Length & Height

Master The Curriculum

2

Fluency & Reasoning Teaching Slides

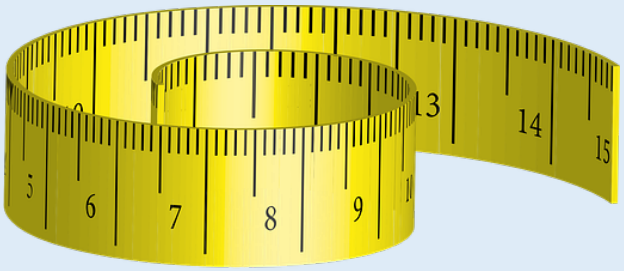
Measure Length - cm

2

Fluency & Reasoning Teaching Slides

Measure Length - cm

What do you know about these objects?



?

What do you notice about the side lengths?

Measure Length - cm

What does this mean?

centimetre

cm

?

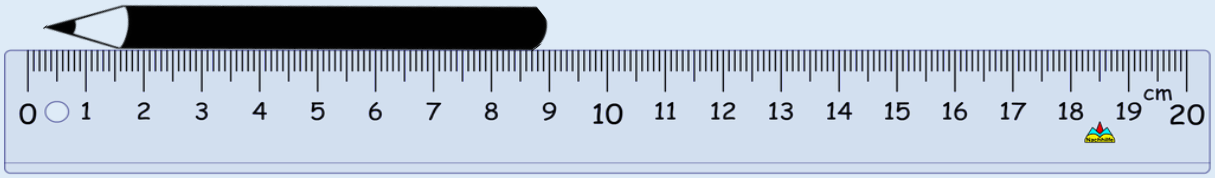
Can you show how long a centimetre is?

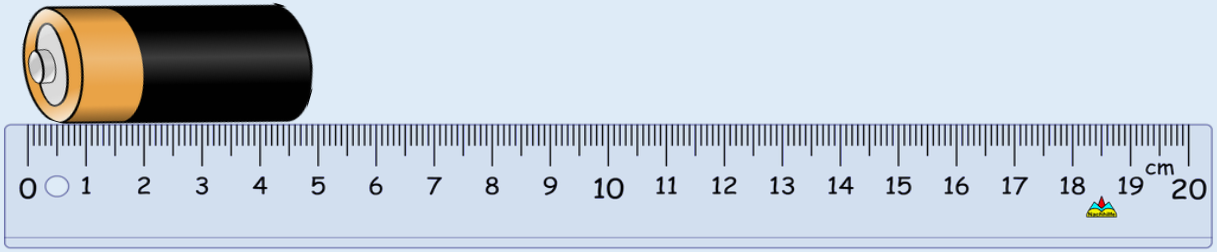
Activity 1

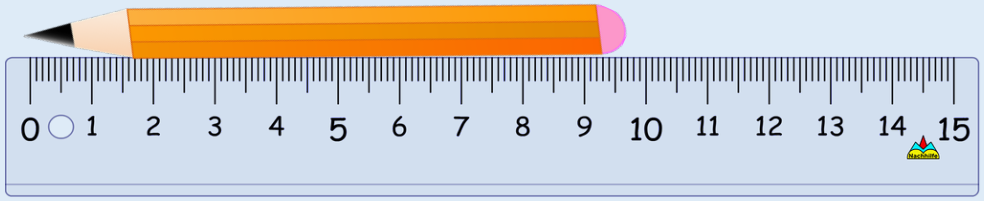
Measure Length - cm

How long are these objects to the nearest cm?

(not to scale)





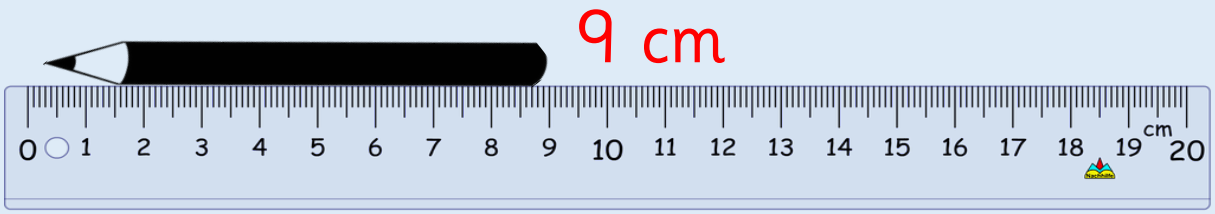


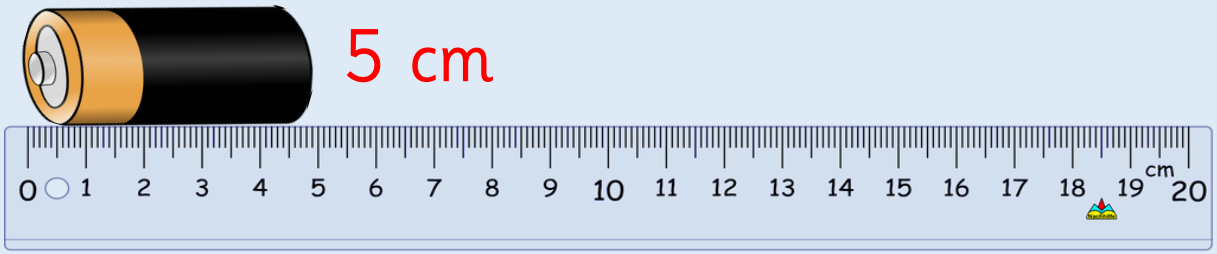
Activity 1

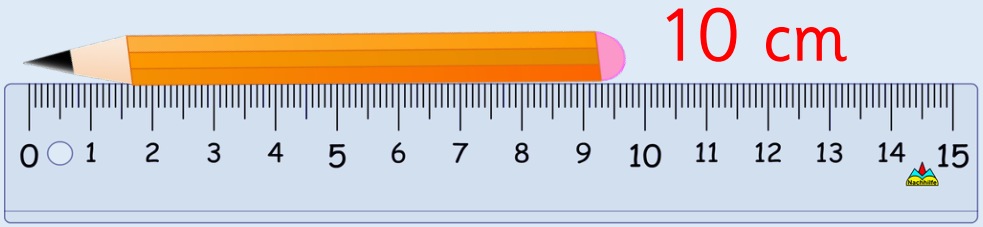
Measure Length - cm

How long are these objects to the nearest cm?

(not to scale)





