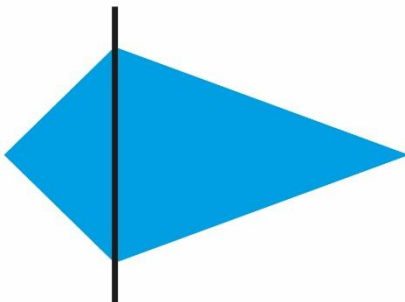
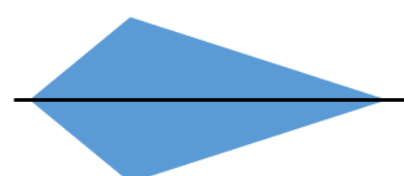

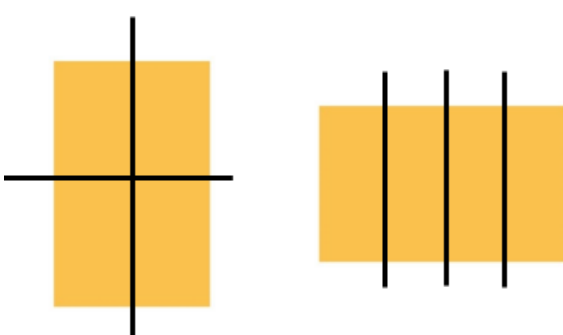
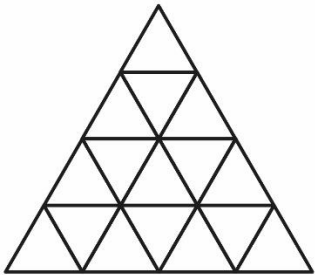

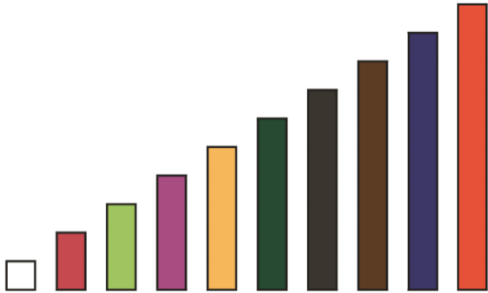
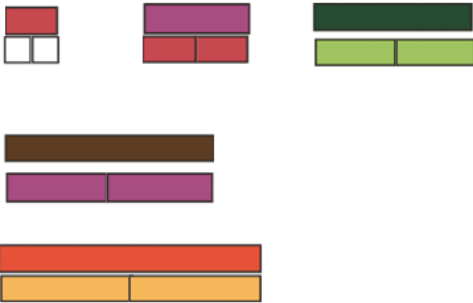
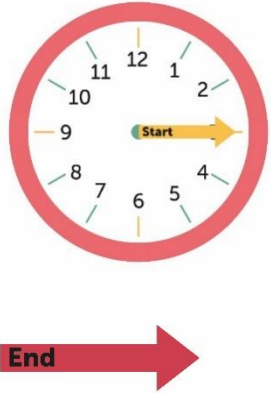
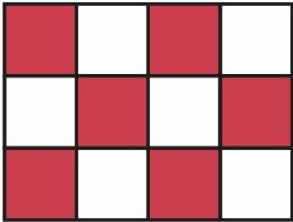
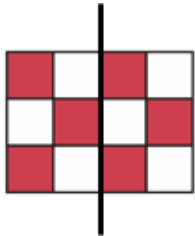

