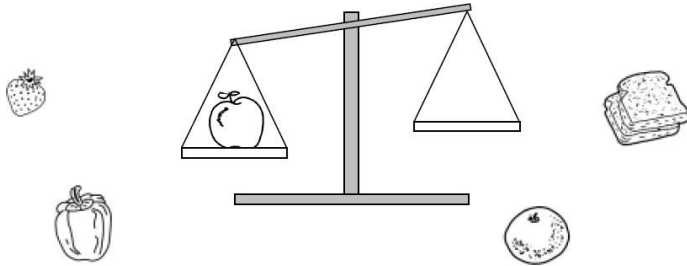
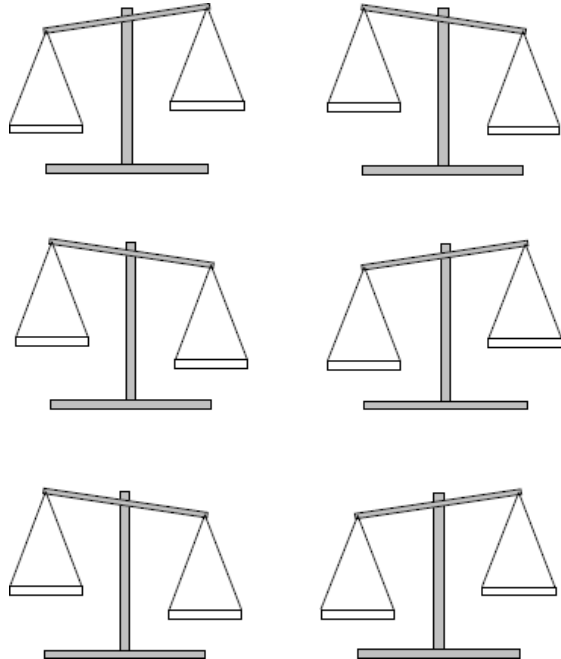
	Programme of Study	Examples
Y1	Number: Addition and Subtraction, read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs represent and use number bonds and related subtraction facts within 20	Which picture shows $7 + 5$?  A  B What is $9 + 8$?  +  = 17 Which picture shows $11 - 5 = 6$?  Addition and subtraction as related operations (addition is inverse of addition) $9 + 7 = 16,$ $12 + 8 = 20$ $16 - 7 = 9,$ $20 - 12 = 8$ $16 - 9 = 7$ $20 - 8 = 12$ Fill in the missing numbers: $6 + \square = 15$ $15 - \square = 9$ $15 - \square = 6$ $17 + \square = 20$ $\square + 5 = 12$ $11 + 8 = \square$ $13 + 7 = \square$ $20 - 13 = \square$ $20 - \square = 13$ Different ways of making 5, and 10: $0 + 5 = 5$ $1 + 4 = 5$ $2 + 3 = 5$ $3 + 2 = 5$ $4 + 1 = 5$ $5 + 0 = 5$ $0 + 10 = 10$ $1 + 9 = 10$ $2 + 8 = 10$ $3 + 7 = 10$ $4 + 6 = 10$ $5 + 5 = 10$ $6 + 4 = 10$ $7 + 3 = 10$ $8 + 2 = 10$ $9 + 1 = 10$ $10 + 0 = 10$

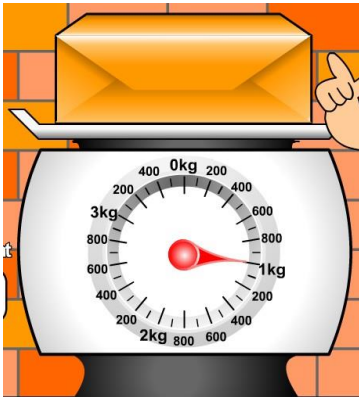
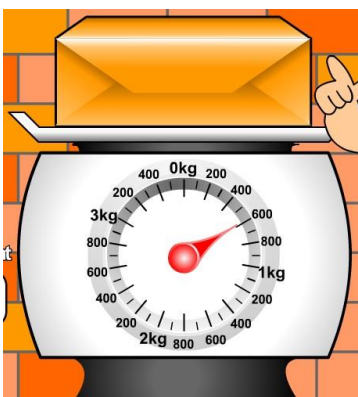
	Programme of Study	Examples
	Number: Multiplication and Division solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	There are 3 lots of 4 strawberries. How would you write as a multiplication number sentence?  $3 \times 4 = 12$ Write multiplication number sentences for the following: $3 \times 5 = 15$ $5 \times 5 = 25$ $4 \times 5 = 20$ $6 \times 3 = 18$ $2 \times 6 = 12$ $7 \times 2 = 14$ $2 \times 8 = 16$ $4 \times 4 = 16$ A flamingo has 2 legs. How many legs do 7 flamingos have?  Complete these multiplication sentences: $4 \times 6 =$  There are 4 cars. How many wheels are there?  Write the missing numbers: $0 \times 9 =$ $3 \times$ $= 15$ $\times 4 = 28$ $4 \times 8 =$

	Programme of Study	Examples
		From NRICH Yasmin and Zach have some bears to share. Which numbers of bears can they share equally so that there are none left over? What do you notice about the numbers they can share fairly?  Five children share 15 ice creams into equal parts. How many ice creams will each child have?  If there are 32 wheels, how many cars are there?  There are 88 chocolates. Each box holds 11, how many boxes are there? There are 30 shoes, how many children? There are 88 chocolates. Each box holds 11, how many boxes are there? There are 99 people. A bus can hold 10. How many buses are needed?  I have 23 sheep that I need to share between 4 people. How many will each person get? Any left over. 

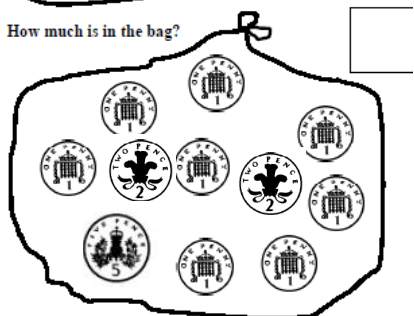
	Programme of Study	Examples																																																																																																				
	Number: Fractions recognise, find and name a half as one of two equal parts of an object, shape or quantity recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	Look at the picture and select all the pictures that show halves.  A  B  C Which pictures shows a quarter?  A  B Wh ch pictures shows a third?  A  B Here is a set of 12 balls. What is half of this set?  Shade one third of this shape?  Shade half of the 100 square. <table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td></tr><tr><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr><tr><td>31</td><td>32</td><td>33</td><td>34</td><td>35</td><td>36</td><td>37</td><td>38</td><td>39</td><td>40</td></tr><tr><td>41</td><td>42</td><td>43</td><td>44</td><td>45</td><td>46</td><td>47</td><td>48</td><td>49</td><td>50</td></tr><tr><td>51</td><td>52</td><td>53</td><td>54</td><td>55</td><td>56</td><td>57</td><td>58</td><td>59</td><td>60</td></tr><tr><td>61</td><td>62</td><td>63</td><td>64</td><td>65</td><td>66</td><td>67</td><td>68</td><td>69</td><td>70</td></tr><tr><td>71</td><td>72</td><td>73</td><td>74</td><td>75</td><td>76</td><td>77</td><td>78</td><td>79</td><td>80</td></tr><tr><td>81</td><td>82</td><td>83</td><td>84</td><td>85</td><td>86</td><td>87</td><td>88</td><td>89</td><td>90</td></tr><tr><td>91</td><td>92</td><td>93</td><td>94</td><td>95</td><td>96</td><td>97</td><td>98</td><td>99</td><td>100</td></tr></table>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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	Programme of Study	Examples
	Measurement compare, describe and solve practical problems for: lengths and heights (e.g. long/short, longer/shorter, tall/short, double/half) mass or weight (e.g. heavy/light, heavier than, lighter than) capacity/volume (full/empty, more than, less than, quarter) time (quicker, slower, earlier, later)	Working within a group of four, you could give each child a piece of plasticine and ask them to roll it to make the longest worm that they can in a minute. They then order their 'worms' from shortest to longest. The shortest worm could become a (non-standard) unit and children can estimate and measure how many worms long different things are. They could then measure the shortest to the nearest centimetre and use this to estimate the lengths of the others. Once they have estimated the 'worms' they measure them to see how close their estimates were.  Choose 6/8 children and ask them to stand in order shortest first.  Who is taller? Which pencil is longest? A  B  C  Who can run faster?  Who is heavier? 

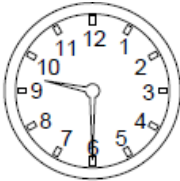
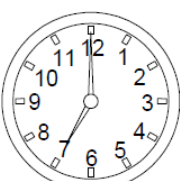
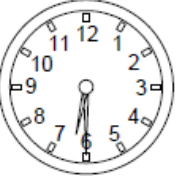
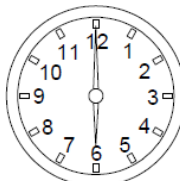
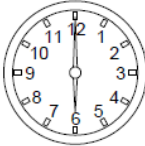
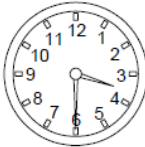
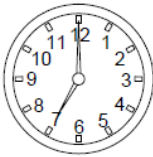
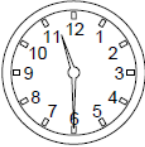
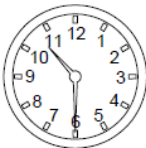
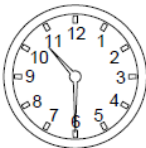
	Programme of Study	Examples
		Use an apple on one side of a balance. Now compare various other items to see if they are lighter or heavier. Record your results in the table below:  Things lighter than an apple Things about the same weight as an apple Things heavier than an apple Make your own drawings to put on the scales to show which is heavier or lighter. 

	Programme of Study	Examples
	measure and begin to record the following: - lengths and heights - mass/weight - capacity and volume - time (hours, minutes, seconds)	Give the children a selection of containers, measuring jugs for one or two litres and access to water. They could then find out each container's capacity to the nearest litre. Find and write down the mass of : A packet of 12 pencils  A box of cereal  Write the measurement shown on the scale?  Scale A  Scale B Make a list of three things that have a mass of : About 10 g about 500g about 1 kg Estimate the capacity of each of these containers in millilitres or litres.    

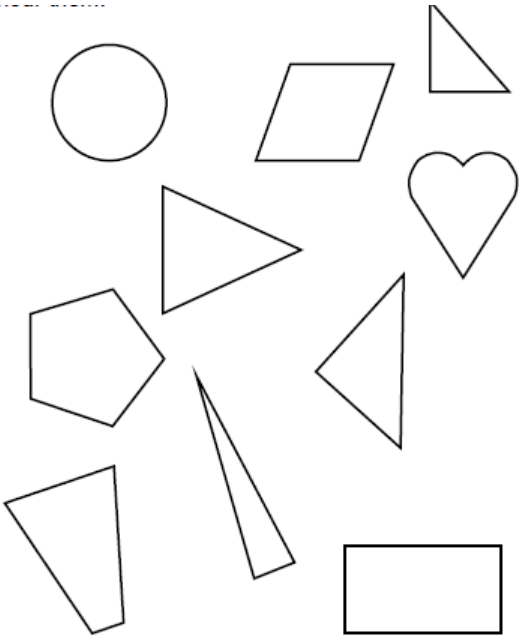
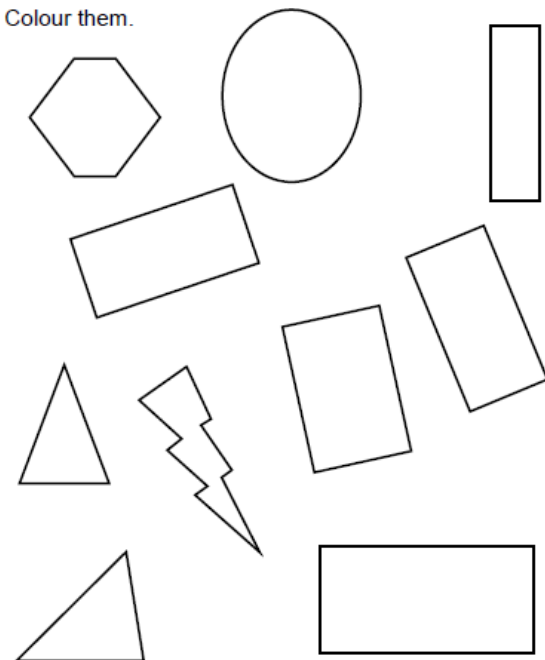
Programme of Study	Examples
	Colour the water in the glass which is nearly half full red.  Colour the tea in the fullest cup yellow. Colour the tea in the emptiest cup green. Colour the tea in the cup which is about half full red.  Make a list of three containers that hold: About 250 ml