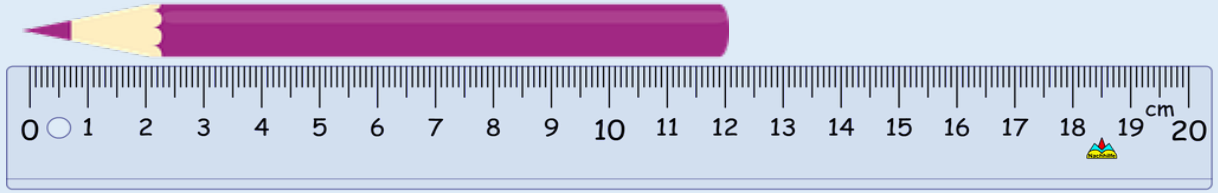


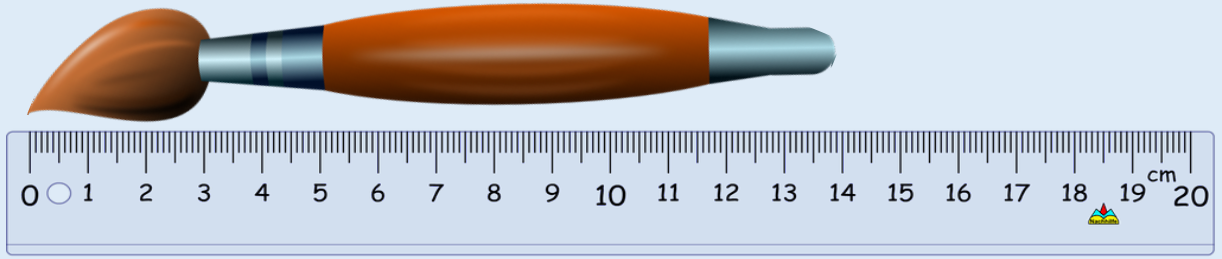
Activity 1

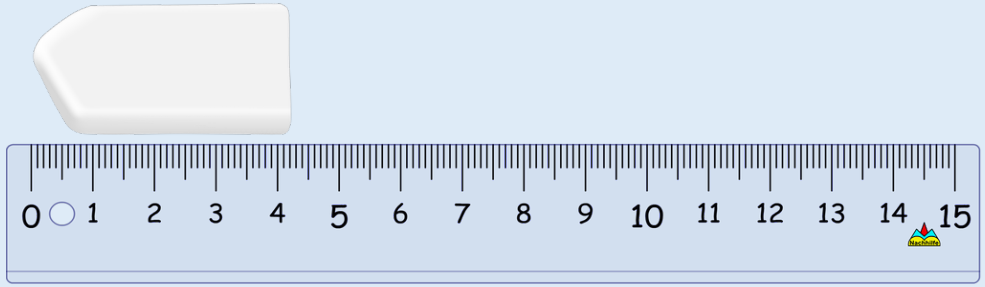
Measure Length - cm

How long are these objects to the nearest cm?

(not to scale)





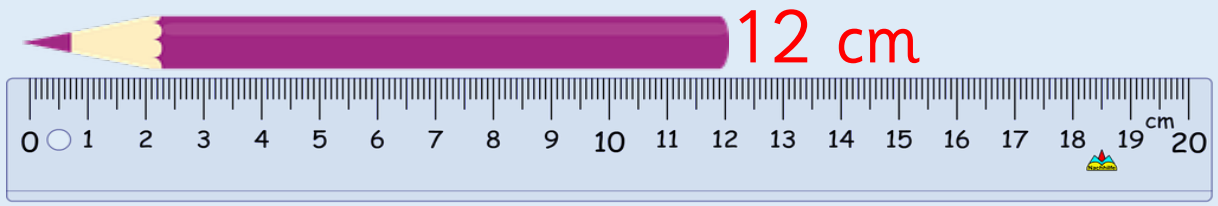


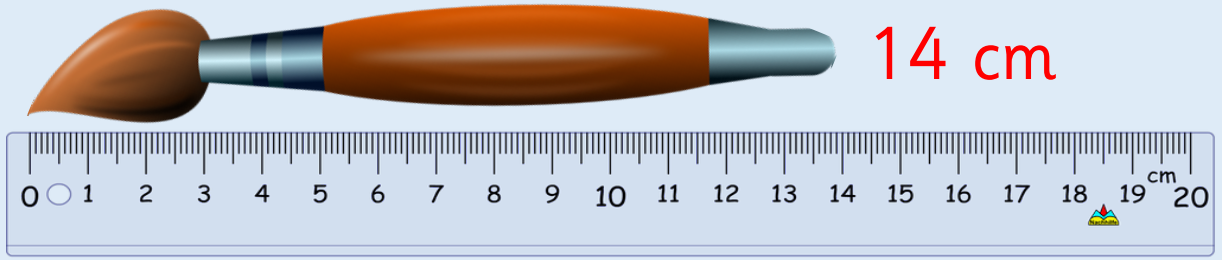
Activity 1

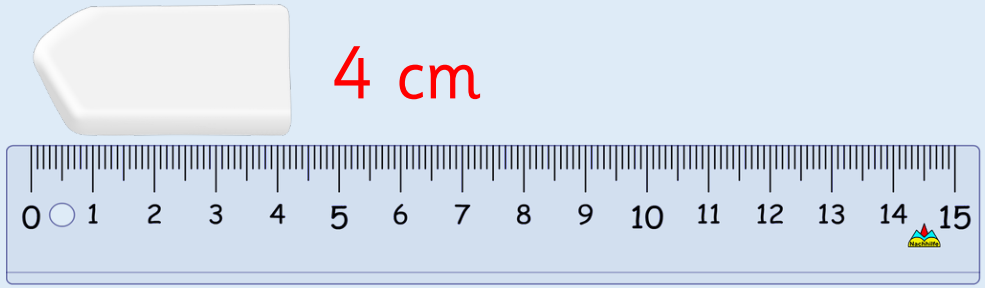
Measure Length - cm

How long are these objects to the nearest cm?

(not to scale)





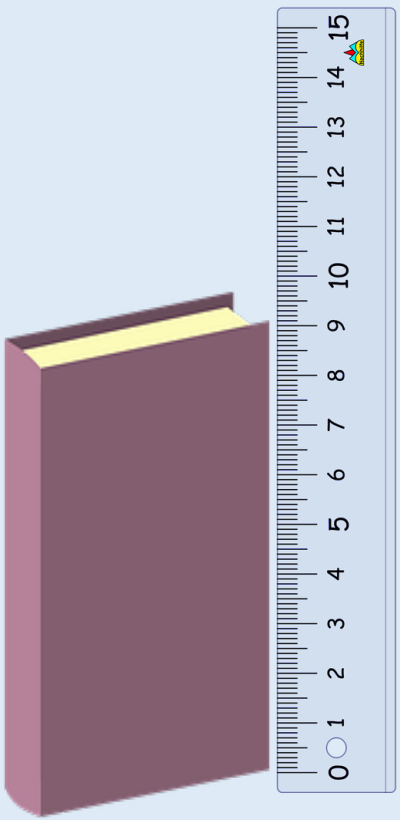


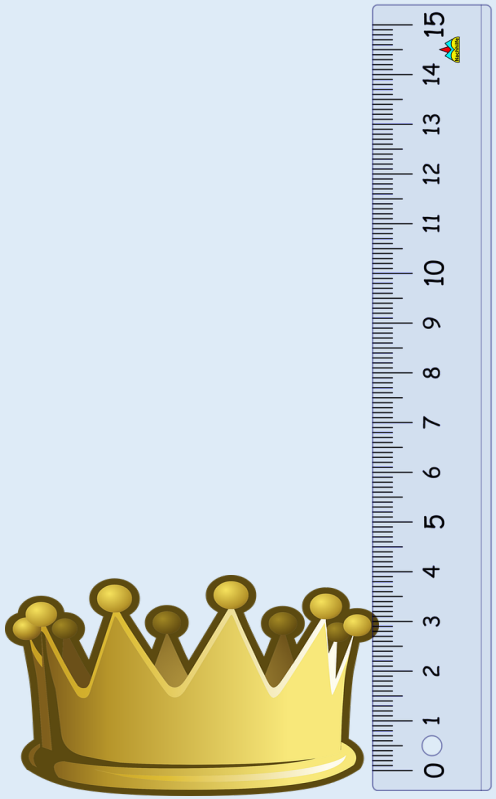
Activity 2

Measure Length - cm

How tall are these objects to the nearest cm?

(not to scale)





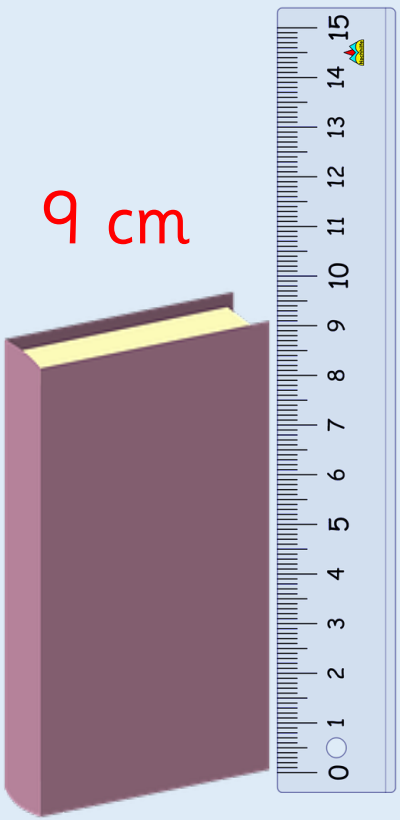
Activity 2

Measure Length - cm

How tall are these objects to the nearest cm?