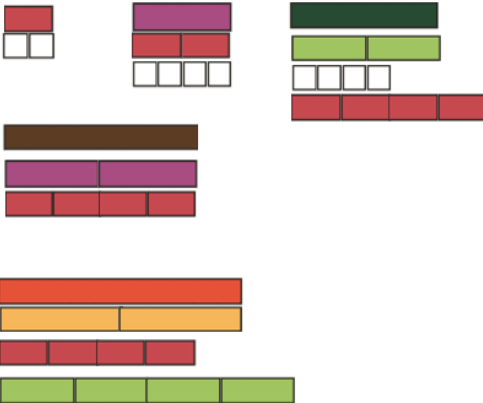

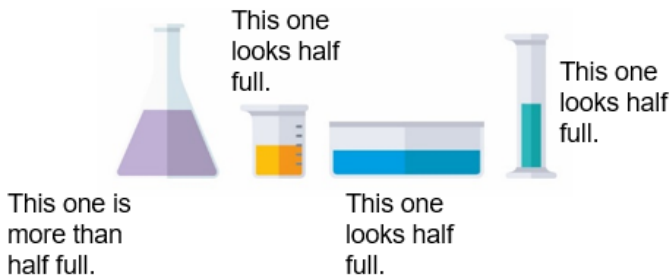




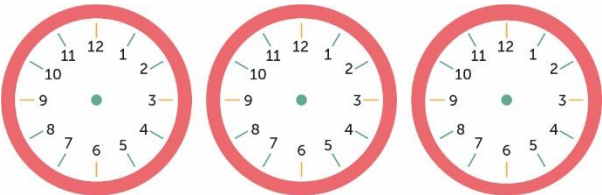
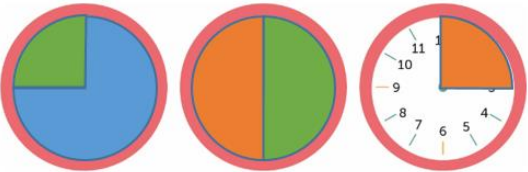

Year	Destination Question	Response Guidance	Hazard Guidance
1	 <p>Victor says, "A kite cannot be halved because the two parts are not equal."</p> <p>Is he correct?</p>	<p>Possible response:</p> <p>If you cut the shape there then the pieces will not be equal.</p> <p>I folded my shape and you can cut it in half another way.</p> 	<p>Children could have paper kites to test.</p> <p>Watch for children who struggle to distinguish between equal and unequal pieces.</p> <p>Watch out for children who believe shapes can only be halved with a vertical cut.</p>
1	 <p>Show two different ways of splitting this shape into quarters.</p>		<p>Children could have copies of the shape for them to test.</p> <p>Watch out for children who incorrectly use diagonal cuts, thinking they have shown quarters.</p> <p>Some children could be encouraged to show both examples and non-examples.</p>

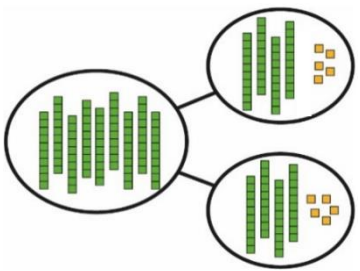
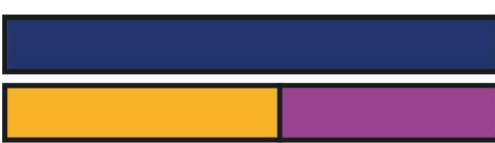
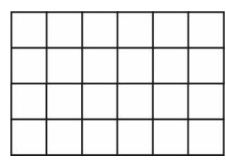
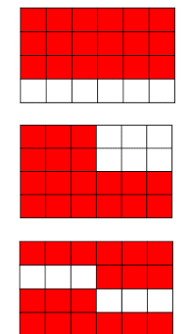
1	<div></div> <p>Colour one quarter of this shape.</p>	<p>Possible response:</p> <p>There are 16 triangles. One quarter of 16 is 4. I need to shade 4 triangles.</p> <div><table><tr><td colspan="4">16</td></tr><tr><td>$\frac{1}{4}$</td><td>$\frac{1}{4}$</td><td>$\frac{1}{4}$</td><td>$\frac{1}{4}$</td></tr><tr><td>4</td><td>4</td><td>4</td><td>4</td></tr></table></div>	16				$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	4	4	4	4	<p>How confident were the children at finding a quarter of amounts? Can they apply this understanding to working with shapes?</p> <p>Do the children understand that they could shade any 4 triangles and they don't need to be touching?</p>
16															
$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$												
4	4	4	4												
1	<div></div> <p>Jayne says that only every other rod, starting with the red rod, can be halved.</p> <p>Is she correct?</p>	<p>Possible response:</p> <div></div> <p>This is true. You can only halve the pink, purple, green, brown and orange rods.</p> <p>You can only halve the even numbers, which are 2, 4, 6, 8 and 10.</p>	<p>Watch for children who are not secure with the concept of halving and instead split rods into 2 groups using different rods such as using the white and pink rod to make the green.</p>												

