

Mathematics: Measurement

Area	Objectives	Suggested Activities	Vocab
<b>Cross-Curricular Links</b>			
<p><b>Art</b> – look at art (still life) and children compare the size of objects in them when discussing what they can see. When doing junk modelling or collage or sculptures have materials of different sizes and lengths for the children to choose between. Look at spaces on the page and model language such as 'we need something 'bigger than...''</p> <p><b>PE</b> – when using balls or hoops compare the sizes. Encourage children to find the big ball or small ball. When hitting or rolling balls describe the distance e.g. this went a short way, this one went the longest. Discuss distances when racing – short or long.</p> <p><b>Literacy</b> – use stories linked to length. Compare the size of books.</p> <p><b>ICT</b> – use computer activities such as Percy Gets Measuring and Education City. Take photographs of everyday items that are different sizes or lengths. Use Colour Magic to create pictures with objects of different sizes and lengths.</p> <p><b>DT</b> – compare the sizes of products when researching ideas. Children choose different lengths and sizes when making items. Encourage the language. Children compare their work to their peers.</p> <p><b>History</b> – Look at historical artefacts and societies and compare sizes/lengths/ heights.</p> <p><b>Geography</b> – on local walks compare sizes and lengths of different items e.g. leaves/trees or cars. Link to topics – draw a long snake in the rainforest or a short one.</p> <p><b>Science</b> – look at size in experiments e.g. when growing plants, which is tall/short or tallest/shortest. Or when using magnets – which magnet made the paper clip move the longest distance?</p> <p><b>PSHE</b> – set up role play jobs that involves length.</p> <p><b>Music</b> – sing size songs. Look at the length of time a sound is played.</p> <p><b>RE</b> – explore the sizes of different symbols or artefacts.</p> <p><b>Cooking</b> – look at the size of ingredients or end products and compare. Ask the children to roll dough into big/small balls or long/short shapes.</p>			
<p><b>0 – 3 years (8–20 months)</b></p>	<p>To show awareness of different lengths by exploring different objects (big and small).</p> <p>To match big and small objects.</p> <p>To find big and small objects from a choice of two.</p> <p>To identify 'big' and 'small' objects.</p>	<ul style="list-style-type: none"> <li>• Give a range of different sized objects to explore. Use different settings e.g. using sensory materials or in the sensory room or during role play situations.</li> <li>• To fit lids to various types and sized containers such as saucepans or jars.</li> <li>• Use problem solving activities related to size e.g. choosing the appropriate tablecloth to put on a table or cloth to hide a toy or sheet of paper large enough to wrap a box. Children choose between 2.</li> <li>• Put the large and small animals in different fields – given a choice of 2 animals each time.</li> <li>• Dressing up – find appropriately sized clothes from a choice of two for soft toys, dolls and them.</li> <li>• Find the 'big' and 'small' objects from pairs e.g. can you find the small ball or the big plate?</li> </ul>	<p>Same different Both Little Long Small Big tall Large Short biggest Longest Smallest</p>
<p><b>0 – 3 years (16–26 months)</b></p>	<p>To begin to show an understanding of 'bigger than...'</p>	<ul style="list-style-type: none"> <li>• Ask children to make models bigger than one you show them e.g. a car bigger than this one or a tower bigger than this one or a butterfly bigger than this one.</li> </ul>	<p>Largest Shortest Tallest</p>