(not to scale)

9 cm



4 cm

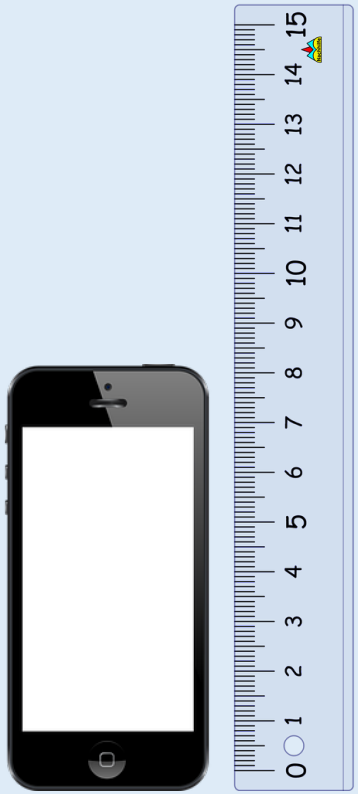
6 cm

Activity 2

Measure Length - cm

How tall are these objects to the nearest cm?

(not to scale)



Activity 2

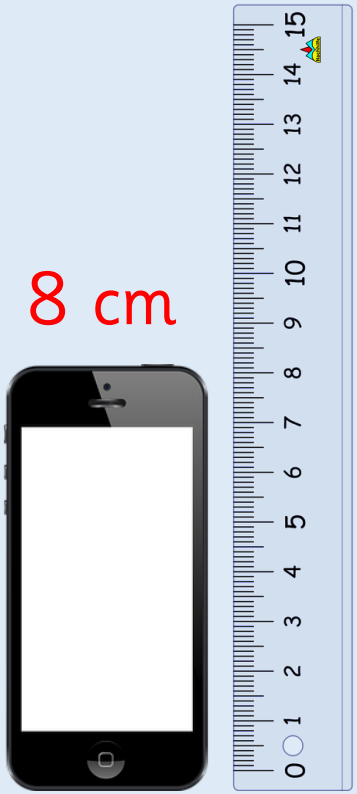
Measure Length - cm

How tall are these objects to the nearest cm?

(not to scale)

11 cm

8 cm

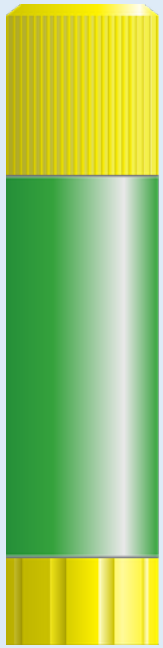


5 cm

Activity 3

Measure Length - cm

Find some objects to measure to the nearest centimetre.
Measure the length and height of your objects.



Activity 4 Measure Length - cm

Now it's time to draw some lines using your ruler.

Remember to start from zero!

1. 6 cm long
2. 3 cm long
3. 9 cm long
4. 2cm long
5. 14cm long
6. Longer than 2 cm but shorter that 6 cm.
7. Longer than 5cm but shorter than 7cm.
8. Longer than 6 cm but shorter than 10 cm.

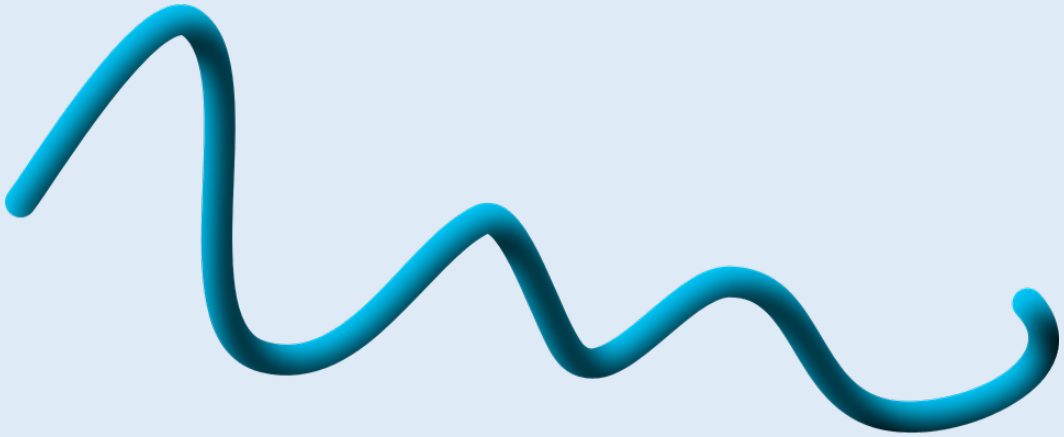
?

Where should you start from on your ruler?

Reasoning 1

Measure Length - cm

How long is this piece of string?
How could you find out?

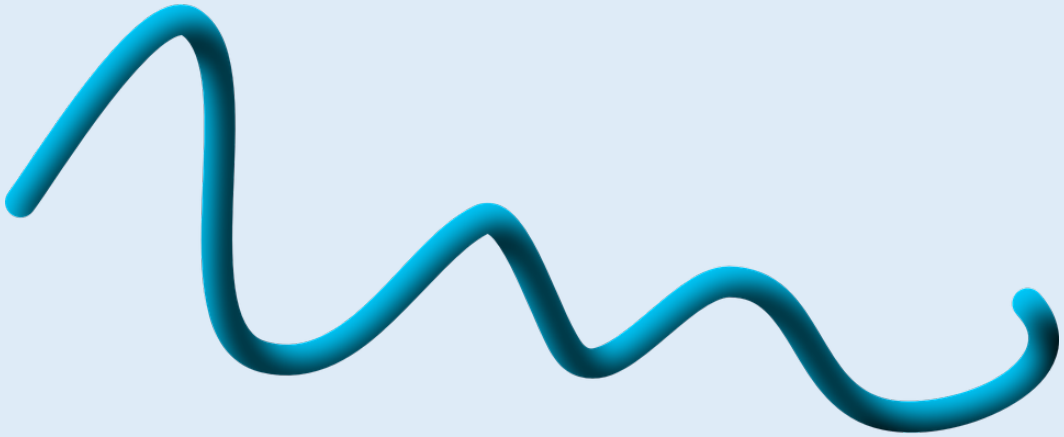


Does the length change if you change the orientation?

Reasoning 1

Measure Length - cm

How long is this piece of string?
How could you find out?

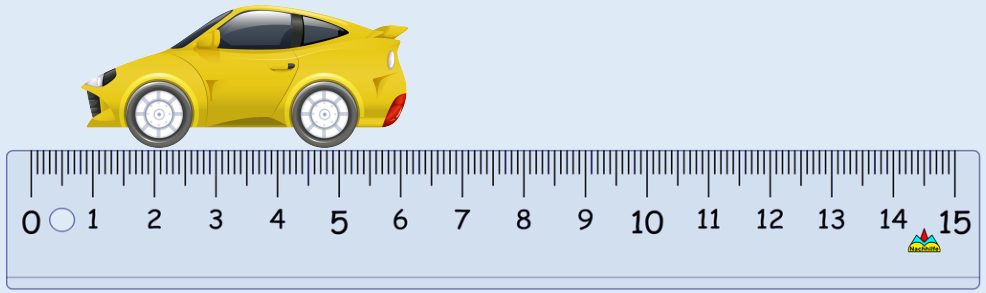


The length will not change if you change the orientation so it will be easier to measure if you put it in a straight line.

Reasoning 2

Measure Length - cm

Zach has used the ruler to measure the length of the car.