1	 <p>What numbers could the end hand could be pointing to if it had turned more than $\frac{1}{4}$ of a turn but less than $\frac{1}{2}$ a turn?</p>	<p>A quarter turn could mean that the hand is pointing to either the 12 or the 6 dependent on whether the children move it in a clockwise or anticlockwise direction. A half turn will mean that the hand is pointing to the 9. Children could show their turns on the clock and then respond to the question.</p> <p>Possible response:</p> <p>The numbers 7 and 8 are between a $\frac{1}{4}$ turn clockwise and a $\frac{1}{2}$ turn.</p> <p>The numbers 11 and 10 are between a $\frac{1}{4}$ turn anticlockwise and a $\frac{1}{2}$ turn.</p>	<p>Children could use the following writing frame to help them to structure their response: The numbers ... and ... are between a $\frac{1}{4}$ turn and a $\frac{1}{2}$ turn.</p> <p>The vocabulary of 'clockwise' and 'anticlockwise' could also be provided.</p>
1	 <p>$\frac{1}{2}$ of this shape is shaded.</p> <p>True or False?</p> <p>Explain your thinking.</p>	<p>Possible responses:</p> <p>True</p> <p>There are 12 squares in total. 6 of the squares are red. Half of 12 is 6.</p> <p>If I split the shape down the middle then there are 3 shaded and 3 unshaded squares on each side.</p> 	<p>Do the children recognise this as half, thinking about half of an amount?</p> <p>Are they confident that this shows half, even though the shaded half is spread across the shape, rather than together in a block?</p>

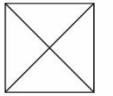



1	<p>Draw the bar model to represent:</p> $\frac{1}{2} \text{ of } 10 = 5$	<p>Possible response:</p> <div><table border="1" data-bbox="949 367 1211 424"><tr><td colspan="2">10 cubes</td></tr></table><table border="1" data-bbox="949 435 1211 547"><tr><td>$\frac{1}{2}$</td><td>$\frac{1}{2}$</td></tr><tr><td>5</td><td>5</td></tr></table></div> <div><table border="1" data-bbox="1288 319 1626 464"><tr><td colspan="2">10</td></tr><tr><td>5</td><td>5</td></tr></table></div>	10 cubes		$\frac{1}{2}$	$\frac{1}{2}$	5	5	10		5	5	<p>How confident are children with using the bar model to represent their solutions? Do they link the equal parts to sharing equally?</p>
10 cubes													
$\frac{1}{2}$	$\frac{1}{2}$												
5	5												
10													
5	5												
1	<p>Frankie says that if a Cuisenaire rod can be halved, it can also be quartered.</p> <p>Is this always, sometimes or never true?</p>	<p>Possible response:</p> <div><p>This is sometimes true.</p><p>You can quarter the purple and brown rod but you cannot quarter the green or orange rod.</p></div>	<p>Check that children understand what a quarter means.</p>										

1	 <p>All these are half-full.</p> <p>True or false?</p> <p>Explain your thinking.</p>	<p>Possible response:</p> <p>False.</p> 	<p>Watch for children who incorrectly say that the first container contains a half without considering that the top half of the container is thinner than the bottom half.</p>												
1	<p>$\frac{1}{4}$ of 20 = <input type="text"/></p> <table border="1" data-bbox="250 799 873 997"> <tr> <th colspan="4">20</th></tr> <tr> <td>$\frac{1}{4}$</td><td>$\frac{1}{4}$</td><td>$\frac{1}{4}$</td><td>$\frac{1}{4}$</td></tr> <tr> <td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td></tr> </table>	20				$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<p>Children could use cubes or counters to share 20 into 4 groups.</p> <p>$\frac{1}{4}$ of 20 = 5</p>	<p>Do the children share the 20 into 4 equal groups?</p>
20															
$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$												
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>												
1	 <p>Describe the position of these coins in relation to the measurements on the border roll.</p>	<p>Possible response:</p> 	<p>Will the children understand what 'in relation to' means? This could be reworded to 'What can you tell me about the position of each coin? Use the measurements to help you.'</p>												