Mathematics: Measurement


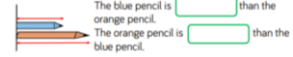

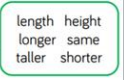
		<ul style="list-style-type: none"> <li>• Shoe sort – give children pair shoes of different sizes. Discuss how they know they are pairs and then ask them to find ones that a ‘bigger than...’</li> </ul>	<p>Bigger Thin Thick</p>
<p><b>0 – 3 years (22-36 months)</b></p>	<p>To find bigger and smaller objects on request.</p> <p>To compare the length/height of objects where there is a marked difference and then when the difference is not great.</p> <p>To begin understand, respond to and use the language long/short/tall using words/signs/symbols.</p>	<ul style="list-style-type: none"> <li>• During a range of lessons such as PE, cooking or DT, ask the children to find bigger and smaller objects to complete tasks.</li> <li>• Find the ‘long’ and ‘short’ object from pairs such as pencils, towers, ribbons or trains. Use objects with marked differences and then reduce the difference in length/height.</li> <li>• Make towers with construction toys responding to the language tall/short.</li> <li>• Make a range of models out of Lego or other construction materials and encourage the children to compare using signs/words/symbols.</li> <li>• On local visits compare the length/height of different objects seen e.g. street lights and telegraph poles.</li> </ul>	<p>Wide Longer Smaller taller Shorter Larger Length Height</p>
<p><b>3- 4 years (30-50 months)</b></p>	<p>To compare two lengths/heights identifying tall/short/long, longest/tallest/shortest and taller/shorter/longer using words/signs/symbols.</p>	<ul style="list-style-type: none"> <li>• Make two worms/sausages from play dough. Give properties e.g. make a wide one or a long one. Ask the children to make one that is longer/shorter/wider than one you show.</li> <li>• Repeat activity above but using different materials such as clay or painting and link to other areas e.g. snakes in the rainforest, Roman/Viking swords. Can you paint/make one that is long/short/wide/longer/shorter/wider than this one?</li> <li>• Make necklaces with beads – can you make one for a child and an adult? Which one needs to be longer/shorter?</li> <li>• Car races – who can make the car go a long way? Go furthest? Whose went the shortest distance?</li> <li>• Make train tracks, necklaces, towers as long/tall as this...table/cupboard/door.</li> <li>• Draw long/short/tall lines in art packages on the computer using touch screen and compare them.</li> <li>• Monsters – can you make a tall wide monster from play dough/clay? Can you make a home from boxes that is big enough to fit it? Discuss the length of the sides and heights.</li> <li>• Spaceships – supply two pots of multilink, one with lots and one with only a few. Which pot would the children use to make a long spaceship or a short one? This activity can be used to make other objects linked to topics.</li> <li>• Longer/shorter than a straw. Give children a straw and ask them to find things in the classroom that are longer than it. Record using photos or drawings. Repeat for shorter than.</li> </ul>	





Mathematics: Measurement

<p><b>Reception (40-60 months)</b></p>	<p>To directly compare the length of two or three objects where the difference is not great using symbols/signs and words (long(er), short(er) and tall(er)).</p>	<ul style="list-style-type: none"> <li>• Compare the thickness of bread in cooking.</li> <li>• Make biscuits of different thicknesses. Compare them and encourage children to identify the different thickness. Could also do with biscuits of different lengths.</li> <li>• Make towers using blocks or cubes that are the same height as cardboard tubes or a variety of objects. Can they make a tower that is taller/shorter than...?</li> <li>• Use computer activities such as Percy gets Measuring.</li> <li>• Put ribbons/scarves/pencils/towers in order of length.</li> <li>• Children make nesting boxes or Russian style dolls.</li> <li>• Draw round children and decorate – put them in order of height.</li> <li>• Train track race. Use timer and challenge children to make the longest track in the time. Compare them – whose is longest/shortest? How can we tell? Could do challenge with other activities such as building towers or making necklaces.</li> <li>• Make newspaper tube towers in teams – who can make the tallest? Or the longest tube where they can still hear their friends whispering at the end of it.</li> <li>• Using height charts or sugar paper tapes compare the heights of children in the class.</li> <li>• Long jump – mark where the children land with chalk or tape. Compare the distances – who jumped furthest?</li> <li>• Introduce more objects to compare.</li> </ul>	
--	---	--	--

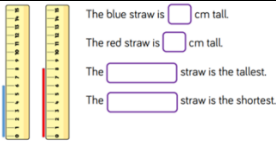


Area	Objectives	Suggested Activities	Vocab
<p><b>Cross-curricular links</b></p> <p><b>Art</b> – use comparison activities from Early Skills but develop the level of language. Children measure materials they need for their art.</p> <p><b>PE</b> – during races or ball throwing/rolling activities or long jumps children measure the distances using non-standard and standard units. They compare and order them.</p> <p><b>Literacy</b> – use stories linked to length. Write instructions for making a DT piece recording measurements.</p> <p><b>ICT</b> – use computer activities such as Percy Gets Measuring and Education City. Children measure distances moved by ‘Beebot’ Robots. They use computer programmes to generate tables to compare sizes of spaces e.g. the corridor, hall and playground.</p> <p><b>DT</b> – children measure their materials needed for their products.</p> <p><b>PSHE</b> – set up role play jobs that involves measuring length.</p> <p><b>Geography</b> – using measurement when thinking about improving the local environment e.g. the playground.</p> <p><b>Science</b> – see Early Skills but encourage the children to measure in non-standard and standard units.</p>			