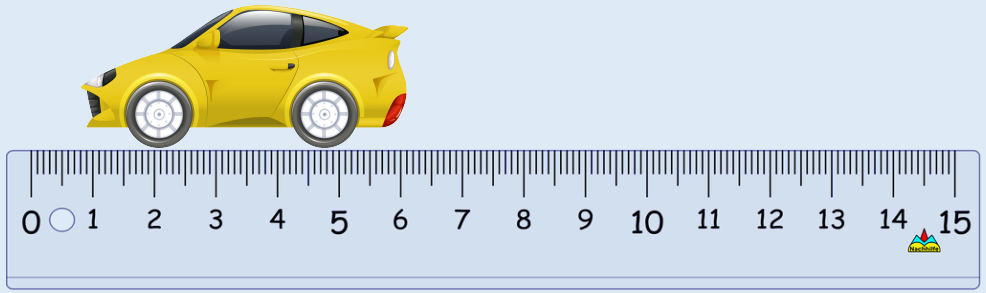


Zach says the car is 6 centimetres long.
Do you agree? Explain your answer.

Reasoning 2

Measure Length - cm

Zach has used the ruler to measure the length of the car.



Zach is incorrect because he has not lined the car up with the 0 marker. If he had measured from 0 he would see that the car is 5cm long.

Discuss

Measure Length - cm

What is the length of….?

How can the numbers on the ruler help us?

How do you know you have drawn a line that is 5cm long?

How can you check?

Why is it important to start measuring from 0 on the ruler?

Measure Length - m

2

Fluency & Reasoning Teaching Slides

Measure Length - m

What does this mean?

metre

m

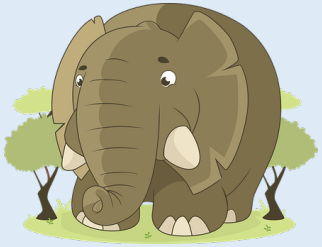
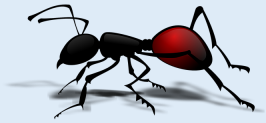
Can you show how long a metre is?
Is it longer or shorter than a centimetre?

Activity 1

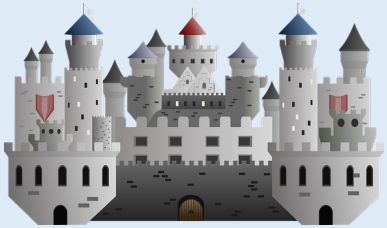
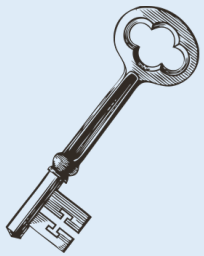
Measure Length - m

Look at the objects.
Discuss which ones you would measure in centimetres and which ones you would measure in metres.






Activity 1

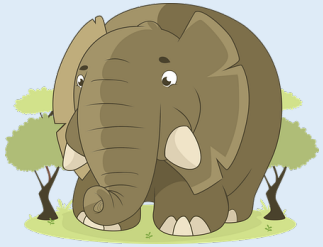
Measure Length - m

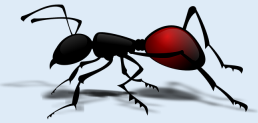
Look at the objects.
Discuss which ones you would measure in centimetres and which ones you would measure in metres.

cm 

m 

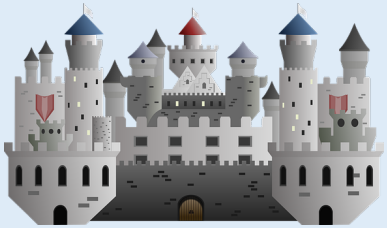
cm 

m 

cm 

m 

cm 

m 

cm 

cm 

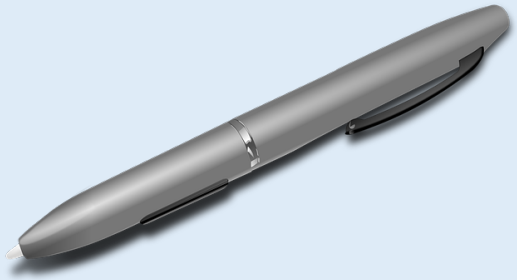
m 

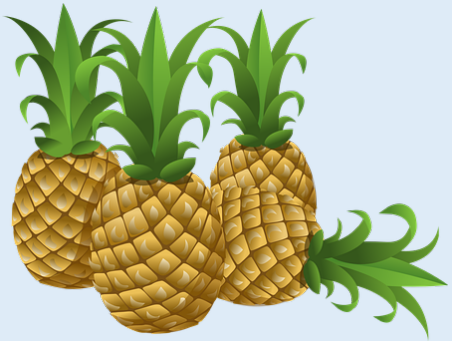
 cm

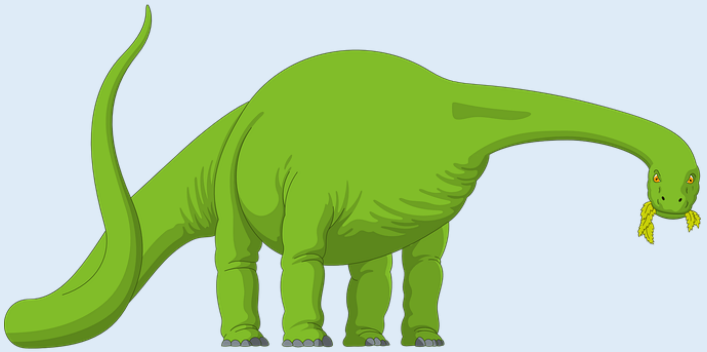
Activity 1

Measure Length - m

Look at the objects.
Discuss which ones you would measure in centimetres and which ones you would measure in metres.







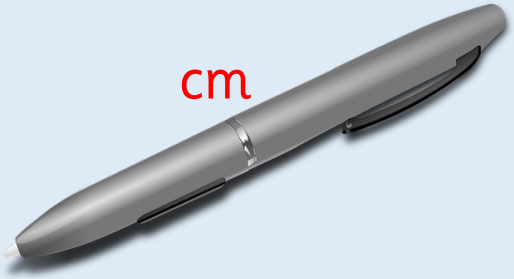
Activity 1

Measure Length - m

Look at the objects.
Discuss which ones you would measure in centimetres and which ones you would measure in metres.

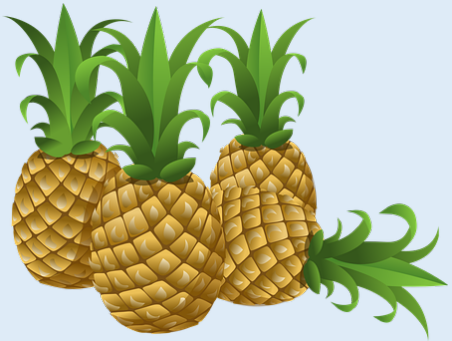
cm

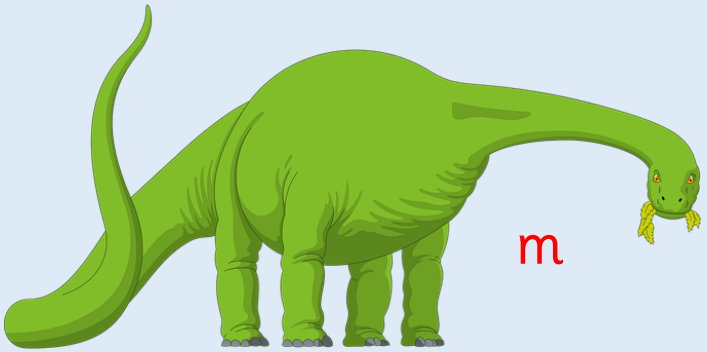
cm



cm

cm





m

Activity 2

Measure Length - m

Use a metre stick to measure objects in your classroom and place them into the groups.

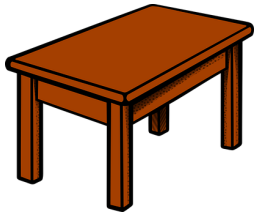
Longer than a metre

Shorter than a metre

Activity 2 Measure Length - m

Use a metre stick to measure objects in your classroom and place them into the groups.