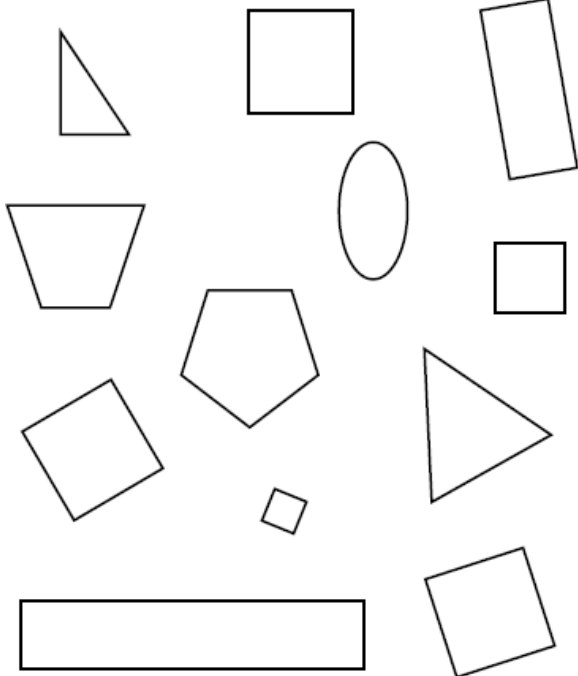
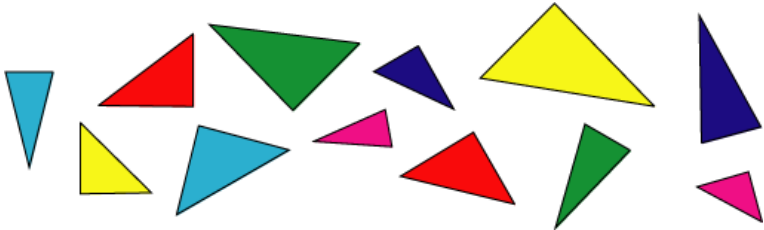
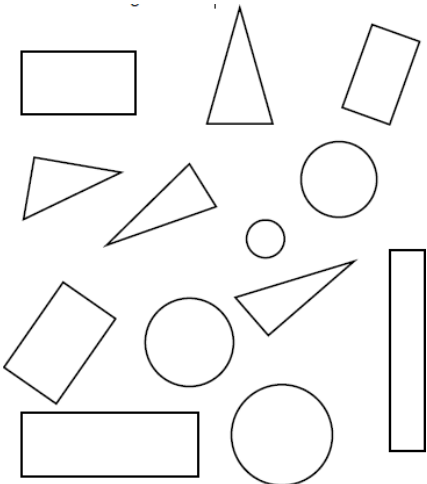
	Programme of Study	Examples
	recognise and know the value of different denominations of coins and notes	How much this coin worth? How much? 1.    p How much? 2.     p How much? 3.     p How much is in each bag?  How much is in the bag?  How much?   Give children a random number of up to 100 pennies. Ask them to count these into piles of 10 and when they have exchange each pile for a 10 pence coin. For any coins left over they exchange these for two pence and/or five pence coins. Additionally focus on exchanging pennies for two and five piece coins and also 10 pence coins for 20 pence, 50 pence and one pound coins.

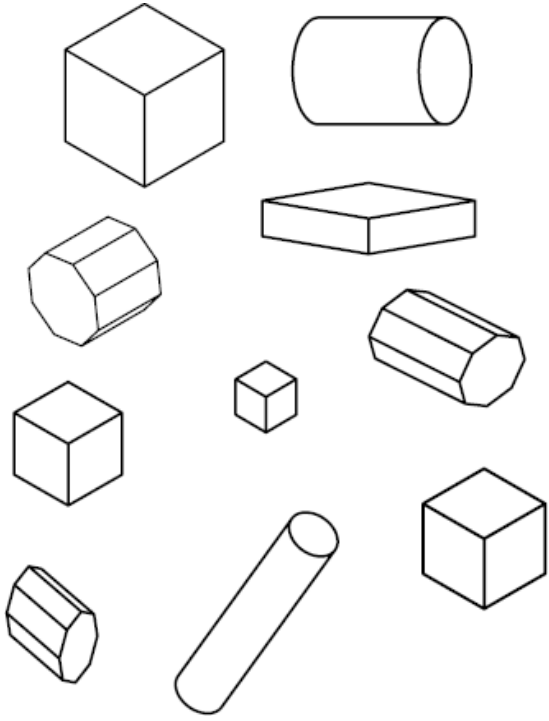
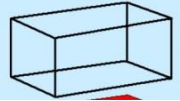
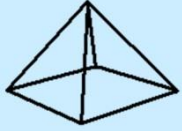
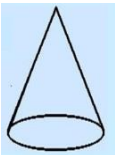
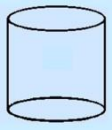
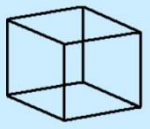
	Programme of Study	Examples
	recognise and use language relating to dates, including days of the week, weeks, months and years; sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]	Display a calendar and ask the children to write their name in that month in which their birthday occurs. 2015 2016  Again, ask questions from this, such as: Who has a birthday between June and September? Which month is two months after 'Julie's' birthday? Ask the children to draw a picture to show something that they do in the morning, then in the afternoon and evening. They cut these out and give them to a friend to put in the right order. Display a weekly time table of activities that the children do and ask questions from it, for example: 1. What do we do on Wednesday morning? 2. What day comes two days after Monday? 3. What day comes before Thursday 4. If today is Wednesday what day was yesterday? 5. What days of the week don't you go to school? 6. What day is it tomorrow? 7. Can you put the cards in order? Sunday Friday Saturday Tuesday Wednesday Thursday Monday

	Programme of Study	Examples																																																																																											
	tell the time to the hour and half past the hour and draw the hands on a clock face to show these times	August <table border="1"> <tr><td>Sun</td><td>Mon</td><td>Tue</td><td>Wed</td><td>Thu</td><td>Fri</td><td>Sat</td></tr> <tr><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> <tr><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td></tr> <tr><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td></tr> <tr><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td></tr> <tr><td>28</td><td>29</td><td>30</td><td>31</td><td></td><td></td><td></td></tr> </table> July <table border="1"> <tr><td>Sun</td><td>Mon</td><td>Tue</td><td>Wed</td><td>Thu</td><td>Fri</td><td>Sat</td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td></tr> <tr><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr> <tr><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr> <tr><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td></tr> <tr><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td></tr> <tr><td>30</td><td>31</td><td></td><td></td><td></td><td></td><td></td></tr> </table> How many Saturdays are there in August? On What day of the week does the month begin? What times do these clocks show?       Draw a line between the time and the correct clock face.  Half past five   Six o'clock Half past three Seven o'clock   Half past ten  Half past eleven 	Sun	Mon	Tue	Wed	Thu	Fri	Sat		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				Sun	Mon	Tue	Wed	Thu	Fri	Sat							1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31					
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	Programme of Study	Examples
		Draw the hands on a clock face to show these times: Half past one →  Three o'clock →  Half past seven →  Twelve o'clock →  Half past eight →  Half past nine →  Write down what the time will be in one hour's time.  1. In one hour it will be: _____  2. In one hour it will be: _____  3. In one hour it will be: _____  4. In one hour it will be: _____

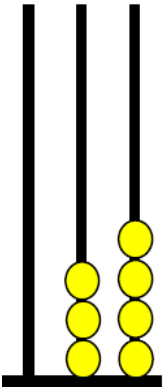
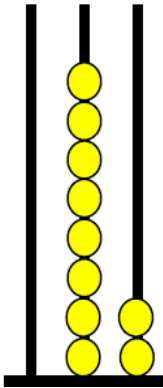
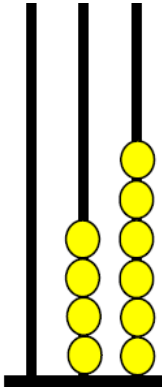
	Programme of Study	Examples
	Geometry: properties of shape recognise and name common 2-D shapes [for example, rectangles (including squares), circles and triangles]	Use elastic bands to create different shapes on your own hand or pegged boards and elastic bands. Move on to making large scale shapes with large elastic loops, on a large floor grid, standing at intersections. These shapes can then be rotated or copied by another group. Change the shape by adding another person – another side and another corner Which of these shapes are triangles? Colour them blue.  Which of these shapes are rectangles? Colour them red. Colour them. 

	Programme of Study	Examples
		Which of these shapes are squares? Colour them green. Colour them.  Matching triangles (NRICH) These triangles belong to three different families.  All the triangles in the same family are the same shape. But they may not be the same size or the same way up. Can you sort them out and explain how you did it? Colour the circles RED. Colour the rectangles GREEN. Colour the triangles BLUE 

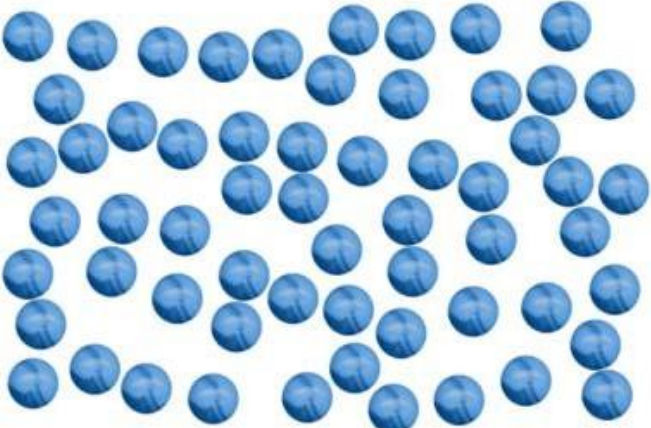
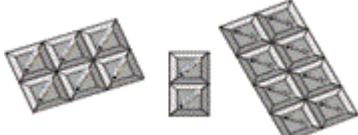
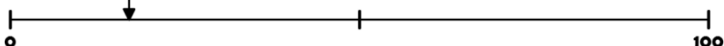
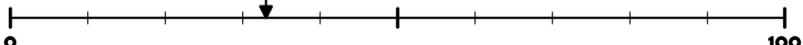
	Programme of Study	Examples
	recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres].	Which of these shapes are cubes? Colour them.  Snowball activity' – choose a 3-D shape, record something about it, then talk to a partner, find one thing that is different about your shapes? Now get into groups of 4 what is the same about your shapes? From Nrich Sort shapes into groups according to their properties such as: - Do they have corners/vertices? - Do they have a point? - Do they have just flat faces? - Do they have any square faces or rectangular faces? - Do they have triangular faces? - Do they have any round /circular faces? - Are their edges straight? - Do they have more than six flat faces? - Are they solid or hollow? Write the name of these figures:  _____  _____  _____  _____  _____  _____

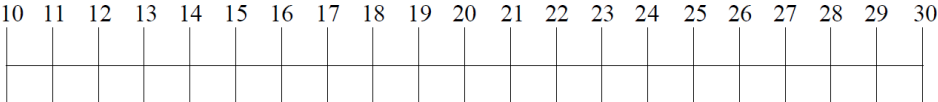
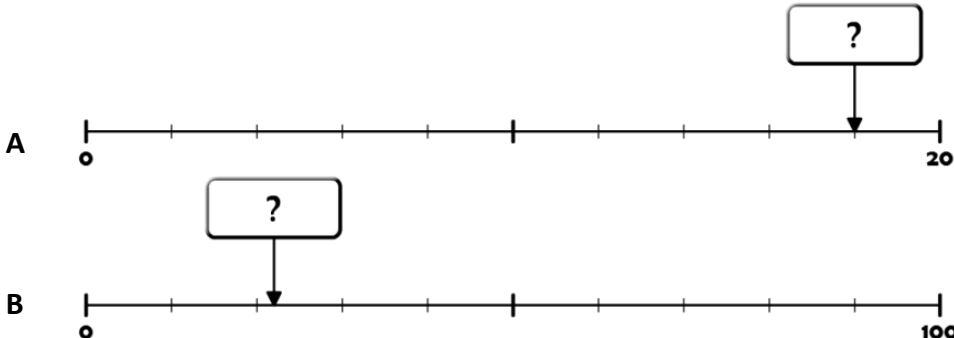
	Programme of Study	Examples
	Geometry – position, direction and movement describe position, direction and movement, including whole, half, quarter and three-quarter turns.	Which object is in the right? Which object is in the left? Which object is in the top? Which object is in the bottom? Which object is in the middle? Where is the trouser? Inside the cupboard Outside the cupboard What is below the eagle? What is above the chicken?