Mathematics: Measurement

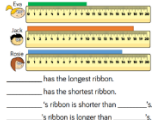
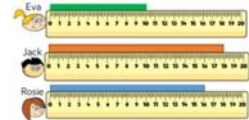


<p><b>Bridging 1</b></p>	<p>To be able to compare objects directly focusing on one dimension where the difference is less obvious</p>	<ul style="list-style-type: none"> <li>Children use language to describe length and height e.g. the tree is tall, the pencil is short. Children use mathematical language supported with symbols and Makaton e.g. longer/shorter (length), taller/shorter (height), wider/narrower (breadth)</li> <li>Give chn dough and ask them to make long shapes, short shapes, thin snakes, thick snake etc</li> <li>Use compare bears and ask children to make a long line/short line of bears</li> <li>Build towers using bricks/cubes. Build a tall tower, a short tower etc</li> <li>Give 2 objects with an obvious difference and ask children to put under a long/short/tall/short/wide/narrow symbol</li> </ul>	<p>Same (size/width/height) Little Long Small Big tall Short Large biggest</p>
<p><b>Bridging 2</b></p>			<p>Longest Smallest Largest Tallest Shortest Bigger Thin Thick Wide Longer Smaller taller</p>
<p><b>Bridging 3</b></p>			<p>Shorter Larger Different (size/width/height) Equal Unequal Units Measure Order Estimate Centimetres Metres Millimetres Compare</p>
<p><b>Milestone 1</b></p>	<p>To compare and describe, during practical problems, length and height (big/biggest/bigger/small/smallest/smaller, long/short/tall, longest/shortest/tallest and longer/shorter/taller).</p>	<ul style="list-style-type: none"> <li>Children use and understand the language of length such as long, longer, short, shorter, tall, taller. They recognise this language will change depending on what type of length they are describing or comparing.</li> <li>Use the words <b>tall</b> and <b>taller</b> in the sentence stems to compare the height of the man and the boy  <p>The man is <input type="text"/> than the boy.</p> <p>The boy is <input type="text"/> than the man.</p>  </li> <li>Use the words <b>longer</b> and <b>shorter</b> in the sentence stems to compare the length of the orange and blue pencil  <p>The blue pencil is <input type="text"/> than the orange pencil. The orange pencil is <input type="text"/> than the blue pencil.</p> <p>Which pencil is the longest? Which pencil is the shortest?</p>  </li> <li>Compare the vehicles using the words to help you    </li> </ul>	

	<p>To measure using non-standard units</p>	<ul style="list-style-type: none"> <li>• During lessons such as Art, DT or science encourage children to compare and describe the length of various materials.</li> <li>• Set up practical problems (using and applying) that involve the children exploring and comparing length and height. For example, ordering the children by height. Who comes first? Why? And then?</li> <li>• Use computer software such as Percy gets Measuring and Education City.</li> </ul> <ul style="list-style-type: none"> <li>• Children use non-standard units, such as cubes, hands and straws to measure length and height. Ensure children understand the units they use need to be of equal length. Children recognise that longer, non-standard units are more suitable for measuring the length and height of longer/taller objects. Children need to understand that non-standard units should be exactly in line with one end of the object with no gaps between them to get an accurate measurement.</li> <li>• Use cubes to measure the length of objects around your classroom. Write a sentence for each object.  <p>The pencil is <input type="text"/> cubes long.</p>  <p>The <input type="text"/> is <input type="text"/> cubes long.</p> </li> <li>• Mr White is 5 sticks tall. Choose a suitable piece of equipment to measure how tall your friend is.   </li> </ul>	<p>Greater (length/height) Length height</p>
	<p>To measure using some standard units</p>	<ul style="list-style-type: none"> <li>• Which is longer – your maths book or a lunch box? The <input type="text"/> is longer than the <input type="text"/>.</li> <li>• Children build on prior knowledge of measuring length and height using non-standard units and apply this to measuring using a ruler. They should be able to understand that objects can vary in length and size, so a standard unit of measurement is required. It is important that children know to measure from 0 cm.</li> <li>• How long is the building block?   The building block is <input type="text"/> cm.</li> <li>• What is the length of the chocolate bar?   The chocolate bar is <input type="text"/> cm.</li> <li>• Which is the tallest?</li> </ul>	