Longer than a metre



Shorter than a metre

Activity 3

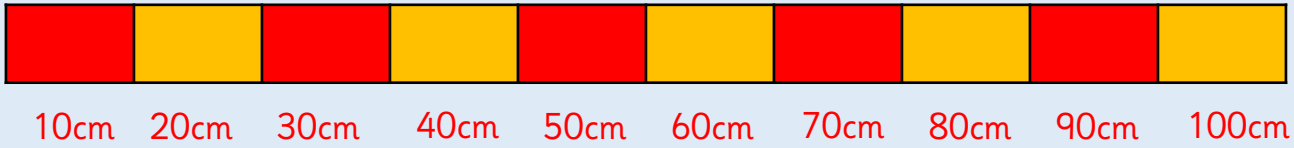
Measure Length - m

Use a metre stick to count up in 10 cm blocks.
What do you notice about 100 cm?

Activity 3

Measure Length - m

Use a metre stick to count up in 10 cm blocks.
What do you notice about 100 cm?



100 cm is equal to 1 metre.

Activity 4

Measure Length - m

Measure the length of the school hall.
Record the length in metres and centimetres, e.g. 15 metres and 13 centimetres.

Activity 4 Measure Length - m

Measure the length of the school hall.
Record the length in metres and centimetres, e.g. 15 metres and 13 centimetres.

Answers will depend on the measurement of the school hall of each student.

Reasoning 1

Measure Length - m

Usain Bolt can run 100m in 8.58 seconds (just under 10 seconds).

How far do you think you can run in 10 seconds?
Do you think it will be more or less than 100m?

Measure how far you and your friends can run in 10 seconds. Record your answers in metres and centimetres.

Reasoning 1

Measure Length - m

Usain Bolt can run 100m in 8.58 seconds (just under 10 seconds).

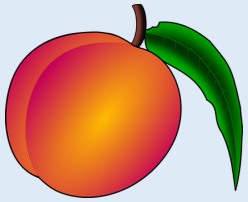
How far do you think you can run in 10 seconds?
Do you think it will be more or less than 100m?

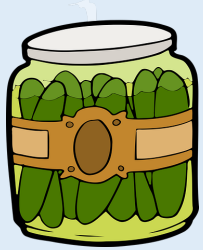
Children will have a variety of answers.
They could measure using different equipment including metre sticks and trundle wheels.

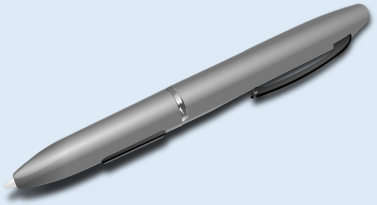
Reasoning 2

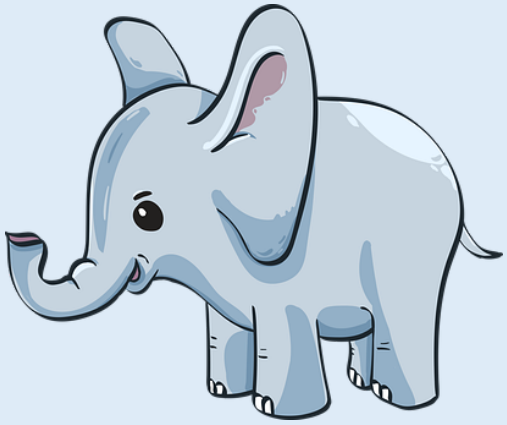
Measure Length - m

Circle the objects that you would measure in metres.
Tick the objects that you would measure in centimetres.





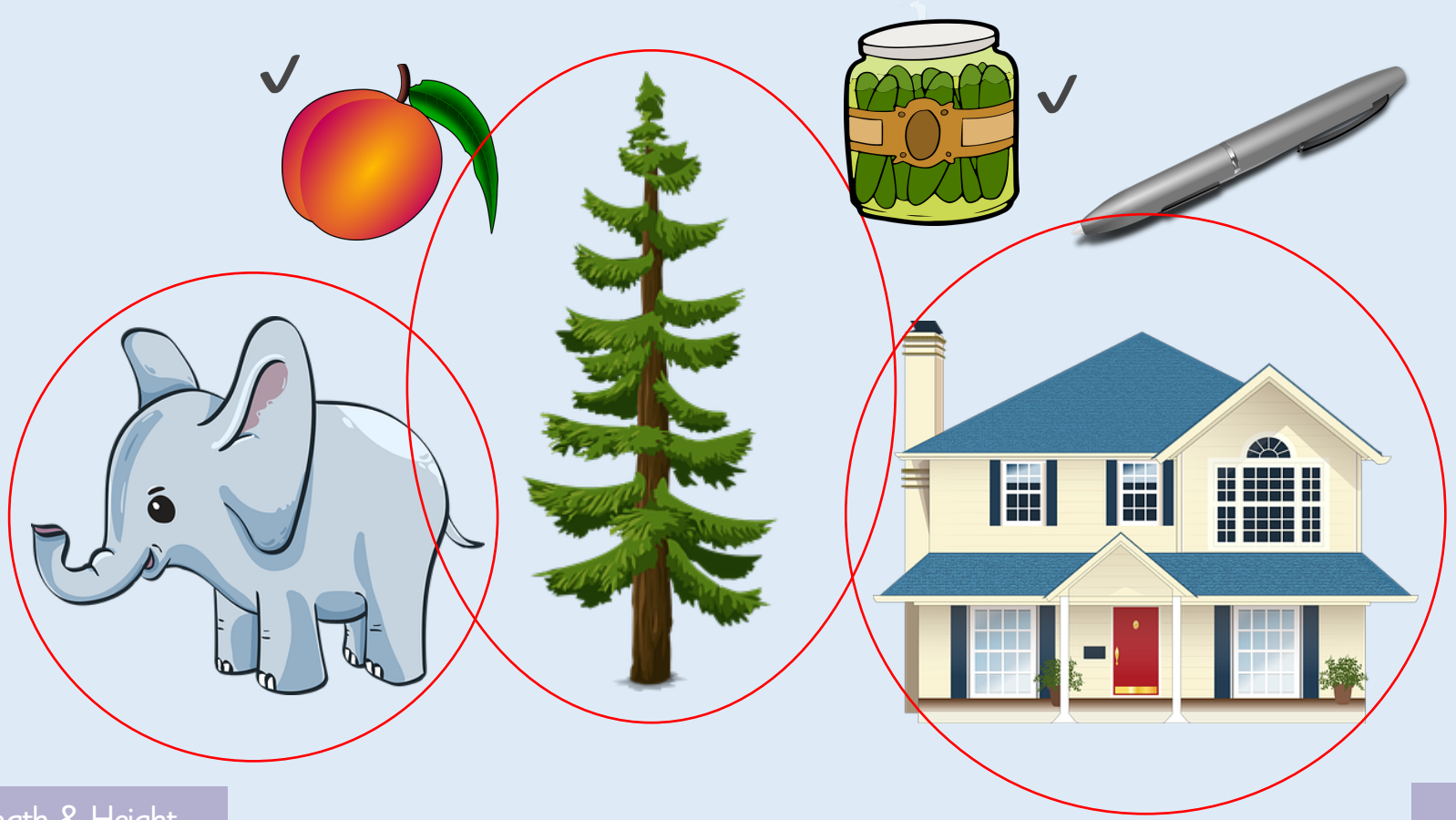




Reasoning 2

Measure Length - m

Circle the objects that you would measure in metres.
Tick the objects that you would measure in centimetres.



Reasoning 3

Measure Length - m

Tia has a metre stick.
She wants to measure the length of her classroom.

I can't measure the length of my classroom because my metre stick isn't long enough.

Explain to Tia how she could measure the length of her classroom.

Reasoning 3

Measure Length - m

Tia has a metre stick.
She wants to measure the length of her classroom.

I can't measure the length of my classroom because my metre stick isn't long enough.

Tia can measure the length of the classroom by putting a marker at the end of the metre stick and then starting again at that point, moving her metre stick as she measures.

Discuss

Measure Length - m

When would it be appropriate to use metres?

Why is more efficient to use metres instead of centimetres for longer objects/distances?

What equipment would you use to measure longer objects/distances?