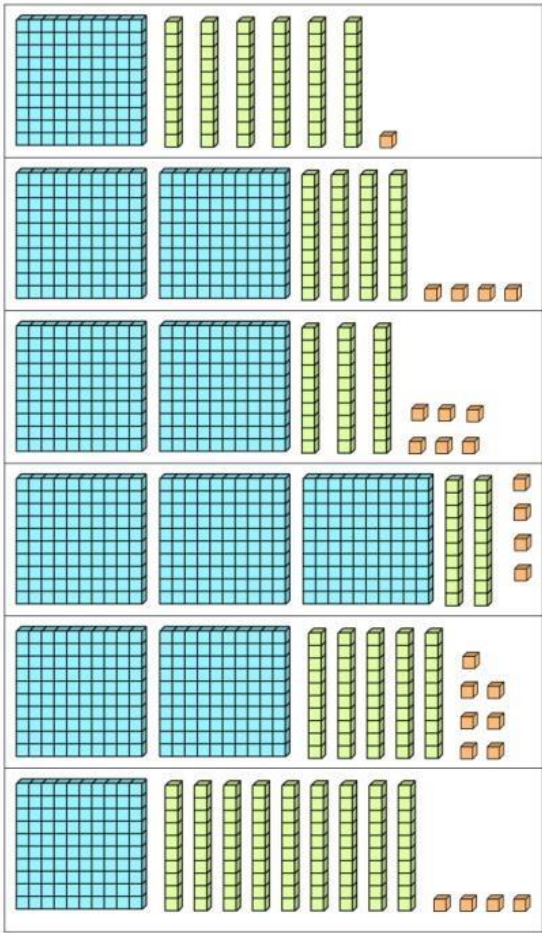
	Programme of Study	Examples
Y2	Number: Number and place value Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward	Write the missing numbers in each of these patterns count in steps of 2 ↓ 39 count in steps of 5 → 38 43 53 Count in steps of 3 → 41 47 63 93 How many chicks are there? Count by threes.                    

	Programme of Study	Examples
Y2	Recognise the place value of each digit in a two-digit number (tens, ones)	Write the missing numbers in these sequences: 25 30 40 50 75 67 69 75 13 23 43 73 45 48 57 Fill in the missing numbers: 93 83 63 23 71 69 65 63 Count back 6 from 47? Count back 7 from 59 ? Count back 9 from 87? Count down in tens from 87 to 37 ? Write the value of the digit underlined. <u>6</u> 8 <u>3</u> 2 8 <u>0</u> <u>1</u> 7 2 <u>0</u> 5 <u>4</u> 9 1 6 7 <u>1</u> <u>9</u> 4 1 Write down what the abacus shows on each of these:   

	Programme of Study	Examples
Y2		Count the dots. Then fill in the missing numbers: tens + units = Count how many tens and ones. Write the number. tens ones tens ones tens ones Look at these numbers: 37 12 45 60 72 27 Which of these numbers is the largest? Which of these numbers is between 10 and 20?

	Programme of Study	Examples
Y2	identify, represent and estimate numbers using different representations, including the number line	Count the tally marks. What number is shown?  Estimate, how many marbles are there?  Look at the squares of chocolate  There are 16 squares Tick(✓) the sum that matches the picture $5+2+9=16$ $5+6+5=16$ $6+6+4=16$ $6+2+8=16$ $8+3+5=16$ Estimate numbers on the number line. ?  ? 

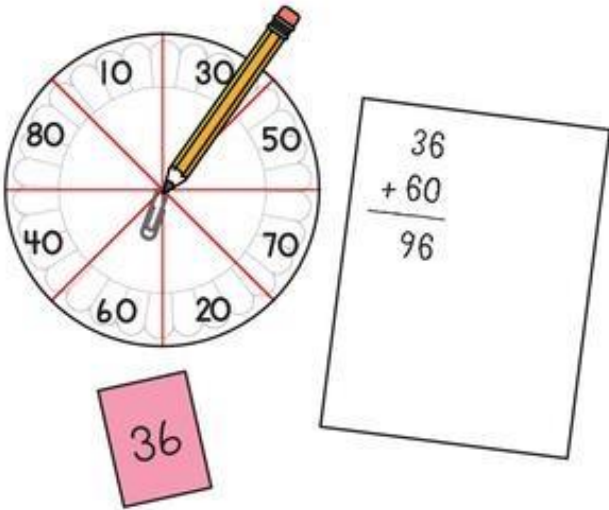
	Programme of Study	Examples
Y2	compare and order numbers from 0 up to 100; use <, > and = signs	Which is more: 23p or 35p Which is more: 31p or 26p Which is less: 64p or 28p Which is less : 61p or 29p  What number is half way between 15 and 25 ? What number is half way between 19 and 29 ? What number is half way between 21 and 27 ? What number is half way between 11 and 29 ? Here are three signs < > = Use these signs to make these correct 52 17 0.99 91 34 50 100 55 + 52 46 + 54 100 Which number line is pointing the bigger number?  Put these numbers in order from smallest to biggest. 12 56 17 77 71 53 55 70 37 61 0.50 0.15 0.75 0.7 0.8 0.18 0.25 0.35

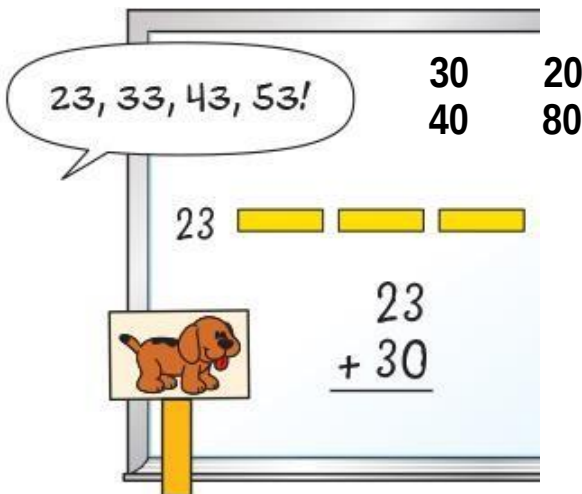
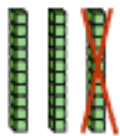
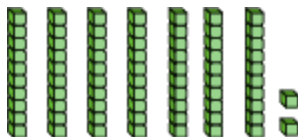
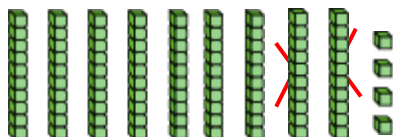
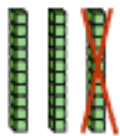
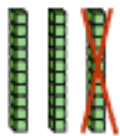
	Programme of Study	Examples
Y2		Harry had 6 bundles of 10 straws and 7 single straws. How many straws did he have altogether? Hamish had five 10p coins and 3 pennies. How much money did he have altogether? Sandy had 37 pennies. He wanted to change them into other coins. What are the fewest coins that he could use? Suzie made some cakes. She put them on plates in groups of 10. She had 8 full plates and 7 cakes left over. How many cakes did she have altogether? Match the following pictures to the correct number. The first one has been done for you.  217 236 161 194 178 324 244 257 Write down the value of the digits underlined in the numbers below. 14<u>3</u> 2<u>6</u>4 <u>3</u>77 50<u>3</u> <u>6</u>25 <u>7</u>25 8<u>1</u>4 5<u>4</u>7 88<u>1</u> <u>6</u>28 7<u>0</u>3 8<u>9</u>9

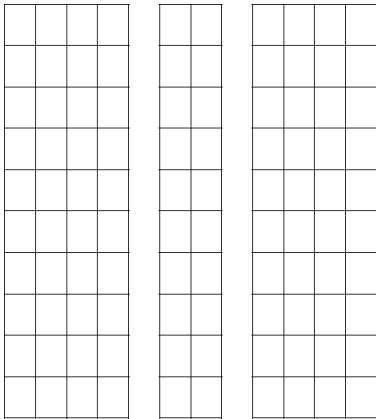
	Programme of Study	Examples
Y2	Number: Addition and Subtraction, Solve problems with addition and subtract Using concrete objects and pictorial representations, including those involving numbers, quantities and measures	1. 5 add 24. 2. Add 0 to 30 3. What is the sum of 20 and 17 ? 4. What is the total of 52 and 6 ? 5. How many are 39 and 10 altogether? 6. Which two numbers make 14? 7. Which three numbers make 14? 8. What is 7 more than 31 ? What is 19 plus 21 ? Find two different answers for these sums. Write the sum in the boxes. 1. $\square + \bigcirc = 12$ or $\square + \bigcirc = 12$ 2. $\square + \bigcirc = 16$ or $\square + \bigcirc = 16$ 3. $\square + \bigcirc = 20$ or $\square + \bigcirc = 20$ 4. $\square + \bigcirc = 17$ or $\square + \bigcirc = 17$ 5. $\square + \bigcirc = 30$ or $\square + \bigcirc = 30$ Which subtraction sentence does the picture show?  a) $7 - 5 = 2$ b) $8 - 6 = 2$ c) $8 - 5 = 3$ d) $8 - 3 = 5$ Which addition sentence does the picture show?  a) $8 + 9 = 17$ b) $7 + 5 = 12$ c) $7 + 8 = 15$ d) $7 + 9 = 16$

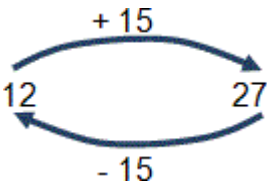
	Programme of Study	Examples																																				
Y2		Estimate the length of each item before you measure. <table border="1"> <thead> <tr> <th>Item</th><th>Estimate</th><th>Actual length</th></tr> </thead> <tbody> <tr> <td></td><td></td><td></td></tr> <tr> <td></td><td></td><td></td></tr> <tr> <td></td><td></td><td></td></tr> <tr> <td></td><td></td><td></td></tr> <tr> <td></td><td></td><td></td></tr> <tr> <td></td><td></td><td></td></tr> </tbody> </table> Expressing food quantities: Circle the correct answer. <table border="1"> <tbody> <tr> <td> 1. Could I have a _____ of chocolate? a. block b. bar c. slice  </td><td> 2. Could I have a _____ of tea? a. cup b. dish c. plate  </td><td> 3. Could I have a _____ of lemon? a. bunch b. slice c. scoop  </td></tr> <tr> <td> 4. Could I have a _____ of cake? a. jar b. dish c. piece  </td><td> 5. Could I have a _____ of bananas? a. head b. bunch c. package  </td><td> 6. Could I have a _____ of jam? a. jar b. carton c. bottle  </td></tr> <tr> <td> 7. Do we need a _____ of bread? a. loaf b. stick c. jar  </td><td> 8. Should I buy a _____ of flour? a. slice b. packet c. piece  </td><td> 9. Please get a _____ eggs. a. bunch b. slice c. dozen  </td></tr> <tr> <td> 10. I have just bought a _____ of milk. a. packet b. bottle c. carton  </td><td> 11. Don't forget to buy a _____ of onions. a. kilogram b. piece c. slice  </td><td> 12. Let's buy a _____ of potato chips. a. carton b. jar c. bag  </td></tr> <tr> <td> 13. May I have a _____ of water? a. kilogram b. glass c. jar  </td><td> 14. Could I have a _____ of oil? a. container b. jar c. bottle  </td><td> 15. I will add a _____ of salt to the soup. a. bag b. piece c. pinch  </td></tr> </tbody> </table>	Item	Estimate	Actual length																			1. Could I have a _____ of chocolate? a. block b. bar c. slice 	2. Could I have a _____ of tea? a. cup b. dish c. plate 	3. Could I have a _____ of lemon? a. bunch b. slice c. scoop 	4. Could I have a _____ of cake? a. jar b. dish c. piece 	5. Could I have a _____ of bananas? a. head b. bunch c. package 	6. Could I have a _____ of jam? a. jar b. carton c. bottle 	7. Do we need a _____ of bread? a. loaf b. stick c. jar 	8. Should I buy a _____ of flour? a. slice b. packet c. piece 	9. Please get a _____ eggs. a. bunch b. slice c. dozen 	10. I have just bought a _____ of milk. a. packet b. bottle c. carton 	11. Don't forget to buy a _____ of onions. a. kilogram b. piece c. slice 	12. Let's buy a _____ of potato chips. a. carton b. jar c. bag 	13. May I have a _____ of water? a. kilogram b. glass c. jar 	14. Could I have a _____ of oil? a. container b. jar c. bottle 	15. I will add a _____ of salt to the soup. a. bag b. piece c. pinch 
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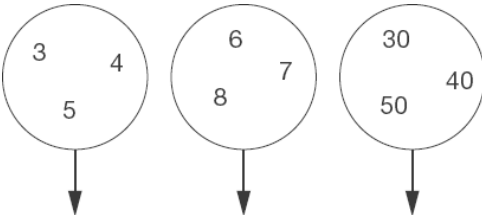
	Programme of Study	Examples														
Y2	recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	Add: $12 + \square = 20$ $\square + 12 = 20$ Look at this number sentence: $\square + \square = 20$. What could the two missing numbers be? What else? Can you tell me all the pairs of numbers that make 20? Use only these numbers. <table border="1"> <tr> <td>4</td> <td>8</td> <td>12</td> <td>16</td> <td>20</td> </tr> </table> Write numbers in the boxes to make these correct. Numbers can be used more than once. (a) $\square + \square = \square$ (b) $\square - \square = \square$ Write in the missing digits. <table border="1"> <tr> <td>3</td> <td>$\square$</td> <td>+</td> <td>$\square$</td> <td>5</td> <td>=</td> <td>1</td> <td>0</td> <td>0</td> </tr> </table>	4	8	12	16	20	3	$\square$	+	$\square$	5	=	1	0	0
	4	8	12	16	20											
	3	$\square$	+	$\square$	5	=	1	0	0							
			Add : $25 + 17 = \square$ $34 + \square = 100$ $\square + 71 = 94$ <table border="0"> <tr> <td>57</td> <td>39</td> </tr> <tr> <td>+ 9</td> <td>+ 46</td> </tr> <tr> <td> </td> <td> </td> </tr> </table> $12 + 9 + 28 = \square$ $24 + \square + 17 = 100$ $3 + 56 + \square = 99$	57	39	+ 9	+ 46									
	57	39														
+ 9	+ 46															
		subtract: $89 - \square = 7$ $\square - 15 = 74$ $62 - 47 = \square$ <table border="0"> <tr> <td>45</td> <td>92</td> </tr> <tr> <td>- 35</td> <td>- 17</td> </tr> <tr> <td> </td> <td> </td> </tr> </table> $92 - 17 - 10 = \square$ $\square - 23 - 27 = 50$	45	92	- 35	- 17										
45	92															
- 35	- 17															
		If you know this: $87 = 100 - 13$ What other facts do you know?														