Mathematics: Measurement

	<p>To measure and order more than 2 lengths.</p>	 <ul style="list-style-type: none"> <li>• Encourage the use of a variety of units to measure and order lengths and height in.</li> <li>• Children use non-standard e.g. cubes/hands and standard equipment to measure lengths/heights.</li> <li>• Set challenges e.g. Child A wants a long photo frame and child B wants a short one and child C wants one in between. Children measure and order the lengths for the children.</li> </ul>	
<p><b>Milestone 2</b></p>	<p>To suggest suitable units and measuring equipment to estimate and measure length</p> <p>To make simple measurements accurately.</p> <p>To become familiar with standard units.</p> <p>To measure using cm</p>	<ul style="list-style-type: none"> <li>• Show areas or images of areas – ask children to say what they would use to measure it in (this could be non-standard or standard units depending on their knowledge). For example, a table, the playground, the distance to Croydon.</li> <li>• Children measure a range of lengths for different activities such as science or DT. They use non-standard units to measure accurately. Link with Objective 2.</li> <li>• See Objective 4 but introduce standard units – including using measuring tapes, rulers, metres sticks and trundle wheels.</li> <li>• Use computer activities such as ‘Percy gets measuring’ and Education City.</li> <li>• Children measure to the nearest centimetre using a ruler or tape measure. They measure both length and height and focus on the importance of measuring from 0 rather than the end of the ruler or tape measure.</li> <li>• Choose a variety of objects and practice measuring them using a centimetre ruler. Remember to line up the object to the 0 mark on the ruler e.g. How long is the pencil to the nearest centimetre?</li> </ul>   <ul style="list-style-type: none"> <li>• How tall is the glass? What other objects can you find to measure the height of?</li> </ul>	