Comparing Length

2

Fluency & Reasoning Teaching Slides

Activity 1 Comparing Length

Compare the lengths.
Complete the sentence by using the words;
longer than, shorter than, or the same as.

13 cm is _____ 31 cm.

forty m is _____ 14 m.

34 m is _____ thirty- four m.

100 cm is _____ ten cm.

56 centimetres is _____ 65 cm.

Activity 1 Comparing Length

Compare the lengths.
Complete the sentence by using the words;
longer than, shorter than, or the same as.

13 cm is shorter than 31 cm.

forty m is longer than 14 m.

34 m is the same as thirty- four m.

100 cm is longer than ten cm.

56 centimetres is shorter than 65 cm.

Activity 1 Comparing Length

Compare the lengths.
Complete the sentence by using the words;
longer than, shorter than, or the same as.

15 cm is _____ 60 cm.

Sixty metres is _____ 60 m.

96 m is _____ 69 m.

80 cm is _____ 80 m..

Activity 1 Comparing Length

Compare the lengths.
Complete the sentence by using the words;
longer than, shorter than, or the same as.

15 cm is _____shorter than_____ 60 cm.

Sixty metres is _____the same as_____ 60 m.

96 m is _____longer than_____ 69 m.

80 cm is _____shorter than_____ 80 m.

Activity 2 Comparing Length

Use <, > or = to complete the statements.

7 metres ☐ 17 metres

18 cm ☐ 18 m

32 cm ☐ 32 centimetres

Activity 2 Comparing Length

Use <, > or = to complete the statements.

7 metres	>	17 metres
18 cm	<	18 m
32 cm	=	32 centimetres

Activity 2 Comparing Length

Use <, > or = to complete the statements.

45 cm ☐ 45 m

43 m ☐ 34 m

12 centimetres ☐ twelve cm

Activity 2 Comparing Length

Use <, > or = to complete the statements.

45 cm	<	45 m
43 m	>	34 m
12 centimetres	=	twelve cm

Activity 3 Comparing Length

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 friend's height.

Reasoning 1 Comparing Length

Compare the measurements using <, > or =

65cm + 10 cm	○	65cm – 10 cm
52 m + 6 m	○	52 m + 7 m
7 cm – 6cm	○	8 cm – 7 cm
90 m – 5 m	○	80 m + 5 m

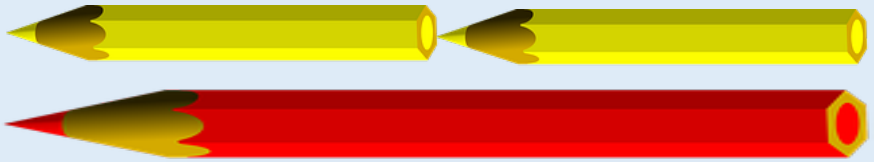
Reasoning 1 Comparing Length

Compare the measurements using <, > or =

65cm + 10 cm 75cm	>	65cm – 10 cm 55cm
52 m + 6 m 58 m	<	52 m + 7 m 59 m
7 cm – 6cm 1 cm	=	8 cm – 7 cm 1 cm
90 m – 5 m 85 m	=	80 m + 5 m 85 m

Reasoning 2 Comparing Length

A red pencil is twice as long as a yellow pencil.

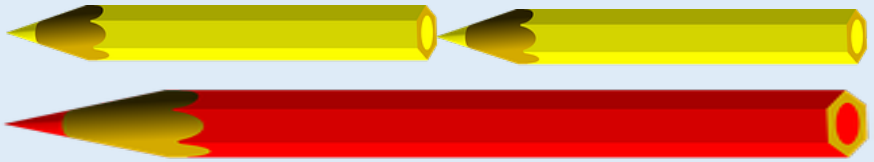


Using this, complete the statements using longer than, shorter than or equal to.

3 red pencils are _____ 2 yellow pencils.
2 red pencils are _____ 5 yellow pencils.
4 red pencils are _____ 8 yellow pencils.

Reasoning 2 Comparing Length

A red pencil is twice as long as a yellow pencil.



Using this, complete the statements using longer than, shorter than or equal to.

3 red pencils are longer than 2 yellow pencils.
2 red pencils are shorter than 5 yellow pencils.
4 red pencils are equal to 8 yellow pencils.

Discuss

Length - m

Which is longer: 10 centimetres or 10 metres?

Which symbols can we use to compare lengths?

What is the difference between using taller than and longer than?

When would we use taller than instead of longer than?

Order Lengths

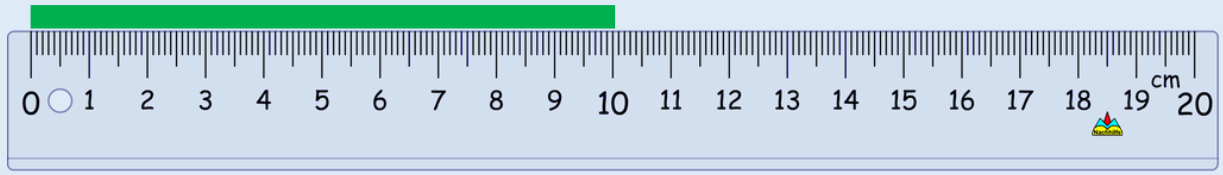
2

Fluency & Reasoning Teaching Slides

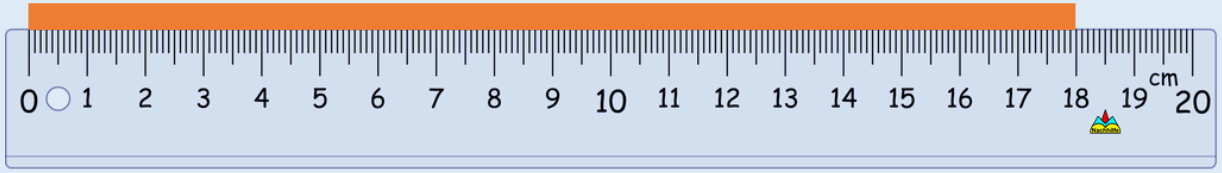
Activity 1 Order Lengths

Esin, Zach and Rosie have a piece of ribbon.

