

Homework/Extension

Step 2: Equivalent Lengths – m and cm

National Curriculum Objectives:

Mathematics Year 3: (3M1a) [Compare lengths \(m/cm/mm\)](#)

Mathematics Year 3: (3M2a) [Measure lengths \(m/cm/mm\)](#)

Differentiation:

Questions 1, 4 and 7 (Varied Fluency)

Developing Identify which length is the odd one out. Lengths are multiples of 5cm.

Expected Identify which length is the odd one out. Lengths are multiples of 1cm. Includes some use of one half.

Greater Depth Identify which length is the odd one out. Lengths are multiples of 1cm and include the use of 0 in the tens column as a place holder. Includes use of one quarter and three quarters.

Questions 2, 5 and 8 (Varied Fluency)

Developing Find the error that has been made in a given measurement context. Lengths are multiples of 5cm.

Expected Find the error that has been made in a given measurement context. Lengths are multiples of 1cm. Includes some use of one half.

Greater Depth Find the error that has been made in a given measurement context. Lengths are multiples of 1cm. Includes use of three quarters.

Questions 3, 6 and 9 (Reasoning and Problem Solving)

Developing Calculate the possible lengths of two items of construction equipment using knowledge of equivalent lengths. Lengths are multiples of 5cm.

Expected Calculate the possible lengths of two items of sports equipment, using knowledge of equivalent lengths. Lengths are multiples of 1cm. Includes some use of one half.

Greater Depth Calculate the possible lengths of three classrooms using knowledge of equivalent lengths. Lengths are multiples of 1cm and include the use of 0 in the tens column as a place holder. Includes use of one quarter and three quarters.

More [Year 3 Length and Perimeter](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Equivalent Lengths – m and cm

1. Connect the equivalent lengths together to find out which length is the odd one out.

225cm

350cm

110cm

725cm

5m and 80cm

3m and 50cm

7m and 25cm

580cm

2m and 25cm



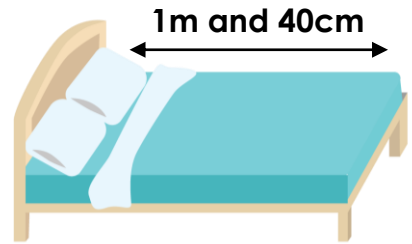
VF
HW/Ext

2. Susie has measured the length of her bed. It measures 1m 40cm. She uses this information to buy a suitable bed sheet.

She says,



The bed sheet cannot be longer than 140cm.



Not drawn to scale

What mistake has Susie made?



VF
HW/Ext

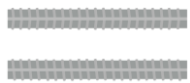
3. Before Gary begins to build the garden shed, he collects all the materials and equipment that he needs.

Planks of wood



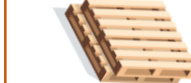
2.00cm

Steel rods



145cm

Pallets



1m and 20cm

Metal pipes



2m and 95cm

Not drawn to scale



Each plank of wood is shorter than the metal pipes. Each pallet is longer than each steel rod.

What could the possible lengths of the wooden planks and the pallets be?



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Equivalent Lengths – m and cm

4. Connect the equivalent lengths together to find out which length is the odd one out.

5m and 71cm

$3\frac{1}{2}$ m

950cm

572cm

9m and 50cm

449cm

5m and 72cm

350cm

$9\frac{1}{2}$ m

850cm

268cm

3m and 50cm

2m and 68cm

4m and 49cm

$8\frac{1}{2}$ m



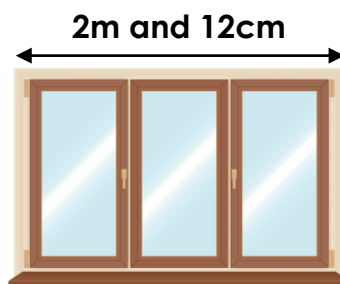
VF
HW/Ext

5. Barry has measured the length of his living room window. It measures 2m 12cm. He uses this information to buy a suitable set of blinds.

He says,



The blinds that I choose must have a length of $2\frac{1}{2}$ m.



Not drawn to scale

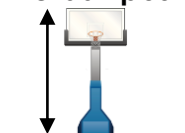
What mistake has Barry made?