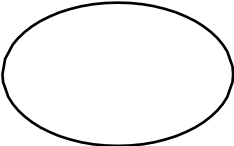
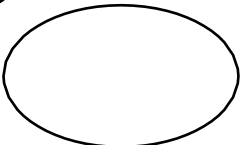
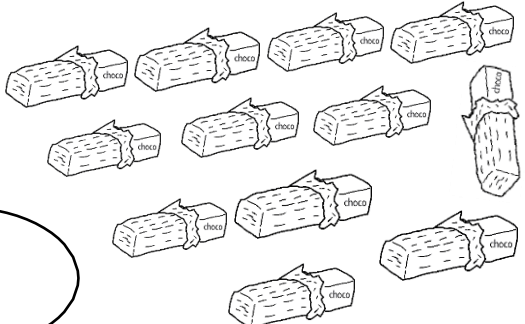
	Programme of Study	Examples
Y2	add and subtract numbers using concrete objects, pictorial representations, and mentally, including: - a two-digit number and ones - a two-digit number and tens - two two-digit numbers - adding three one-digit numbers	Give each child a 100 square. Ask them to put a finger on the number 3 and then give a series of instructions that involve the strategies above, for example: add 9 (add 10, subtract 1), add 13 (add 8 to get to 20 and then 5), take away 11 (subtract 10 and then another one). Activities similar to this, carried out regularly, will ensure that most children will remember and use them when appropriate. Children count back along a number line to find $64 - 25$ or count up from 67 to find the answer to $94 - 67$. They represent such calculations as number sentences. They calculate the value of an unknown in a number sentence such as $\square \div 2 = 6$ or $85 - \square = 29$. They recognise, for example, that to answer $85 - \square = 29$ they could use the related addition $29 + \square = 85$ Adding a two digit number to ones: $73 + 6 = \square$ $65 + 8 = \square$ $78 + 4 = \square$ $82 + 9 = \square$ $\begin{array}{r} 47 \\ + 6 \\ \hline \end{array}$ $\begin{array}{r} 72 \\ + 8 \\ \hline \end{array}$ $\begin{array}{r} 49 \\ + 7 \\ \hline \end{array}$ Subtracting: $76 - 8 = \square$ $39 - 8 = \square$ $78 - 8 = \square$ $93 - 6 = \square$ $\begin{array}{r} 83 \\ - 8 \\ \hline \end{array}$ $\begin{array}{r} 77 \\ - 6 \\ \hline \end{array}$ $\begin{array}{r} 81 \\ - 9 \\ \hline \end{array}$ Adding tens to two digit numbers:  $36 + 60 =$ $36 + 10 =$ $36 + 30 =$ $36 + 40 =$ $36 + 50 =$ $36 + 80 =$ $36 + 70 =$ Subtracting: $96 - 30 =$ $96 - 40 =$ $96 - 60 =$ $96 - 80 =$ $96 - 70 =$ $96 - 20 =$ $96 - 50 =$

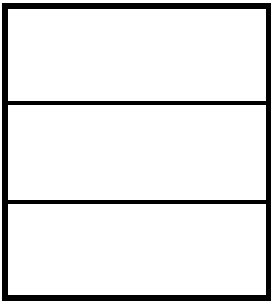
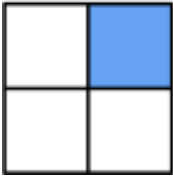
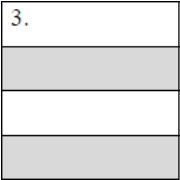
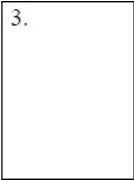
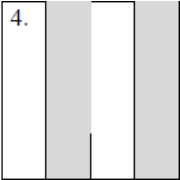
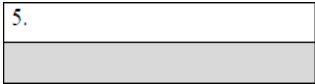
Programme of Study	Examples												
	Encourage children to use written methods as well.  <table border="1" data-bbox="537 884 804 1115"><thead><tr><th>Tens</th><th>Ones</th></tr></thead><tbody><tr><td></td><td></td></tr></tbody></table> $72 - 50 = 22$  <table border="1" data-bbox="518 1153 801 1384"><thead><tr><th>Tens</th><th>Ones</th></tr></thead><tbody><tr><td>3</td><td>7</td></tr><tr><td>1</td><td>2</td></tr><tr><td>2</td><td>5</td></tr></tbody></table> $94 - 20 = 74$  What number is 20 less than 79? What number is 20 more than 54? Addition: 17 + 20 + 43 = 50 + 23 + 9 = 34 + + 8 = 92 + 18 + = 80 9 + 65 + = 100 Subtraction: 100 - 34 - 16 = 90 - 9 - 17 = 100 - - 12 = 80 96 - 36 - 14 = - 34 - 56 = 10	Tens	Ones			Tens	Ones	3	7	1	2	2	5
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Tens	Ones												
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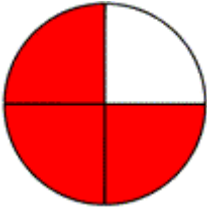
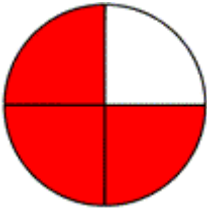
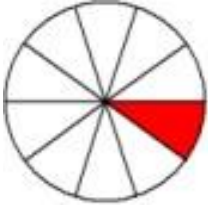
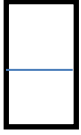
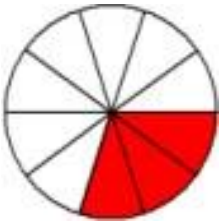
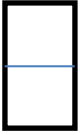
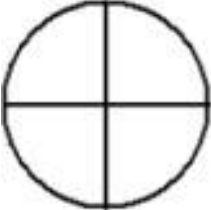
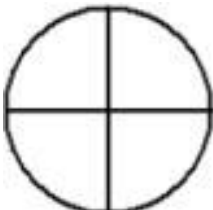
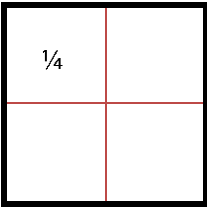
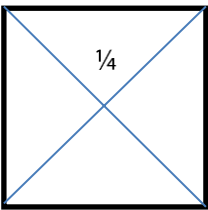
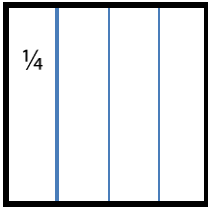
	Programme of Study	Examples
		4 ten rods + 2 ten rods + 4 ten rods  $\square + \square + \square = \square$ $40 + 20 + 40 = 100$ Take any three numbers. Add them up. What different totals can you make? 9 5 8 7 Add 14, 16 and 8. Add 11, 32 and 18. What is the sum of 4, 15 and 26 ? What is the sum of 28, 5 and 13 ? What is the total of 8, 18 and 28 ? What is the total of 6, 15 and 24 ? Altogether, how many are: 9, 19 and 29 ? Altogether, how many are: 7, 15 and 33 ? 12 plus 16 plus 28. 15 plus 39 plus 7. What is 80 take away 30 ? Take 60 from 90. Subtract 16 from 60. What is 14 less than 39? What is 40 less than 90 ? What number must I take from 20 to leave 6 ? What is the difference between 11 and 17 ? 14 taken from a number is 12. What is the number?

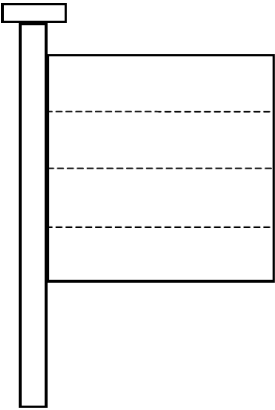
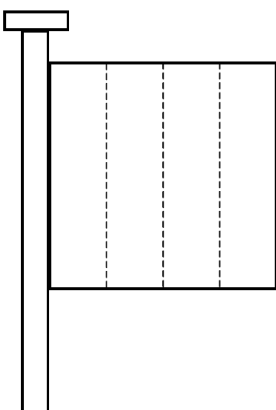
	Programme of Study	Examples
	Number: Multiplication and Division recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	Inversion loops are useful visual representations of inverse: Inversion loops  What fact is missing from this fact family? $21 + 9 = 30$ $30 - 9 = 21$ Can you make two addition numbers sentences and two subtraction number sentences from each of the following sets of numbers? 8 15 9 12 7 14 20 6 11 $15 + 9 = 24$ $9 + 15 = 24$ $24 - 15 = 9$ $24 - 9 = 15$ There are 4 groups of 5 footballs.  The multiplication number sentence will be : $4 \times 5 = 20$ Give the children a multiplication or division fact. Can they write a word problem to match it? Now swap calculations with a partner and talk about how you would solve the problem.

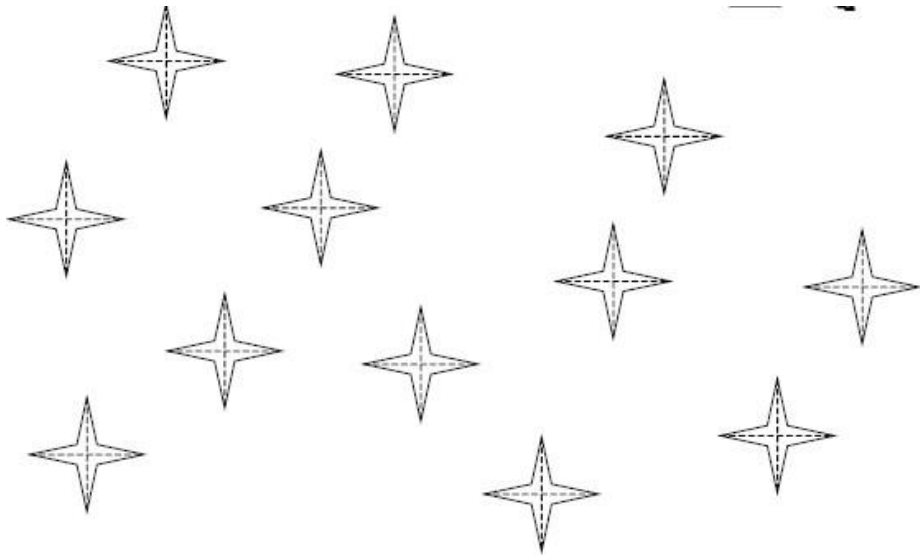
	Programme of Study	Examples
	calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication ($\times$), division ($\div$) and equals ($=$) signs	There are 3 groups of 7. How would you write this as a multiplication number sentence? Write the multiplication number sentence shown here:  $2 \times 5 = 10$, show me three more number facts using these numbers. Is 34 an odd number? How do you know? Using a metre stick with ten divisions use sticky notes to mark multiples of 2, 5 or 10. Practise counting on and back from different numbers. As the children become more fluent, remove more sticky notes and see how they can recall multiples starting at different points counting on and back. Find missing numbers or symbols in a calculation: $4 \times \square = 20$ $\square \div 10 = 3$ $\square \times = 60$ $10 \times 10 =$ $90 \div \square = 9$ $13 \times \square = 65$ $50 \div 5 = \square$ $30 \times \square = 90$ $80 \div \square = 16$ Anna has 3 boxes of cakes. Each box contains 5 cakes. How many cakes does she have altogether? Show how you worked this out. Write one number from each circle to make this calculation correct.  $\square \times \square - \square = 0$