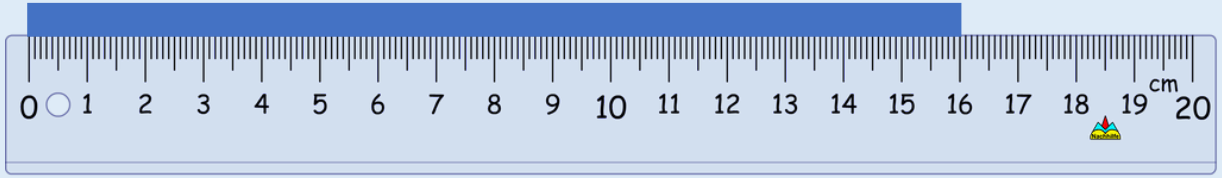
Esin



Zach

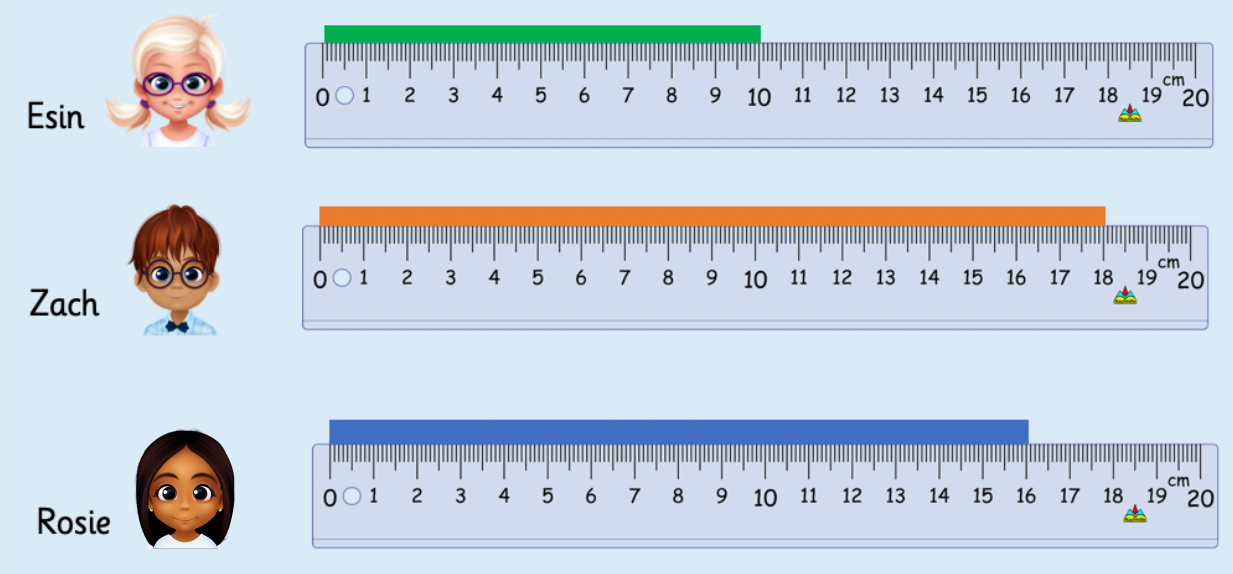


Rosie



Activity 1 Order Lengths

Esin, Zach and Rosie have a piece of ribbon.



_____ has the longest ribbon.

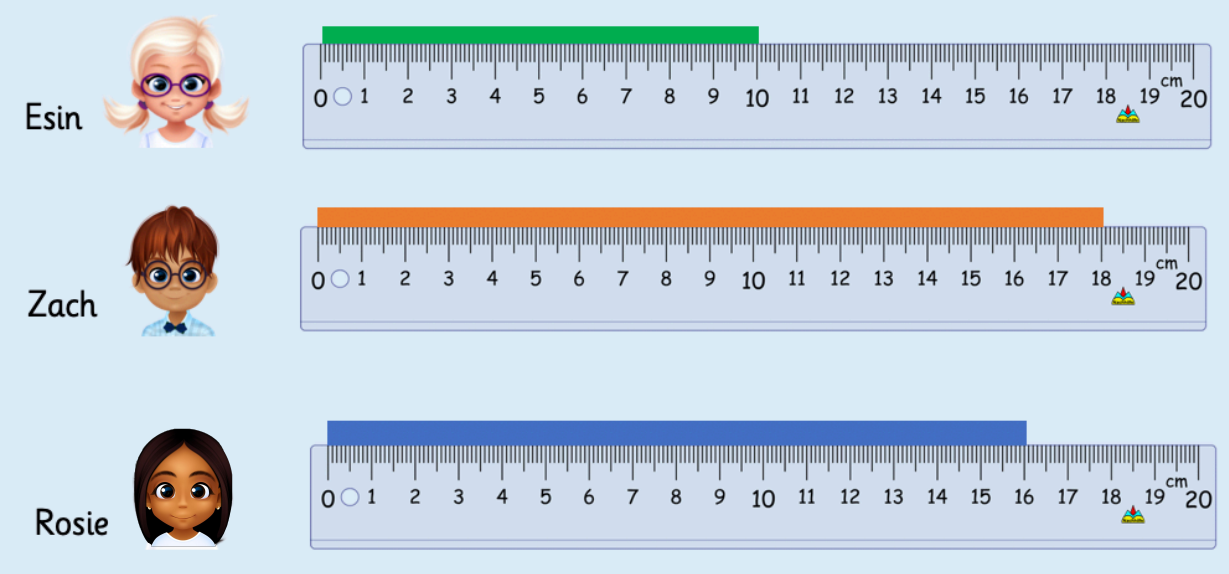
_____ has the shortest ribbon.

_____'s ribbon is shorter than _____'s.

_____'s ribbon is longer than _____'s.

Activity 1 Order Lengths

Esin, Zach and Rosie have a piece of ribbon.



Zach has the longest ribbon.

Esin has the shortest ribbon.

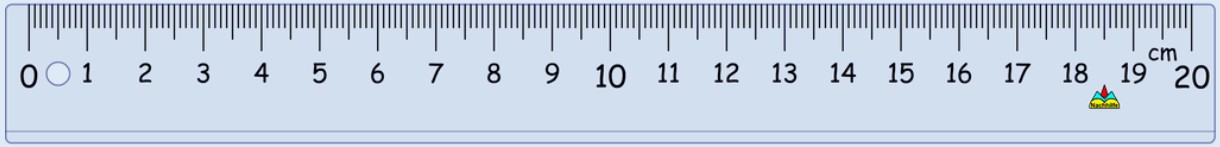
Esin 's ribbon is shorter than Rosie/Zach 's.

Zach 's ribbon is longer than Rosie/Esin's.

Activity 2 Order Lengths

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.



Reasoning 1 Order Lengths

Four children are measuring their heights. Leanna is taller than Rosie, but not as tall as Malachi. Zach is taller than Malachi.


Malachi


Zach


Leanna


Rosie

Write down their names in order of their heights, starting with the shortest.

Reasoning 1 Order Lengths

Four children are measuring their heights. Leanna is taller than Rosie, but not as tall as Malachi. Zach is taller than Malachi.

From shortest to tallest:
Rosie, Leanna, Malachi, Zach

Reasoning 2 Order Lengths

Measure the height of people in your class and measure the length of their shoes.

Tia

The taller you are, the longer your shoes are.

Is Tia correct?

Reasoning 2 Order Lengths

Measure the height of people in your class and measure the length of their shoes.

The taller you are, the longer your shoes are.

Tia

Children will find different results depending on their class.

Discuss

Order Lengths

How is ordering lengths similar to ordering numbers on a number line?

Can we use a number line to help us?

Can we estimate which object is the longest before measuring?

Four operations with length

2

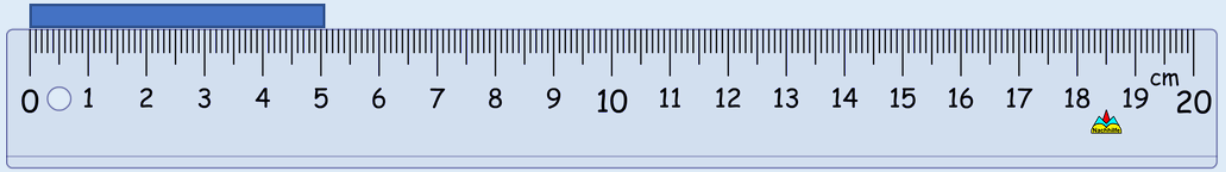
Fluency & Reasoning Teaching Slides

Activity 1

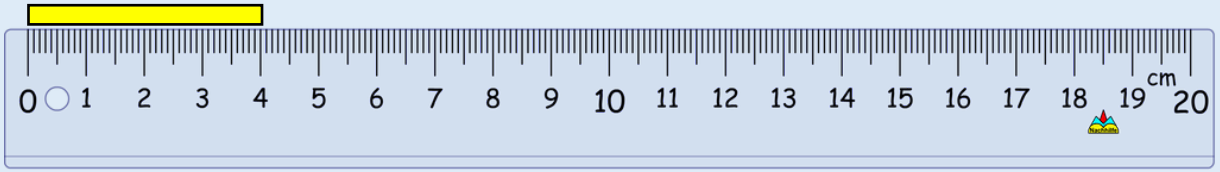
Four operations with length

Tia, Zach and Malachi measure strips of paper.