VF
HW/Ext

6. As Mr Hoodlass cleans out the sports cupboard, he measures the lengths of each piece of equipment that he finds.

Netball post



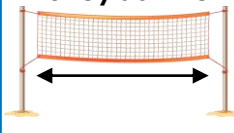
3m and 5cm

Cricket bat



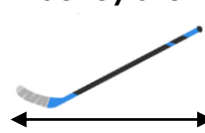
1 2cm

Volleyball net



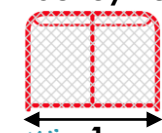
142cm

Hockey stick



82cm

Hockey net



$1\frac{1}{2}$ m

Not drawn to scale



The cricket bat is shorter than the netball post but longer than than the hockey stick. The hockey net is longer than the cricket bat.

What could the possible lengths of the cricket bat and the hockey net be?



RPS
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Equivalent Lengths – m and cm

7. Connect the equivalent lengths together to find out which length is the odd one out. Some lengths may have to be joined together before they are matched.

75cm	725cm	409cm	600cm	9cm
25cm	946cm	9m	$7\frac{1}{4}$ m	634cm
$6\frac{3}{4}$ m	700cm	4m	675cm	46cm



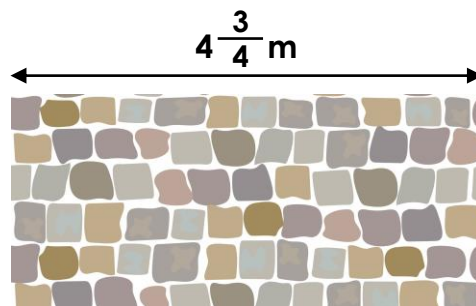
VF
HW/Ext

8. Riley has measured the length of his patio. It measures $4\frac{3}{4}$ m. He uses this information to buy a suitable size of artificial grass.

He says,



The artificial grass must have a length of at least 434m.



Not drawn to scale

What mistake has Riley made?



VF
HW/Ext

9. Before she orders some new furniture, Mrs Spencer measures the length of each classroom at Garden Hay Primary school.

 $4\frac{1}{4}$ m	 302 cm	 $\frac{1}{4}$ m	 4m and 9cm	 $4\frac{1}{2}$ m
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5X's classroom is longer than 4P's classroom but shorter than the length of 6S. 4P's classroom is not as long as 2E's classroom.

What could the possible lengths of classrooms 2E, 4P and 5X be?



RPS
HW/Ext

Homework/Extension

Equivalent Lengths – m and cm

Developing

1. 110cm is the odd one out as all the other lengths can be matched to at least one other equivalent length, as shown below.

225cm	=	2m and 25cm	=	725cm	=	7m and 25cm
350cm	=	3m and 50cm	=	5m and 80cm	=	580cm

2. Instead of the word 'cannot', Susie should have written the word 'must' because the sheet needs to be longer than 140cm so that the bed is fully covered.

3. Various answers, for example: wooden planks = 280cm and pallets = 2m and 20cm.

Expected

4. 5m 71cm is the odd one out as all the other lengths can be matched to at least one equivalent length, as shown below.

268cm	=	2m and 68cm		
449cm	=	4m and 49cm		
3m and 50cm	=	350cm	=	$3\frac{1}{2}$ m
5m and 72cm	=	572cm		
850cm	=	$8\frac{1}{2}$ m		
9m and 50cm	=	950cm	=	$9\frac{1}{2}$ m

5. If Barry buys some blinds with a length of $2\frac{1}{2}$ m which is equivalent to 250cm, these would be too large to fit the window as 250cm is greater than 2m and 12cm. Barry needs to buy some blinds that have a shorter length than 2m and 12cm.

6. Various answers, for example: the length of the cricket bat could be 122cm and the length of the hockey net could be $1\frac{1}{2}$ m.

Greater Depth

7. 634cm is the odd one out as all the other lengths can be matched to at least one equivalent length, as shown below.

725cm	=	700cm	=	25cm	=	$7\frac{1}{4}$ m
409cm	=	4m	=	9cm		
946cm	=	9m	=	46cm		
$6\frac{3}{4}$ m	=	675cm	=	600cm	=	75cm

8. Riley has used the incorrect units of measure as 434m is not equivalent to $4\frac{3}{4}$ m. Riley should have said, "The artificial grass must have a length of at least 434cm"

9. Various answers, for example: 2E = $4\frac{3}{4}$ m, 4P = $4\frac{1}{4}$ m and 5X = 4m and 39cm.