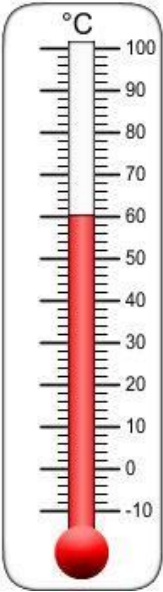
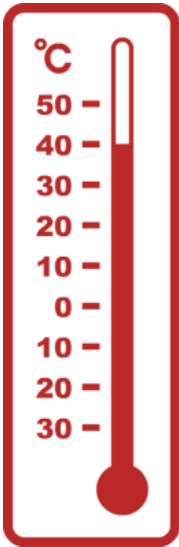
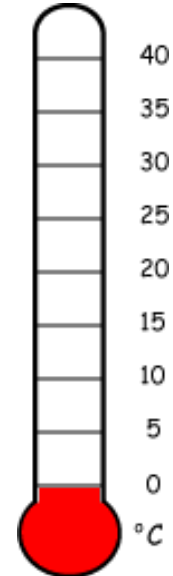
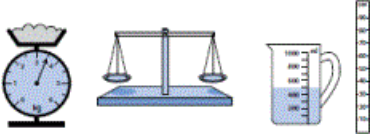
	Programme of Study	Examples
	show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot	Using digit cards and $\times$ and $\div$ and $=$ cards. Get the children to show how we can take one known fact and find others using those numbers. As the children move the digits around, they will demonstrate their understanding of using and applying their tables knowledge. What numbers can we move around in a division sentence? Can they spot the relationship between multiplication and division? Ensure they really understand the concept behind this activity, by encouraging them to show you with practical apparatus. Dan had £15. Karl had twice as much. How much did Karl have? Ali's pencil is 5 cm long. Leo's is twice as long. How long is Leo's? Ria bought 6 books costing £5 each. How much did she spend? Share these bars of chocolate between Ali and Gita. Ali  Gita   Multi, Subby and Divvy all like peaches. Share these peaches equally between them.  How many peaches do they each get? $4 \times 5 = 20$ $5 \times 4 = 20$ $10 \times 5 = 50$ $5 \times 10 = 50$ $5 \times 6 = 30$ $6 \times 5 = 30$ $7 \times 3 = 21$ $3 \times 7 = 21$ Write the missing fact: $9 \times 10 = 90$ $\times \square = \square$ $5 \times 7 = 35$ $\square \times \square = \square$

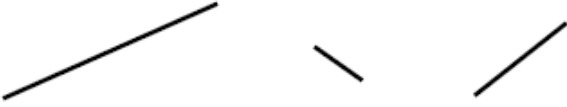
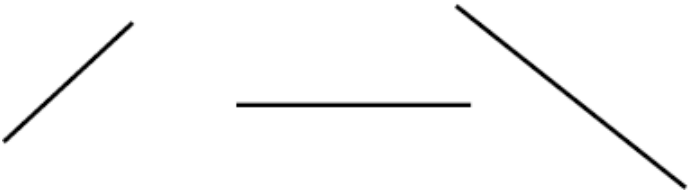
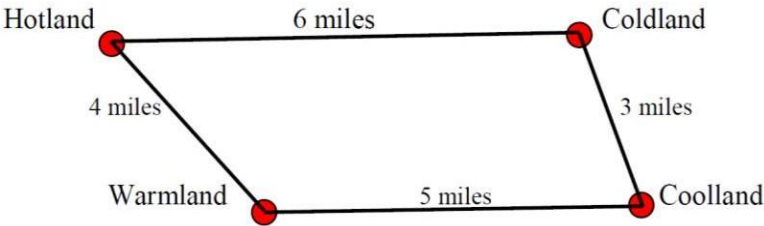
	Programme of Study	Examples
	Number: Fractions recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity	What fraction of this figure shows?  Which shape shows $\frac{1}{4}$?  A  B  C  D What fraction of each of these shapes is shaded? 3.  3.  4.  5.      Ask pupils to discuss whether they would like to share equally with a friend, half of a pouch of 10 50p coins or half of a pouch of 8 £1 coins. (The amounts and quantities can be changed according to fluency with calculations). Ask them to explain why.   Ask pupils to discuss whether they would prefer to eat half of the cupcake or half of the chocolate cake.

	Programme of Study	Examples
	write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of two quarters and one half.	Sita cuts a pizza into four equal slices. She eats one slice. What fraction of the pizza does she eat?   What fraction is shaded ?   What fraction is unshaded?   What fraction is shaded?   What fraction is unshaded?   Shade $\frac{1}{4}$ of this shape?  Shade $\frac{1}{3}$ of this shape?   $\frac{1}{4}$  $\frac{1}{4}$  $\frac{1}{4}$ $\frac{1}{4}$ = $\frac{1}{4}$ = $\frac{1}{4}$

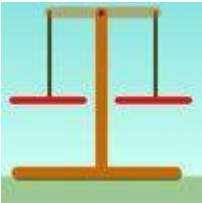
	Programme of Study	Examples
		Ask the children to colour two quarters of the first flag in red and the other half of the second flag in green. Can they recognise that $\frac{2}{4}$ is the equivalent of $\frac{1}{2}$?   Work out : $\frac{1}{4}$ of 28 $\frac{1}{2}$ of 40 $\frac{1}{5}$ of 25 $\frac{1}{3}$ of 30 $\frac{3}{4}$ of 20 Look at these fractions. Circle the two fractions that are equal. $\frac{1}{2}$ $\frac{1}{3}$ $\frac{2}{4}$ $\frac{3}{4}$ What is half of 12? Two quarters of 12? What is a third of 15?   What is two thirds of 9? What is three quarters of 24?   What is a Quarter of 8?

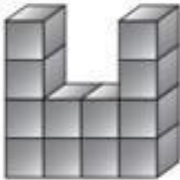
	Programme of Study	Examples																																																
		How many ways can you colour half of the star in, using one colour only?  How many stars did you colour? Have you coloured any the same way? How many stars are left uncoloured? Shade in half of shape A. <table><tr><td>A</td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table><table><tr><td>B</td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> Shade in five tenths of shape B What do you notice? Shade in half shape C <table><tr><td>C</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table><table><tr><td>D</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> Shade in $\frac{6}{12}$ of shape D What do you notice?	A												B												C												D											
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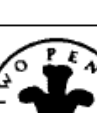
	Programme of Study	Examples
	Measurement choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels	What is the temperature?    Which is a better estimate for the length of a bed? A) 2 metres B) 2 centimetres Which is a better estimate for the length of a car? A) 200 metres B) 3 metres Write down two things which are less than one metre.  Suggest sensible units you might use to measure: the height of your table; how much water is in a cup; the weight of my reading book; how long it takes me to wash my hands. Choose a piece of equipment to help you measure: the weight of your shoe; how long the classroom is; how long this lesson lasts; how much water a cup holds. How long is this line? Now draw a line 2 cm longer than this one. How much water is in this measuring jug? Find an object in the classroom that you think is about 10 cm long. About how heavy do you think your pencil case is?

	Programme of Study	Examples
		What is the length of the longest line to the nearest whole centimetre?  cm  cm  cm  cm Draw 5 lines which are shorter than 1 cm. Draw 5 lines which are longer than 1 cm.  <pre> graph LR Hotland((Hotland)) --- 6 miles --- Coldland((Coldland)) Coldland --- 3 miles --- Coolland((Coolland)) Coolland --- 5 miles --- Warmland((Warmland)) Warmland --- 4 miles --- Hotland </pre> How far is it from Hotland to Coldland? How far is it from Warmland to Coldland, going through Hotland? How far is it from Hotland to Coolland, going through Warmland? How far is it from Coolland to Warmland?

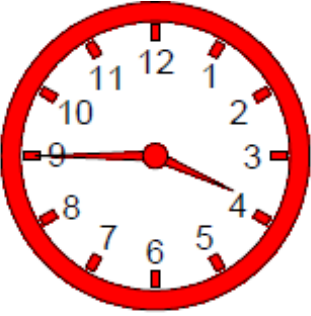
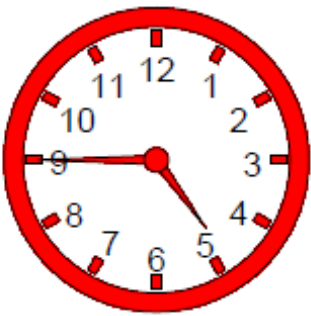
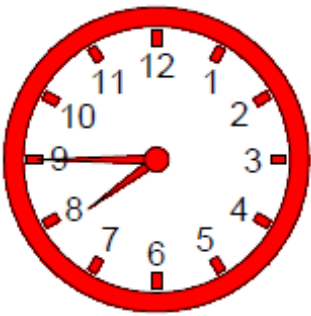
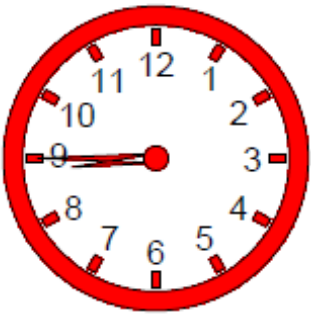
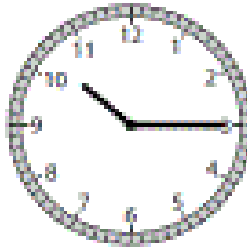
	Programme of Study	Examples
		My cat is 20 cm tall. My dog is 15 cm taller. How tall is my dog? I am 65 centimetres tall. What would Robin's height be if he was twice as tall? Cassie's pencil case is 45 cm long. Sue's pencil case 10 centimetres shorter. How long is Sue's pencil case? Jake's rabbit is 33 cm long. Tina's rabbit is 7 cm longer. How long is Tina's rabbit?  There are 5 kilograms of peaches in a box. How many kilograms of peaches are in 2 boxes?  A box of strawberries weighs 200 grams How much do two boxes weigh?  There are 10 apples in a 1 kg bag. How many apples in 6 bags?  A teapot holds 6 mugs of tea. How much would 5 teapots hold?  You have 10 litres of water. How many 2 litre jugs can you fill? 

	Programme of Study	Examples
	compare and order lengths, mass, volume/capacity and record the results using $>$, $<$ and $=$	Compare the mass of the animals. Write $>$ or $<$ or $=$ in each box to make the statement correct.    Cheetah 69 kg Lion 89 kg Tiger 89 kg Cheetah's mass Lion's mass Tiger's mass Lion's mass Megan and Jack are growing beans. Megan's plant is 25 cm tall. Jack's is 38 cm tall. Whose plant is the taller? By how much? Can you compare them using $>$ or $<$? Order, Order (NRICH) Have a look at the sets of four quantities below. Can you rank them in order from smallest to largest? To help you decide, you may need to find extra information or carry out some experiments. Can you convince us that your order is right? Time  Taken to travel to school For mustard and cress to grow from seeds Taken to eat a biscuit Between your 6th and 7th birthdays Distance  You could jump up in the air You can kick a football You can run in half a minute Length of a bug Mass  Of a blown-up balloon Of a bar of chocolate Of a loaf of bread Of your teacher

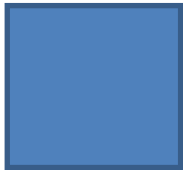
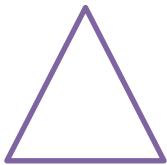
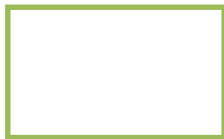
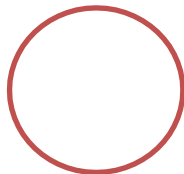
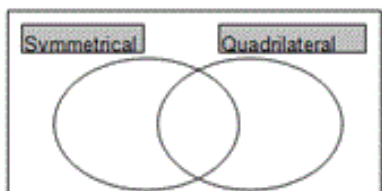
	Programme of Study	Examples
		In a board game, green spaces are 5 centimetres long. Red spaces are 2 centimetres shorter than green spaces. How many centimetres long are red spaces? Brenna's pine tree is 4 metres tall. Eddie's pine tree is 1 metre shorter than Brenna's. Ian's pine tree is 3 metres taller than Brenna's. Who has the tallest pine tree? Shontal's glass is 18 centimetres tall. Cindy's glass is 2 centimetres taller than Shontal's. Grayson's glass is 6 centimetres shorter than Shontal's. How many centimetres tall is Cindy's glass? Look at the jugs below. Write = or > or < to make the statement true:  e 500 mL  a 0.5 L  c 1800 mL  d 1.6 L Find the volume of these shapes by counting the cubes. Each cube is 1 cm³. The first one has been done for you.  Volume = 12 cm³  Volume = _____ cm³  Volume = _____ cm³

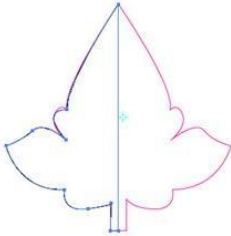
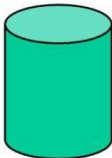
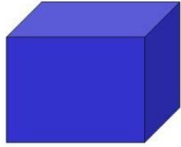
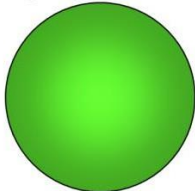
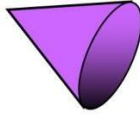
	Programme of Study	Examples
	recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value find different combinations of coins that equal the same amounts of money	How much? 1.       2.      3.      4.      5.      Holly has these coins. Harry has the same amount of money but has six coins. What are they? Is there only one possible answer?     How do you make 4 pounds and 71 pence using the fewest coins? I have got 3 of these coins. How much could I have?     

