

Reasoning and Problem Solving

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 (Reasoning)

Developing Explain whether a given length is correct by converting from m to cm and vice versa. Lengths increasing in increments of 10cm. One step questions.

Expected Explain whether a given length is correct by converting from m to cm and vice versa. Lengths increasing in increments of 1cm. One step questions.

Greater Depth Explain whether a given length is correct by converting from m to cm and vice versa. Lengths increasing in increments of 1cm, including use of 0 as a place holder. Two step questions.

Questions 2, 5 and 8 (Reasoning)

Developing Comparing two lengths by converting from m to cm and vice versa. Lengths increasing in increments of 10cm. One step questions.

Expected Comparing two lengths by converting from m to cm and vice versa. Lengths increasing in increments of 1cm. One step questions.

Greater Depth Comparing two lengths by converting from m to cm and vice versa. Lengths increasing in increments of 1cm, including use of 0 as a place holder. Two step questions.

Questions 3, 6 and 9 (Problem Solving)

Developing Using digit cards, find 2 possible ways to complete a given statement. Lengths increasing in increments of 10cm.

Expected Using digit cards, find 3 possible ways to complete a given statement. Lengths increasing in increments of 1cm.

Greater Depth Using digit cards, find 3 possible ways to complete a given statement. Lengths increasing in increments of 1cm, including use of 0 as a place holder.

[More resources](#) which follow the same small steps as White Rose.

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

Equivalent Lengths-m and cm

Equivalent Lengths-m and cm

1a. Maisie's table is 1m 60cm long. Is her table cloth long enough to cover it?



My table cloth is 150cm long.

Convince me.



3 R

1b. Joe's garage is 490 cm long. Will his car fit in?



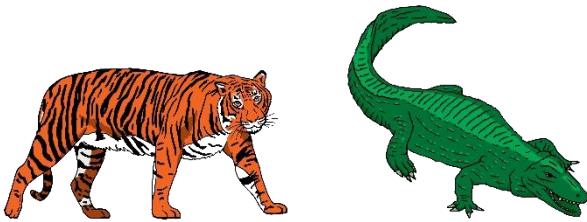
My car is 4m 50cm long.

Convince me.



3 R

2a. The crocodile is the longest. True or false? Explain your answer.



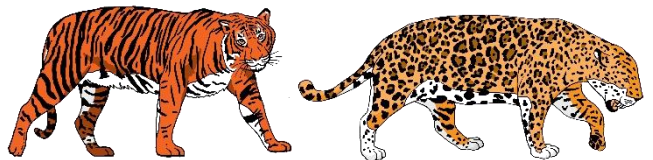
2m 50cm

430cm



3 R

2b. The tiger is the shortest. True or false? Explain your answer.



2m 50cm

190cm



3 R

3a. Using the digit cards, complete the statement in 2 different ways.



m 0 cm > 0 cm



3 PS

3b. Using the digit cards, complete the statement in 2 different ways.



m 0 cm < 0 cm



3 PS

Equivalent Lengths-m and cm

Equivalent Lengths-m and cm

4a. Tom's hallway is 3m 42cm long. Does he have enough carpet to cover it?



My piece of carpet is 349cm long.

Convince me.



3 R

4b. Milly's window is 476cm long. Are her curtains long enough?



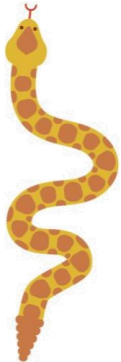
My curtains are 4m 67cm long.

Convince me.



3 R

5a. The spotty snake is the longest. True or false? Explain your answer.



4m 21cm



412cm



3 R

5b. The stripy snake is the shortest. True or false? Explain your answer.



3m 79cm



382cm



3 R

6a. Using the digit cards, complete the statement in 3 different ways.



m cm > cm



3 PS

6b. Using the digit cards, complete the statement in 3 different ways.



m cm < cm



3 PS

Equivalent Lengths-m and cm

Equivalent Lengths-m and cm

7a. Freddy's car is 450cm long. His caravan is 509cm long. Will they both fit on his drive?



My drive is 9m 90cm long.

Convince me.



3 R



3 R

8a. The bus is 5m longer than the lorry. True or false? Explain your answer.



14m 5cm

905cm

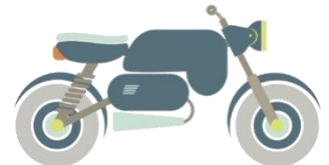


3 R



3 R

8b. The motorbike is 100cm longer than the bicycle. True or false? Explain your answer.



1m 85cm

195cm



3 R



3 R

9a. Using the digit cards, complete the statement in 3 different ways.



m cm > cm



3 PS

9b. Using the digit cards, complete the statement in 3 different ways.



m cm < cm



3 PS

Reasoning and Problem Solving Equivalent Lengths – m and cm

Developing

1a. No. the table is 1m 60cm long, which is equal to 160cm. The cloth is 150cm long which is shorter than 160cm.

2a. True. The crocodile is 430cm which is equal to 4m 30cm. 4m 30cm is longer than 2m 50cm.

3a. Various possible answers, including:
9m 80cm > 760cm.

Expected

4a. Yes he does. His hallway is 3m 42cm long, which is equal to 342cm. His piece of carpet is 349cm long which is longer.

5a. True. The spotty snake is the longest. It is 4m 21cm, which is equal to 421cm. 421cm is longer than 412cm.

6a. Various possible answers, including:
9m 87cm > 654cm.

Greater Depth

7a. Yes. The car and the caravan are 959cm altogether. This is equal to 9m 59cm, which is less than 9m 90cm.

8a. True. The bus is 14m 5cm long. The lorry is 905cm long, which is equal to 9m 5cm. 14m 5cm is 5m longer than 9m 5cm.

9a. Various possible answers, including:
9m 70cm > 608cm.

Reasoning and Problem Solving Equivalent Lengths – m and cm

Developing

1b. Yes. The garage is 490cm which is equal to 4m 90cm. 4m 90cm is longer than 4m 50cm.

2b. False. The tiger is 2m 50cm, which is equal to 250cm. 250cm is longer than 190cm.

3b. Various possible answers, including:
3m 20cm < 540cm.

Expected

4b. No. The window is 476cm long which is equal to 4m 76cm. The curtains are 4m 67cm which is shorter.

5b. False. The stripy snake is 382cm, which is equal to 3m 82cm. 3m 82cm is longer than 3m 79cm.

6b. Various possible answers, including:
3m 21cm < 654cm.

Greater Depth

7b. Yes. Grace jumped 2m 21cm altogether which is equal to 221cm.

8b. False. The bicycle is 1m 85cm which is equal to 185cm. The motorbike is 195cm, which is 10cm longer.

9b. Various possible answers, including:
3m 04cm < 605cm.