	<p>To measure using metres</p>	<ul style="list-style-type: none"> <li>• Draw a line that is: • 5 cm long • 8 cm long • Longer than 4 cm but shorter than 7 cm.</li> <li>• Children begin to measure larger objects using metres. They think about whether it is better to measure items in centimetres or metres and discuss the reasons why. Children do not yet convert from metres to centimetres; however they may see that 100 centimetres is the same as 1 metre and measurements can be written as mixed units e.g. the child is 1 metre and 25 centimetres tall.</li> <li>• Use a metre stick to measure objects in your classroom and place them into the groups.</li> </ul> <div data-bbox="801 469 1025 544" style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p style="font-size: small; margin: 0;">Longer than a metre      Shorter than a metre</p>  </div> <p style="text-align: center; margin: 5px 0;">Can you find anything that is exactly one metre?</p> <ul style="list-style-type: none"> <li>• Use a metre stick to count up in 10 cm blocks. What do you notice about 100 cm? Possible responses: it is the same a metre, 1 m is written, it is the end of the stick.</li> <li>• Measure the length of the school hall. Record the length in metres and centimetres, e.g. 15 metres and 13 centimetres.</li> </ul>																						
	<p>To compare lengths</p>	<ul style="list-style-type: none"> <li>• Children compare lengths of objects using comparison language and symbols. They use language such as longer than, shorter than, taller than, longest, shortest and tallest. Children only compare using the same unit of length in a question. However, the same number but different unit of measure could also be used to check that children understand metres are bigger than centimetres.</li> <li>• Compare the lengths using <b>longer than, shorter than, or the same as.</b></li> </ul> <div data-bbox="801 932 1025 1034" style="margin: 10px 0;"> <table style="border-collapse: collapse; font-size: small;"> <tr> <td style="padding-right: 5px;">15 cm is</td> <td style="border: 1px solid blue; width: 100px; height: 15px;"></td> <td style="padding-left: 5px;">60 cm</td> </tr> <tr> <td>Sixty metres is</td> <td style="border: 1px solid blue; width: 100px; height: 15px;"></td> <td>60 m</td> </tr> <tr> <td>96 m is</td> <td style="border: 1px solid blue; width: 100px; height: 15px;"></td> <td>69 m</td> </tr> <tr> <td>80 cm is</td> <td style="border: 1px solid blue; width: 100px; height: 15px;"></td> <td>80 m</td> </tr> </table> </div> <ul style="list-style-type: none"> <li>• Use <b>&lt;</b>, <b>&gt;</b> or <b>=</b> to complete the statements.</li> </ul> <div data-bbox="824 1082 1003 1161" style="margin: 10px 0;"> <table style="border-collapse: collapse; font-size: small;"> <tr> <td style="padding-right: 10px;">7 metres</td> <td style="text-align: center;">○</td> <td style="padding-left: 10px;">17 metres</td> </tr> <tr> <td>18 cm</td> <td style="text-align: center;">○</td> <td>18 m</td> </tr> <tr> <td>32 cm</td> <td style="text-align: center;">○</td> <td>32 centimetres</td> </tr> </table> </div> <ul style="list-style-type: none"> <li>• Choose 2 objects from your classroom. Estimate the length of each object. Then measure both objects and compare the lengths using or = Try this again, but this time measuring your friends' heights.</li> </ul>	15 cm is		60 cm	Sixty metres is		60 m	96 m is		69 m	80 cm is		80 m	7 metres	○	17 metres	18 cm	○	18 m	32 cm	○	32 centimetres	
	15 cm is		60 cm																					
Sixty metres is		60 m																						
96 m is		69 m																						
80 cm is		80 m																						
7 metres	○	17 metres																						
18 cm	○	18 m																						
32 cm	○	32 centimetres																						
<p>To order lengths</p>	<ul style="list-style-type: none"> <li>• Children order more than two lengths from shortest to longest and vice versa. This will help them recap their understanding of ordering numbers to 100 Children will order given lengths as well as</li> </ul>																							

	<p>To solve problems using length</p>	<p>ordering objects by measuring each length themselves. They will use the language of shorter, shortest, longer and longest to describe the order.</p> <ul style="list-style-type: none"> <li>Ava, Jack and Rosie are comparing the length of ribbons. Complete the sentences</li> </ul>  <ul style="list-style-type: none"> <li>Choose five objects in your classroom. Measure them using a ruler. Order the objects from longest to shortest. Write at least three sentences to describe the objects using the words longer, longest, shorter and shortest.</li> <li>Children draw on their skills of the four operations and apply their understanding to length. They solve one-step and two-step problems relating to length and use concrete and pictorial representations to calculate efficiently.</li> </ul>  <ul style="list-style-type: none"> <li>Teddy has a toy train and a toy plane. The train is 28 cm long. The plane is 16 cm longer. How long is the plane? The toy train is double the length of a toy car. How long is the toy car?</li> </ul> 	
<p><b>Milestone 3</b></p>	<p>To measure and compare lengths using standard units (centimetres and metres).</p> <p>To measure lengths using millimetres</p>	<ul style="list-style-type: none"> <li>Set problems e.g. child A needs to have the longest sleeve for his top, child B the shortest and child C the one in between. Children measure, compare and give the sleeve to the correct person. They describe who has what and why.</li> <li>Use computer activities such as 'Percy gets measuring' and Education City.</li> <li>Children are introduced to millimetres for the first time and build on their understanding of centimetres and metres. Children use different measuring equipment including rulers, tape measures, metre sticks and trundle wheels. They discuss which equipment is the most appropriate depending on the object they are measuring.</li> <li>Measure the lines to the nearest centimetre. Can you measure the lines in millimetres?</li> </ul> 	



To know equivalent lengths of metres and centimetres

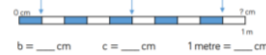
To know equivalent lengths of millimetres and centimetres

- What is the length of each pencil?