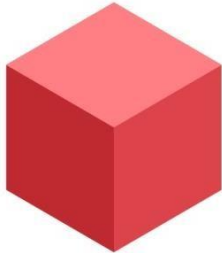
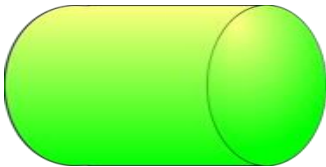
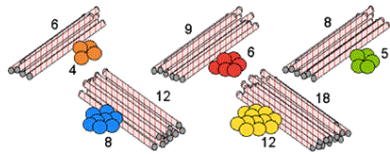
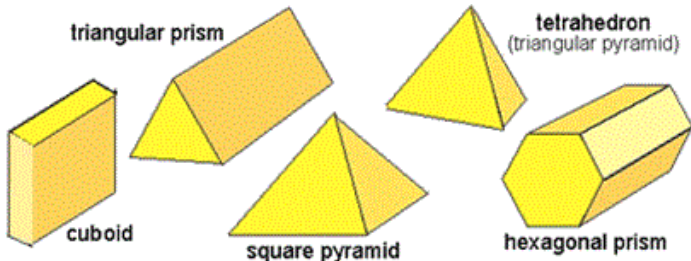
	Programme of Study	Examples
		Write these amounts as pound. 1.    2.    3.    4.   Write these amounts in pence: 1. £1.55 = p 2. £1.10 = p 3. £1.40 = p 4. £1.07 = p 5. £1.24 = p 6. £1.21 = p 7. £1.30 = p 8. £1.90 = p You have three 10p and three 5p coins in a purse. You use two of the coins to buy a lolly. What might the lolly cost? What if you used three coins? Ruth has two coins of the same value. How much might she have altogether? Jo has three 20p and two 15p stamps. What values can he make using one or more of the stamps?

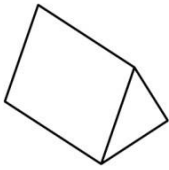
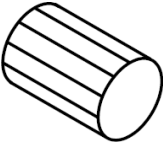
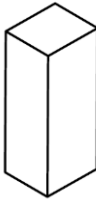
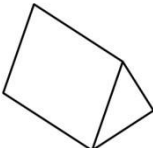
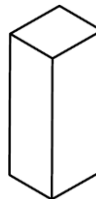
	Programme of Study	Examples
	compare and sequence intervals of time tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times know the number of minutes in an hour and the number of hours in a day	What time does each clock show?  1. _____  2. _____  3. _____  4. _____  5. _____  6. _____ What time does this clock show? Draw a clock showing the time five minutes later. 

	Programme of Study	Examples
		Show your school day on clock faces: when do you leave home, have breaks, go back home, etc.? Put children in charge of letting everyone know when it is 10 minutes before assembly/lunch/break. Check that children can tell you how many minutes are in an hour and how many hours in a day. Have a detailed timetable for children to refer to, with times displayed as analogue clock faces as well as written times. Match times to everyday events, e.g. match some pictures of daily events to some given clock faces showing their typical times. Compare times, e.g. sort some given times into a sequence from earliest to latest and draw hands onto corresponding clock faces. Give children problems involving the duration of time, e.g. School starts at 9 o'clock; show this time on your clock. Now show what time it would be if you were half an hour late. I went out for a walk at half past 3 and walked for quarter of an hour. Show me on these two clock faces what time I started and what time I would then have finished. Rohim had a birthday party. The party started at 4' O clock and finished it 3 hours later. What time was the party ended? John left his house at 4 o'clock. It took him $\frac{1}{4}$ of an hour to walk to the bus stop and he waited 10 minutes for a bus. The bus journey took him $\frac{1}{2}$ an hour. What time did he finish his journey?

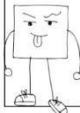
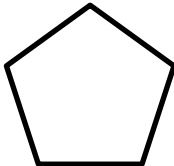
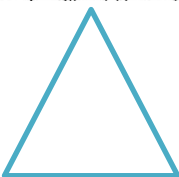
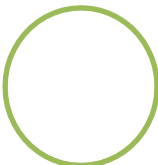
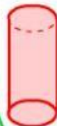
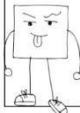
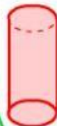
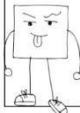
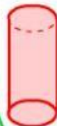
	Programme of Study	Examples
	Geometry: properties of shape identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line	What shape is this ?  What shape is this?  Which of these is a triangle ?  A  B  C Find shapes that have: a) Six sides. b) No corners. c) Four angles. d) Long sides and short sides. e) No straight sides. f) One curved edge. g) Five corners and five straight sides. h) Eight sides. i) Big angles. j) Sharp angles. Place the shapes below in the correct place in the Venn diagram.  Make one shape of your own to add to each section of the diagram.  Match the edges of one shape to the edges of another. Eg. Can you fit a square next to a hexagon so that the two sides match? Put several shapes on a tray. Remove one when the child's eyes are closed. The child then looks and tries to describe the features of the missing shape. Have a 'feely bag' in which you place two shapes. The child puts his/her hand inside and tries to identify the common features of the shapes. Eg. 'They both have three edges.'

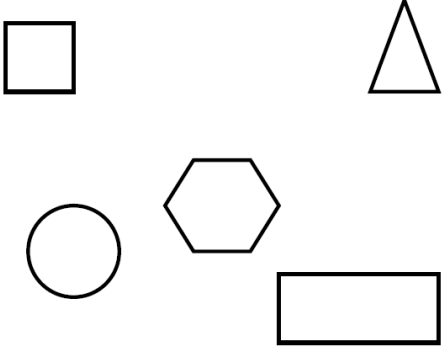
	Programme of Study	Examples	
	identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces	Does this shape have symmetry?  How many lines of symmetry does this shape have? Does this picture have symmetry? 	Does this shape have symmetry?  How many lines of symmetry does this shape have? This picture has a line of symmetry. 
		School Fair Necklaces (NRICH) Rob and Jennie were making necklaces to sell at the school fair. They decided to make them very mathematical. Each necklace was to have eight beads, four of one colour and four of another. And each had to be symmetrical, like this.  How many different necklaces could they make?      What shape am I? I have no flat faces. I have no straight edges. I have just one curved face.  I am a sphere.	

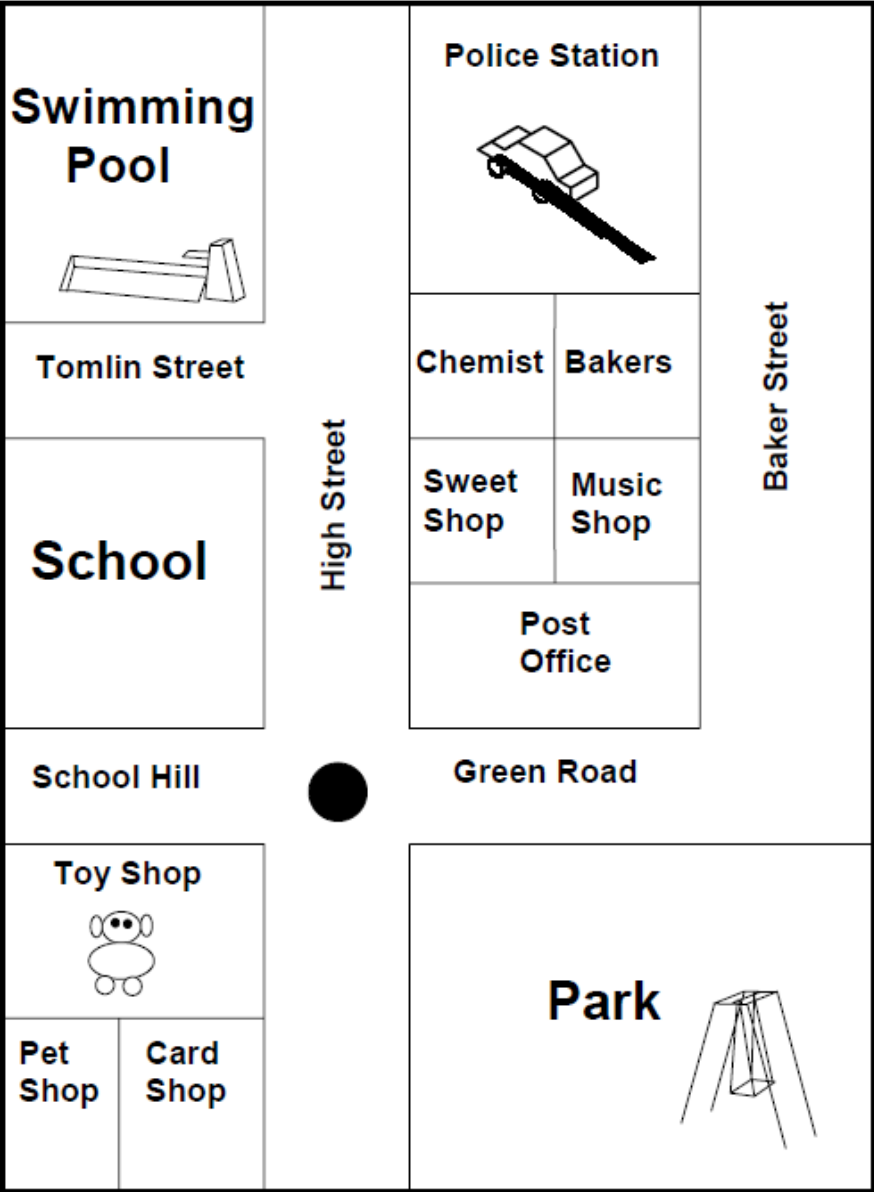
	Programme of Study	Examples
		I have one curved face. I have one flat face. My flat face is a circle. I have one pointy vertex.  I am a cone. I have 6 flat square faces I have 12 straight edges I have 8 vertices.  I am a cube. I have 6 flat faces, four of them are rectangles and two of them are squares I have 12 straight edges and 8 corners.  I am a cuboid. I have one curved face I have 2 flat circular faces.  I am a cylinder. Skeleton Shapes (NRICH) How many balls of modelling clay and how many straws does it take to make a cube? Here are some piles of modelling clay balls and straws:  Look at the shapes below and decide which piles are needed to make a skeleton of each shape. 