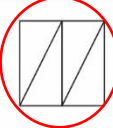

2	$\frac{1}{2}$ of 50 = $50 \div \square$ Half of $\square = \frac{1}{2}$ of 16 90 shared by $\square = \square \div 2$	$\frac{1}{2}$ of 50 = $50 \div 2$ Half of 16 = $\frac{1}{2}$ of 16 90 shared by 2 = $90 \div 2$	Are the children able to link the fraction notation of $\frac{1}{2}$ to the familiar language of 'half' and 'shared by 2', as well as the division sign?
2	<p>Mary walked for $\frac{3}{4}$ of an hour each day for 3 days. In total, did she walk for more than 2 hours?</p> <p>How do you know?</p> 	<p>Yes.</p> <p>Possible representation:</p>  <p>Day 1 = blue = $\frac{3}{4}$ hour</p> <p>Day 2 = blue + green = $\frac{3}{4}$ hour + $\frac{1}{4}$ hour = $1 \frac{1}{2}$ hours</p> <p>Day 3 = blue + green + orange = $\frac{3}{4}$ hour + $\frac{1}{4}$ hour + $\frac{1}{4}$ hour = $2 \frac{1}{4}$ hours.</p>	<p>Do the children know that 1 full turn around the clock by the minute hand would take 1 hour? Do the children use the clock faces to support their calculation?</p> <p>Can the children represent the $\frac{3}{4}$ of an hour across 2 clocks or 2 hours where needed, for example, regrouping $\frac{3}{4}$ into $\frac{1}{4}$ and $\frac{2}{4}$ ($\frac{1}{2}$)?</p>
2	 <p>What fraction of the shape is shaded?</p>	<p>Possible responses:</p> <p>The whole is 18 and 6 are shaded. 18 divided into groups of 6 is 3 so $\frac{1}{3}$ is shaded.</p> $\frac{6}{18}$	Do the children link fractions of shapes to finding fractions of amounts? Do they understand the link with division?

2	 <p>Write two ways of recording what is represented in the part whole model.</p>	<p>Possible responses:</p> <p>Half of 90 is 45</p> <p>$90 \div 2 = 45$</p> <p>90 shared into 2 groups gives you 45 in each group.</p> <p>$\frac{1}{2}$ of 90 is 45</p> <p>Double 45 is 90</p>	<p>Are the children able to link the fraction notation of $\frac{1}{2}$ to the familiar language of 'half' and 'shared by 2', as well as the division sign?</p> <p>Watch for children who think that 90 is an odd number as there are an odd number of tens and so cannot be halved.</p>
2	 <p>James says that the blue rod has been halved because two rods are equal to it. Is he correct? Explain your thinking</p>	<p>The yellow rod and purple rod are equal to the blue rod but the yellow and purple rods are not equal to each other so they are not halves of the blue rod.</p> <p>Yellow + purple = blue</p> <p>Yellow is not half of blue.</p> <p>Purple is not half of blue.</p> <p>When the blue rod is halved, there will be 2 equal pieces.</p>	<p>Are the children able to recognise that part of James' statement is true but the blue rod has not been halved?</p> <p>Do the children understand that when something is halved, the two resulting pieces are equally sized?</p>
2	 <p>Shade three quarters of this grid red. Can you find at least 3 different ways?</p>	<p>18 squares must be shaded.</p> <p>There are 4 groups of 6.</p> <p>$6 + 6 + 6 + 6$</p> <p>There are 24 squares in total.</p> <p>$\frac{1}{4} = 24 \div 4 = 6$ so $\frac{3}{4} = 6 \times 3 = 18$</p>	 <p>If the children do not know the product of 6 and 4, are they able to double 6 and then double again to find the total number of squares?</p> <p>Some children may recognise that because there are 4 groups of 6, 6 must be $\frac{1}{4}$ of 24.</p>

2

Quarters	Not Quarters
 	 

Spot the mistake in the table.

Quarters	Not Quarters
 	 

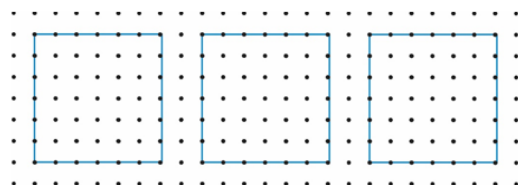
The circled shape is divided into quarters. There are 4 equally-sized triangles.

Do the children know that to be in quarters, there needs to be 4 equal parts?

Can they recognise quarters where the divisions are not in horizontal or vertical orientations?

Watch out for children who think that all of the shapes are divided into quarters because they are all split into 4 parts.

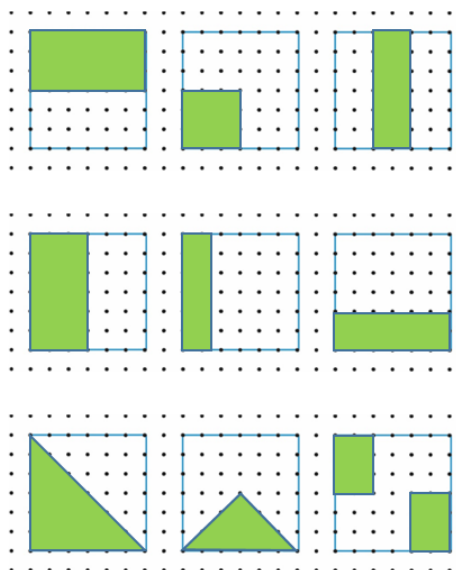
2



Show $\frac{1}{2}$ on the first square, $\frac{1}{4}$ on the second square and $\frac{1}{3}$ on the third square.