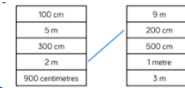


- Children recognise that 100 cm is equivalent to 1 metre. They use this knowledge to convert other multiples of 100 cm into metres and vice versa. When looking at lengths that are not multiples of 100, they partition the measurement and convert into metres and centimetres. At this stage, children do not use decimals.

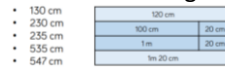
- If  $a = 10$  cm, calculate the missing measurements.



- Can you match the equivalent measurements?

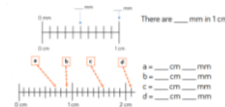


- Eva uses this diagram to convert between centimetres and metres. Use Eva's method to convert:



- Children recognise that 10 mm is equivalent to 1 cm. They use this knowledge to convert other multiples of 10 mm into centimetres and vice versa. When looking at lengths that are not multiples of 10, they partition the measurement and convert into centimetres and millimetres. At this stage, children do not use decimals.

- Fill in the blanks.



- Measure different items around your classroom. Record your measurements in a table in cm and mm, and just mm.

- Complete the part whole models.



To compare and order lengths recording the results with  $>$ ,  $<$  and  $=$ .

To be able to add lengths together

- Introduce the symbols  $>$ ,  $<$  and  $=$ . Play matching games with the symbols and meaning. Compare obvious objects using the symbols e.g. big and small objects until children are sure of the meaning.
- Children measure a range of lengths e.g. lines on paper/strips of paper or heights of children or lengths such as the playground/hall/corridor. They compare them and order recording their findings using the symbols  $>$ ,  $<$  and  $=$ .
- Children compare and order lengths based on measurements in mm, cm and m. They use their knowledge of converting between units of measurement to help them compare and order. Encourage children to convert all the measurements to the same unit of length before comparing.
- Complete the sentences.

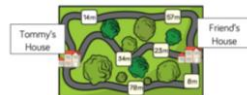
Child	Height
Rose	109 cm
Amir	1 m 5 cm
Jack	135 cm
Dora	1 m 45 mm

Rose is \_\_\_\_\_ than Jack.  
 Jack is \_\_\_\_\_ than Dora.  
 Amir is \_\_\_\_\_ than Rosie.  
 Dora is \_\_\_\_\_ than Amir.

- Four friends are building towers. Ava's tower is 22 cm and 7 mm tall. Teddy's tower is 22 cm tall. Annie's tower is 215 mm tall. Dexter's tower is 260 mm tall. Order the children's towers in descending order.

$<$    $<$    $<$

- Using a ruler, measure the width of 5 different books to the nearest mm. Record your results in a table, then compare and order them.
- Children add lengths given in different units of measurement. They convert measurements to the same unit of length to add more efficiently. Children should be encouraged to look for the most efficient way to calculate and develop their mental addition strategies. This step helps prepare children for adding lengths when they calculate the perimeter.
- Ron builds a tower that is 14 cm tall. Jack builds a tower that is 27 cm tall. Ron puts his tower on top of Jack's tower. How tall is the tower altogether?
- Tommy needs to travel to his friend's house. He wants to take the shortest possible route. Which way should Tommy go?

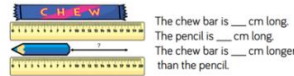


- Miss Nicholson measured the height of four children in her class. What is their total height?

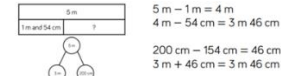
95 cm    1 m and 11 cm    1 m and 50 mm    89 cm

To be able to subtract lengths together

- Children use take-away and finding the difference to subtract lengths. Children should be encouraged to look for the most efficient way to calculate and develop their mental subtraction strategies. This step will prepare children for finding missing lengths within perimeter.
- Find the difference in length between the chew bar and the pencil.



- Alex has 5 m of rope. She uses 1 m and 54 cm to make a skipping rope. She works out how much rope she has left using two different models.



Use the models to solve:

- Mrs Brook's ball of wool is 10 m long. She uses 4 m and 28 cm to knit a scarf. How much does she have left?
- A roll of tape is 3 m long. If I use 68 cm of it wrapping presents, how much will I have left?