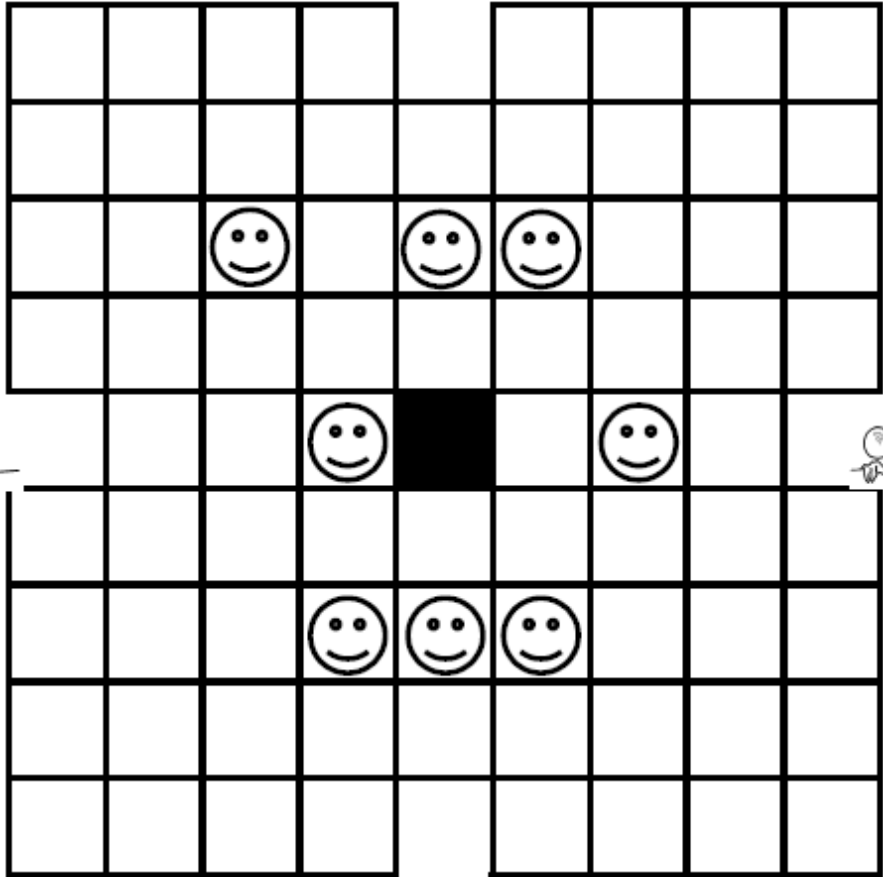
	Programme of Study	Examples
	identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]	Match the faces of one shape to the faces of another. Eg. Can you stand a square based pyramid on a cube so that the two square faces match? Put several shapes on a tray. Remove one when the child's eyes are closed. The child then looks and tries to describe the features of the missing shape. Have a 'feely bag' in which you place two shapes. The child puts his/her hand inside and tries to identify the common features of the shapes. Eg. 'They both have six faces.' Ask the children to bring in 2 each of any interestingly shaped boxes from home, ideally from the family shop. If necessary supplement these with your own examples: cylinder, pyramids, tetrahedral, cubes, cuboids, prisms.  Activity: The children should go round the edges of one of one of the boxes with a thick, preferably black, marker. Then they dismantle the box, cut out, and identify the shapes that have been marked out. Discard any flaps. The complete box in the pair, and the cut out shapes from the other are then put in a display to show the various flat surfaces used to make the solid shape.  What shape are these objects: - A CD ? - The side of a box ? - The bottom of a drinks can ? Which figure can you trace to make this shape?   A  B  C Which figure can you trace to make this shape?   A  B  C

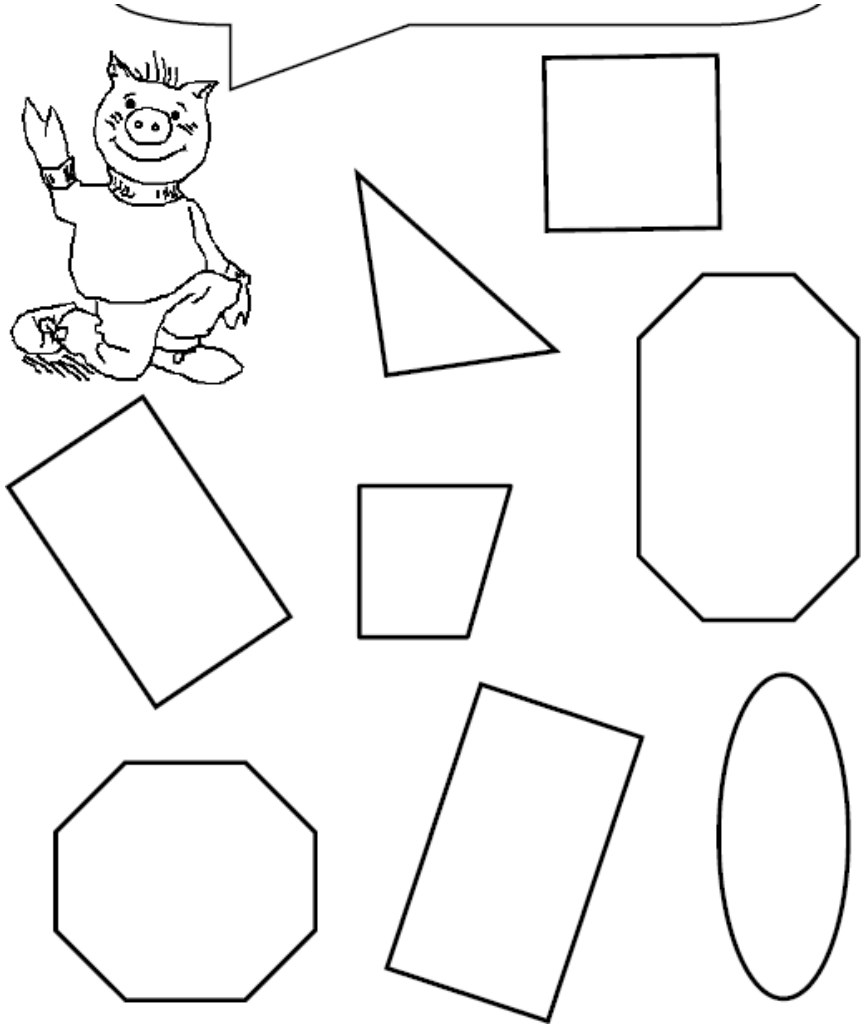
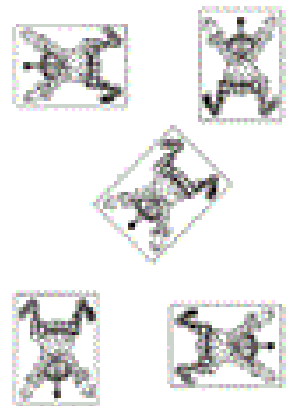
	Programme of Study	Examples															
	compare and sort common 2-D and 3-D shapes and everyday objects.	Shade in the 2D shapes yellow and the 3D shapes green.															
		Data Shapes (NRICH) <table><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table>															
	How many ways can you find to sort the cards? Can you see any cards that are the same as other cards? Watch me as I rotate (turn) this picture of a clown. (Rotate the clown smoothly and continuously through a full turn, keeping it facing the children a t all times.) Which item is shaped like a cylinder? A B C																

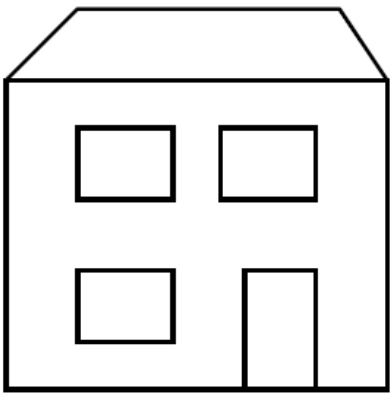
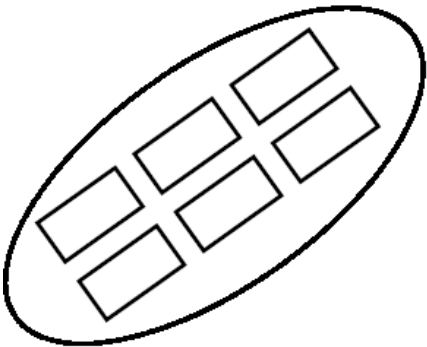
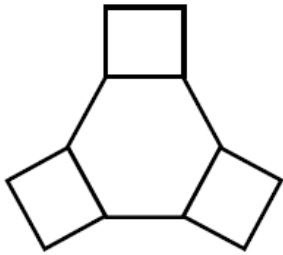
	Programme of Study	Examples										
		Sorting 2D shapes 2D shapes: sorting chart <table><tr><th>quadrilaterals four-sided shapes</th><th>other shapes</th></tr><tr><td></td><td></td></tr></table>  Sorting 3D shapes <table><tr><th>even flat faces</th><th>has curved surface</th></tr><tr><td></td><td></td></tr><tr><td colspan="2"></td></tr></table>	quadrilaterals four-sided shapes	other shapes			even flat faces	has curved surface	 	  		
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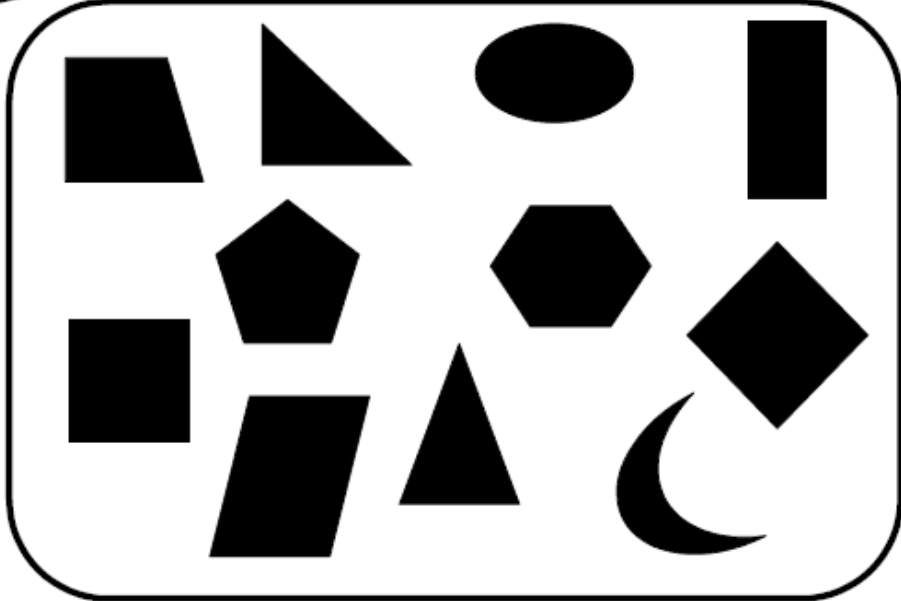
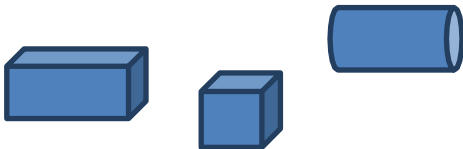
	Programme of Study	Examples
	Geometry – position, direction and movement Order and arrange combinations of mathematical objects in patterns use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).	Look at this pattern.  How would you show this pattern using letters? ABB ABC AB Look at this pattern.  How would you show this pattern using letters? ABB ABC AAB What comes next?   Point to shapes which are: - Lower than the square. - To the right of the hexagon. - Below the triangle. - Nearest to the circle. - Above the hexagon. - Nearer to the rectangle than the square. - Further from the circle than the hexagon. - Nearer to the circle than the rectangle.

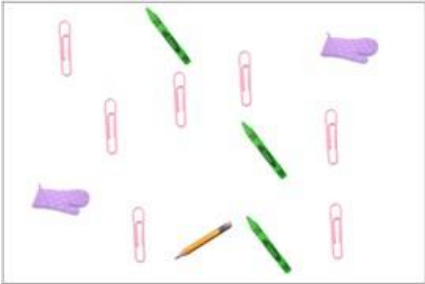
	Programme of Study	Examples
		Map of Mathstown  a) Which shops are next to the Music Shop? b) Which shops are in Baker Street? c) Which shops are next to the Card Shop? d) In which three roads is the Post Office? e) Which is furthest from the Post Office, the Bakers or the Swimming Pool? f) Which roads are next to the roundabout? g) If Janet goes from the Bakers to the Toy Shop, which way does she turn when she gets to Green Road? h) Which way do cars go around roundabouts - clockwise or anticlockwise (show this by moving around the roundabout on the map). i) Which things are in the corners of the map? k) What things are on the edge of the map, but not in a corner? l) Which roads join the High Street? m) Which is the furthest thing from the Swimming Pool? n) Describe the journey from the Swimming Pool to the park. o) Describe the journey from the School to the Bakers. Include 'left' and 'right'. p) Pretend to stand in the Sweet Shop facing the Chemist. Turn a half turn. What are you facing now? Turn a quarter turn clockwise. What are you facing now? q) Extend these activities to the child's real world, eg. going to the shops.

	Programme of Study	Examples
		Here is the board for a game.  Game 1. Start at the black square in the centre of the board. Move 1 U 3 R 1 D 2 R Which Maths Rat do you meet? Game 2. Start at the black square in the centre of the board. Move 1 U 2 L 2 D 5 R 4 U 3 L 2 U Which Maths Rat do you meet?