Can you complete each one in three different ways?



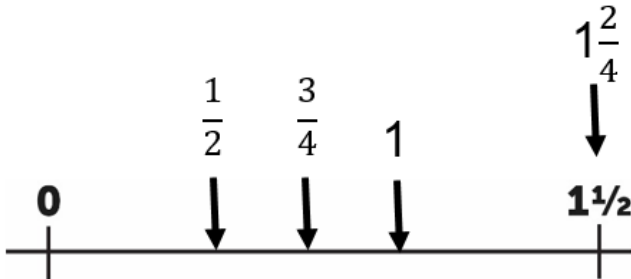
Possible responses:





Are the children secure with the fact that $\frac{1}{2}$ is 1 of 2 equal parts, $\frac{1}{4}$ is 1 of 4 equal parts and $\frac{1}{3}$ is 1 of 3 equal parts?

Are the children able to visualise fractions of shapes where the parts are not divided using horizontal or vertical lines?

Do the children count the number of possible squares within the shapes along the rows and columns to support with their divisions?

2	 <p>Can you prove $\frac{1}{2} = \frac{2}{4}$ using this rod?</p>	<p>The dark blue rod is worth 9. Half of 9 would not be a whole number.</p> <p>$8 + 1 = 9$ Half of 8 = 4 Half of 1 = $\frac{1}{2}$</p> <p>There is not a rod that is half the size of this rod so you can't prove that $\frac{1}{2} = \frac{2}{4}$ using this rod.</p>	<p>Do the children have a systematic approach to deciding whether or not there is a rod half the length of this one?</p> <p>Do they try the purple rod and find it is a little too small and then the yellow rod and find it is a little too big?</p>								
2	<p>$\square = \frac{3}{4}$ of 80</p>	<p>$60 = \frac{3}{4}$ of 80</p> <table border="1" data-bbox="940 694 1715 766"> <tr> <td colspan="4">80</td></tr> <tr> <td>20</td><td>20</td><td>20</td><td>20</td></tr> </table> <p>8 tens \div 4 = 2 tens</p> <p>2 tens \times 3 = 6 tens = 60</p>	80				20	20	20	20	<p>Do the children use base facts to help them to calculate, e.g. $8 \div 4 = 2$?</p> <p>Watch for children who are confused by the positioning of the equals sign.</p>
80											
20	20	20	20								
2	<p>Where would 1, $\frac{1}{2}$, $\frac{3}{4}$ and $1\frac{2}{4}$ be placed on this number line?</p> 		<p>Do the children take into account the $1\frac{1}{2}$ marked at the end of the number line when deciding where to place 1?</p> <p>Do the children place $\frac{3}{4}$ half way between $\frac{1}{2}$ and 1? Watch out for children who place $\frac{3}{4}$ three-quarters of the way along the number line, not taking into account the start and end points.</p>								

2	<p>Anika had some ribbons. She knew the blue spotty ribbon was 60cm long.</p>  <p>Estimate the length of the other ribbons.</p>	<p>The red ribbon is about $\frac{1}{4}$ of the blue ribbon. Half of 60cm = 30cm. Half of 30cm = 15cm. The red ribbon is about 15cm.</p> <p>The black ribbon is about $\frac{1}{3}$ as long as the blue ribbon. $60 \div 3 = 20$ because 6 tens $\div 3 = 2$ tens. The black ribbon is about 20cm.</p> <p>The pink ribbon is about $\frac{1}{2}$ the length of the blue ribbon so the pink ribbon is about 30cm long.</p>	<p>Do the children use benchmarks to support their estimation?</p> <p>Do the children work out the length of the pink ribbon using its relationship with the blue ribbon or the red ribbon?</p>
2	 <p>What fraction could you count in on this counting stick?</p> <p>How do you know?</p>	<p>You could count in thirds because there are 3 equal jumps between 0 and 1.</p> <p>The counting stick would finish at $3\frac{1}{3}$.</p>	<p>Are the children able to identify that there are 3 equal parts between each whole number? Do they link this to thirds?</p>