To measure length and perimeter

- Children are introduced to perimeter for the first time. They explore what perimeter is and what it isn't. Children measure the perimeter of simple 2-D shapes. They may compare different 2-D shapes which have the same perimeter. Children make connections between the properties of 2-D shapes and measuring the perimeter.
- Using your finger, show me the perimeter of your table, your book, your whiteboard etc.
- Tick the images where you can find the perimeter. Explain why you can't find the perimeter of some of the images

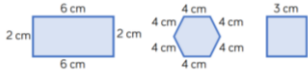


- Use a ruler to measure the perimeter of these 2D shapes



To calculate perimeter

- Children use their understanding of the properties of shape to calculate the perimeter of simple 2-D shapes. It is important to note they will not explore the formula to find the perimeter of a rectangle at this point. They explore different methods for calculating the perimeter of a shape. For example, they may use repeated addition or they may make connections to multiplication.
- Calculate the perimeter of the shapes.



Can you find more than one way to calculate the perimeter?

- Use two different methods to calculate the perimeter of the squares.



- What is the length of the missing side?



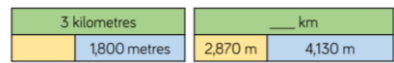
**Milestone 4**  
To be able to use kilometres and convert between kilometres and metres

- Children multiply and divide by 1000 to convert between kilometres and metres. They apply their understanding of adding and subtracting with four-digit numbers to find two lengths that up to a whole number of kilometres. Children find fractions of kilometres, using their year 3 knowledge of finding fractions of amount. Encourage children to use bar models to support their understanding.

- Complete the statements

3,000 m = \_\_\_ km     8 km = \_\_\_ m  
 5 km = \_\_\_ m     3 km + 6 km = \_\_\_ m  
 500 m = \_\_\_ km     250 m = \_\_\_ km  
 9,500 m = \_\_\_ km     4,500 m - 2,000 m = \_\_\_ km

- Complete the bar models



- Use <, > or = to make the statements correct

500 m           $\frac{1}{2}$  km  
 7 km          800 m  
 5 km          500 m

To find perimeter of shapes on a grid

- Children calculate the perimeter of rectilinear shapes by counting squares on a grid. Rectilinear shapes are shapes where all the sides meet at right angles. Encourage children to label the length of each side and to mark off each side as they add the lengths together. Ensure that children are given centimetre squared paper to draw the shapes on to support their calculation of the perimeter.

- Calculate the perimeter of the shapes



To calculate the perimeter of rectangles

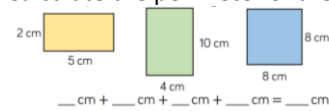
To calculate the perimeter of rectilinear shapes

- Using squared paper, draw two rectilinear shapes, each with a perimeter of 28cm. What is the longest side in each shape? What is the shortest side in each shape?
- Draw each shape on centimetre squared paper. Order the shapes from smallest to largest perimeter.

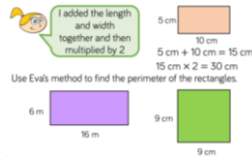


- Children calculate the perimeter of rectangles (including squares) that are not on a squared grid. When given the length and width, children explore different approaches of finding the perimeter: adding all the sides together, and adding the length and width together when multiplying by 2. Children use their understanding of perimeter to calculate missing lengths and to investigate the possible perimeters of squares and rectangles.

- Calculate the perimeter of the rectangles

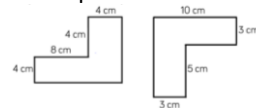


- Ava is finding the perimeter of the rectangle.

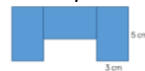


- Children will begin to calculate perimeter of rectilinear shapes without using squared paper. They use addition and subtraction to calculate the missing sides. Encourage children to continue to label each side of the shape and to mark off each side as they calculate the whole perimeter.

- Find the perimeter of the shapes.



- The shape is made from 3 identical rectangles. Calculate the perimeter of the shape



- How many different rectilinear shapes can you draw with a perimeter of 24 cm? How many sides do they each have? What is the longest side?