	Programme of Study	Examples
		Here are some more shapes. Cut them out and put them into groups. One group has shapes with right angles. One group has shapes with no right angles.  Which of the pictures shows what the clown will look like if I rotate (turn) my picture a half turn? Tick the picture (Do not rotate your picture this time) 

	Programme of Study	Examples																											
		How many right angles can you see in these shapes?  _____  _____  _____ <table border="1" data-bbox="534 1301 1485 1995"> <thead> <tr> <th>Start facing this way.</th><th>Turn this angle.</th><th>Which way are you facing?</th></tr> </thead> <tbody> <tr> <td>East</td><td>Clockwise one right angle.</td><td>South</td></tr> <tr> <td>West</td><td>Anti-clockwise one right angle.</td><td></td></tr> <tr> <td>North</td><td>Clockwise one right angle.</td><td></td></tr> <tr> <td>South</td><td>Half turn</td><td></td></tr> <tr> <td>East</td><td>Anti-clockwise one right angle.</td><td></td></tr> <tr> <td>North</td><td>Half turn</td><td></td></tr> <tr> <td>West</td><td>Clockwise one right angle.</td><td></td></tr> <tr> <td>South</td><td>Anti-clockwise one right angle.</td><td></td></tr> </tbody> </table>	Start facing this way.	Turn this angle.	Which way are you facing?	East	Clockwise one right angle.	South	West	Anti-clockwise one right angle.		North	Clockwise one right angle.		South	Half turn		East	Anti-clockwise one right angle.		North	Half turn		West	Clockwise one right angle.		South	Anti-clockwise one right angle.	
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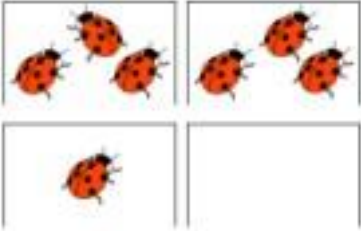
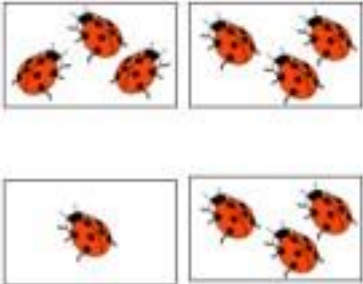
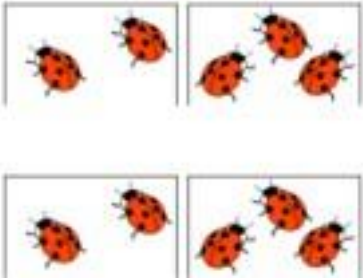
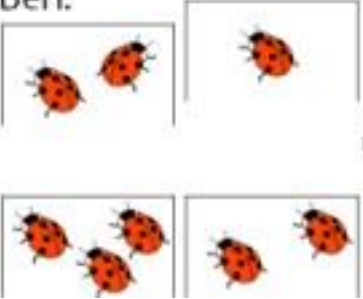
	Programme of Study	Examples						
		Here are some shapes. Some have no right angles. Some have right angles and other angles. Some have only right angles. Can you draw the shapes in the table in the correct place?  <table border="1" data-bbox="533 1052 1468 1545"> <thead> <tr> <th data-bbox="533 1052 847 1117">All right angles</th><th data-bbox="847 1052 1150 1117">Some right angles</th><th data-bbox="1150 1052 1468 1117">No right angles</th></tr> </thead> <tbody> <tr> <td data-bbox="533 1117 847 1545"></td><td data-bbox="847 1117 1150 1545">  </td><td data-bbox="1150 1117 1468 1545"></td></tr> </tbody> </table> Pick up and look at these 3-D shapes.  Do they all have straight edges and flat faces? What is the same and what is different about these shapes?	All right angles	Some right angles	No right angles			
All right angles	Some right angles	No right angles						
								

Programme of Study	Examples																																																																																
Statistics Interpret and constructs simple pictograms, tally charts, block diagrams and simple tables	Katie found the following items in a kitchen drawer:  She wanted to know how many of each item there were, so she made a picture graph of the items she found. Which is her graph? A <table border="1"><tr><td>pencils</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>paper clips</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>oven mitts</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>green crayons</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> B <table border="1"><tr><td>pencils</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>paper clips</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>oven mitts</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>green crayons</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> Omar saw the following balls at the sporting goods store:  A <table border="1"><tr><td>Balls</td><td></td><td></td><td></td></tr><tr><td>How many?</td><td>4</td><td>7</td><td>9</td></tr></table> He decided to count how many of each ball there were, so he made a table of the balls. Which is his table? A or B B <table border="1"><tr><td>Balls</td><td></td><td></td><td></td></tr><tr><td>How many?</td><td>7</td><td>4</td><td>9</td></tr></table>	pencils								paper clips								oven mitts								green crayons								pencils								paper clips								oven mitts								green crayons								Balls				How many?	4	7	9	Balls				How many?	7	4	9
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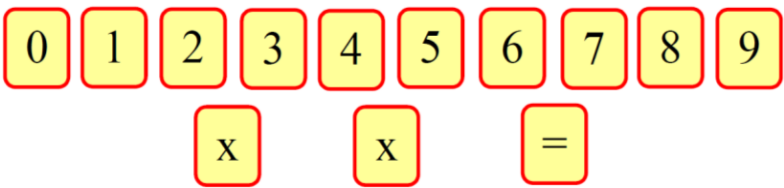
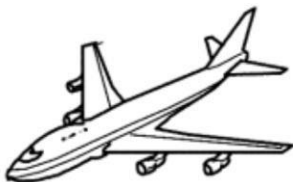
	Programme of Study	Examples																									
Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity		Can you make a list of animals with four legs? 	Can you make a list of animals with two legs? 																								
		<table><tr><th>colour of car</th><th>tally</th><th>frequency</th></tr><tr><td>red</td><td> I</td><td>11</td></tr><tr><td>blue</td><td> </td><td>5</td></tr><tr><td>green</td><td> III</td><td>8</td></tr><tr><td>black</td><td> </td><td>4</td></tr><tr><td>white</td><td>I</td><td>1</td></tr><tr><td>other</td><td> II</td><td>7</td></tr><tr><td>total</td><td></td><td>36</td></tr></table>		colour of car	tally	frequency	red	I	11	blue		5	green	III	8	black		4	white	I	1	other	II	7	total		36
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white	I	1																									
other	II	7																									
total		36																									
		<table><tr><th colspan="3">Favorite Pets</th></tr><tr><th>Pet</th><th>Tally Marks</th><th>Number</th></tr><tr><td></td><td> </td><td>10</td></tr><tr><td></td><td> </td><td>4</td></tr><tr><td></td><td> I</td><td>6</td></tr></table>		Favorite Pets			Pet	Tally Marks	Number			10			4		I	6									
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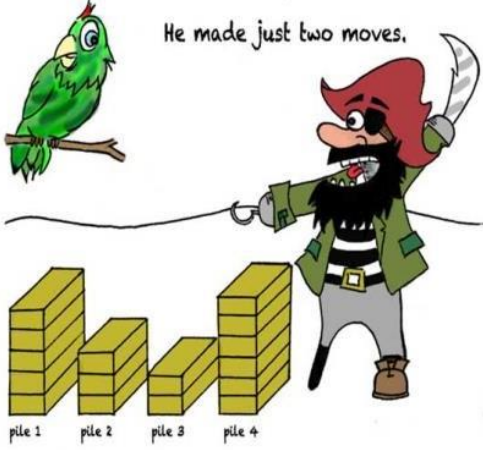
Programme of Study	Examples																					
Ask and answer simple questions about totalling and comparing categorical data	Children were asked to state how many pets they own. From the tally chart, what are the values of x, y and z? <table border="1"><thead><tr><th>Number of pets</th><th>Tally</th><th>Frequency</th></tr></thead><tbody><tr><td>0</td><td> </td><td>3</td></tr><tr><td>1</td><td> </td><td>x</td></tr><tr><td>2</td><td> </td><td>y</td></tr><tr><td>3</td><td> </td><td>z</td></tr><tr><td>4</td><td> </td><td>4</td></tr><tr><td>More than 4</td><td> </td><td>6</td></tr></tbody></table>	Number of pets	Tally	Frequency	0		3	1		x	2		y	3		z	4		4	More than 4		6
	Number of pets	Tally	Frequency																			
0		3																				
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3		z																				
4		4																				
More than 4		6																				
	Class 2G were asked how many brothers and sisters they have. This graph shows the results: Number of brothers and sisters <table border="1"><thead><tr><th>Number of brothers and sisters</th><th>Number of children</th></tr></thead><tbody><tr><td>0</td><td>6</td></tr><tr><td>1</td><td>8</td></tr><tr><td>2</td><td>5</td></tr><tr><td>3</td><td>2</td></tr><tr><td>4</td><td>1</td></tr><tr><td>5+</td><td>1</td></tr></tbody></table> - How many of the children have four brothers and sisters? - How many children have two brothers and sisters? - How many of class 2G do not have any brothers or sisters? - How many more children have one brother or sister than have three? - How many children altogether have more than three brothers and sisters? - How many brothers and sisters would you like?	Number of brothers and sisters	Number of children	0	6	1	8	2	5	3	2	4	1	5+	1							
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	Programme of Study	Examples																																																																																																														
		Graph of pets This graph shows how many children in 2T have these pets. <table><thead><tr><th>Type of pet</th><th>Children</th></tr></thead><tbody><tr><td>dog</td><td>5</td></tr><tr><td>cat</td><td>7</td></tr><tr><td>rabbit</td><td>9</td></tr><tr><td>gerbil</td><td>4</td></tr><tr><td>hamster</td><td>2</td></tr><tr><td>other</td><td>8</td></tr></tbody></table> Ask children to discuss in pairs and write questions relate to this graph. Here is a tally chart of how children go to school: <table><thead><tr><th>Type of transport</th><th>Tally</th><th>Total</th></tr></thead><tbody><tr><td>Walk</td><td> </td><td></td></tr><tr><td>Bus</td><td> </td><td></td></tr><tr><td>Cycle</td><td> </td><td></td></tr><tr><td>Taxi</td><td> </td><td></td></tr><tr><td>Car</td><td> </td><td></td></tr></tbody></table> Draw a graph showing these totals: Number of Children <table><tbody><tr><td>22</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>20</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>18</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>16</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>14</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>12</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>10</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>8</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>6</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>4</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>2</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>0</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>walk</td><td>bus</td><td>cycle</td><td>taxi</td><td>car</td></tr></tbody></table> Ways of getting to school	Type of pet	Children	dog	5	cat	7	rabbit	9	gerbil	4	hamster	2	other	8	Type of transport	Tally	Total	Walk			Bus			Cycle			Taxi			Car			22						20						18						16						14						12						10						8						6						4						2						0							walk	bus	cycle	taxi	car
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	Programme of Study	Examples
		Ladybird Count (NRICH) Some children were playing a game. They collected cards with ladybirds on them. Here are the cards they had at the end of the game: Aisha:  Danny:  Elaine:  Carmel:  Ben:  Make a graph or picture to show how many ladybirds each child had.

	Programme of Study	Examples
	Solving problems	Choose any nine consecutive numbers. Put them in a 3 x 3 square. Here is an example: Now add the diagonals and the middle line. What do you notice? $6 + 7 + 8 =$ $3 + 7 + 11 =$ $9 + 7 + 5 =$ Does this work for other 3 x 3 squares with consecutive numbers in? What other patterns can you find in this square? What about the middle line adding downwards? Hexagon addition Investigation Find a route through the maze from the IN to the OUT without going through any hexagon twice. Add up the numbers as you go. What total did you get? This route goes through $1 + 6 + 3 + 7 + 2 = 19$ Can you find a route through which is less than 19? Can you find a route through which is more than 19? How many different routes can you find? Which route gives you the largest total?

	Programme of Study	Examples
		 Choose three different numbers and multiply them together. All the answers have got to be under 30! $1 \times 2 \times 3 = 6$ $2 \times 3 \times 4 = 24$ $1 \times 3 \times 6 = 18$   I bought this model aeroplane for £6. I paid for it exactly, with no change. I only had £1 coins, £2 coins and £5 notes to pay with. There are 5 different ways to pay for the aeroplane. Can you work them all out? What would happen if the plane cost £7? 300 people were on the plane when it landed at Gatwick. 195 people got off and 408 got on. How many were now on the plane? There were 26 books on the top shelf of the sports books, 35 on the middle shelf and 20 on the bottom shelf. How many books were there on the top and middle shelves? How many books were on the middle and bottom shelves? How many sports books were there altogether? If 32 books are taken out how many would be left? A plant grows 0.025 m every 6 months. It is 1.5 m tall. How many years will it take to reach 2 m ?

	Programme of Study	Examples
		Josh the pirate has his gold bars in piles. He can move one or more bars at a time. He made all the piles the same height. He made just two moves.  How did he do it? Haku the dragon  Roman bought a dragon using silver coins. It cost him 45p There are nine different ways to pay 45p exactly using silver coins. Find them all! What if the dragon cost 50p? How many different ways are there to pay now?