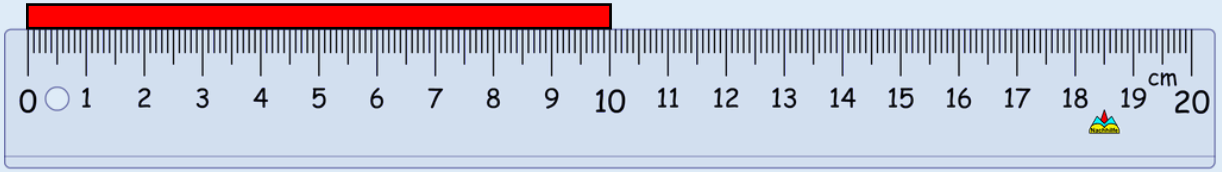
Tia



Zach



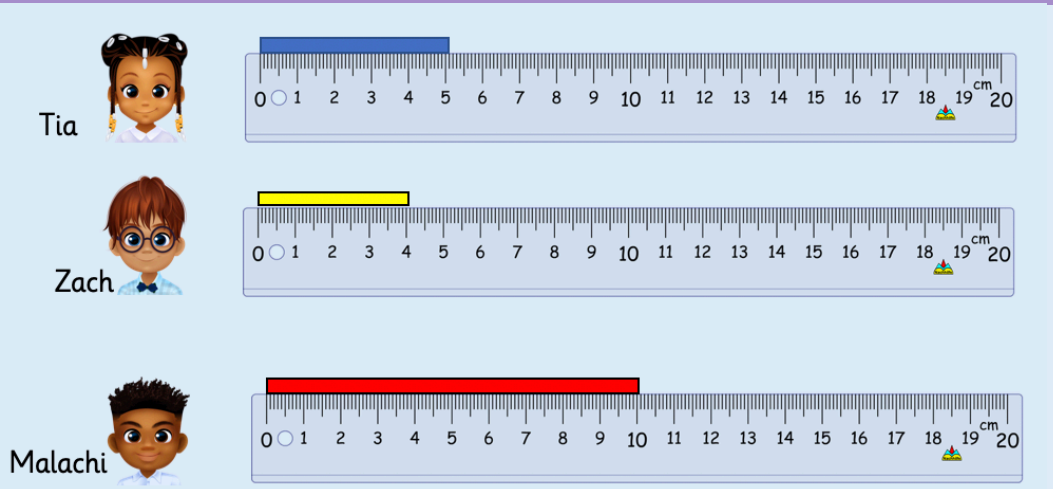
Malachi



Activity 1

Four operations with length

Tia, Zach and Malachi measure strips of paper.



- How much shorter is Zach's paper than Tia's?

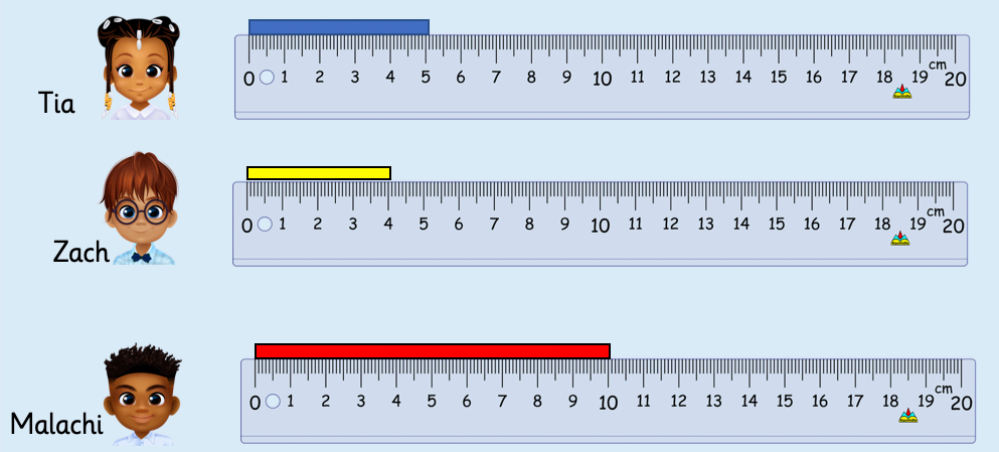
- How much longer is Malachi's paper than Zach's?

- Malachi cuts off 2 cm of his paper.
  What length of paper does he have now?

- Zach cuts 3 more pieces of paper the same length.
  What is his total length of all 4 pieces?

Activity 1 Four operations with length

Tia, Zach and Malachi measure strips of paper.



- How much shorter is Zach's paper than Tia's?

1 cm

- How much longer is Malachi's paper than Zach's?

6 cm

- Malachi cuts off 2 cm of his paper.
  What length of paper does he have now?

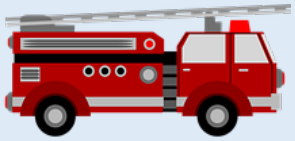
8 cm

- Zach cuts 3 more pieces of paper the same length.
  What is his total length of all 4 pieces?

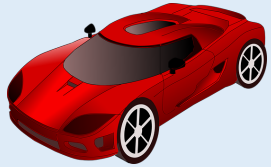
16 cm

Activity 1 Four operations with length

Leanna is playing with her toys.
The car is 14cm long.
The fire engine is 11cm longer.
How long is the fire engine?



Leanna lines them up.
What is the total length of the car and fire engine?

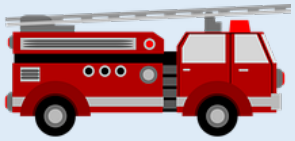


The toy car is double the length of a toy plane.
How long is the plane?

Activity 1 Four operations with length

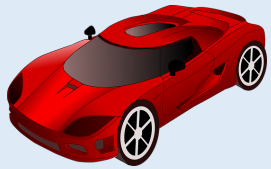
Leanna is playing with her toys.
The car is 14cm long.
The fire engine is 11cm longer.
How long is the fire engine?

25 cm



Leanna lines them up.
What is the total length of the car and fire engine?

39 cm



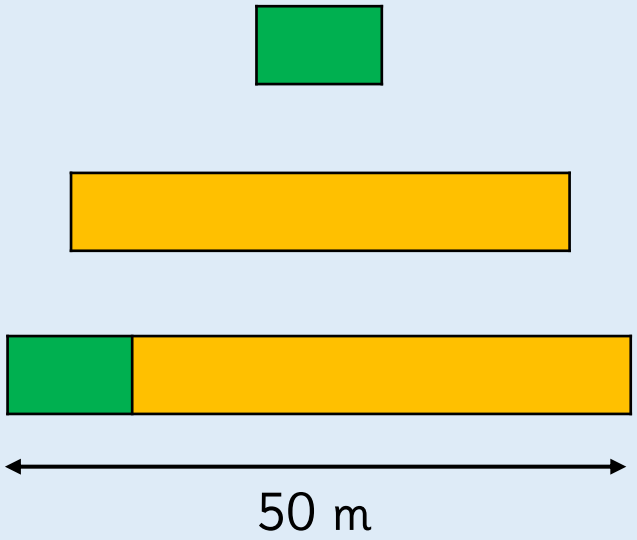
The toy car is double the length of a toy plane.
How long is the plane?

7 cm

Reasoning 1

Four operations with length

Here is a strip of green paper. A yellow strip is four times longer than the green strip.
The strips are joined end to end.

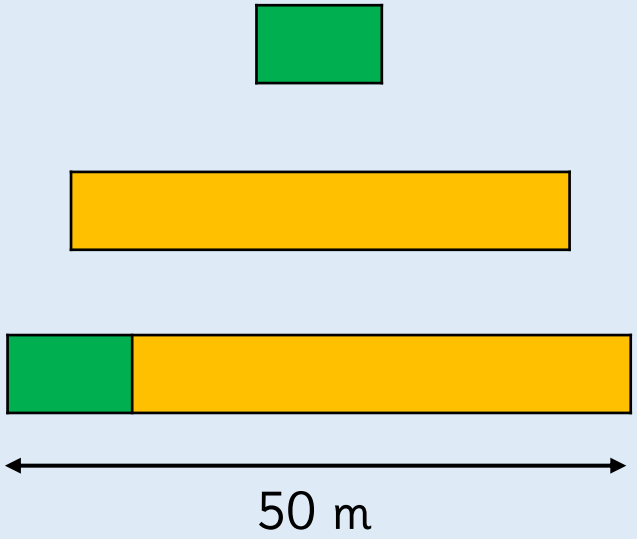


How long is the green strip?
How long is the yellow strip?

Reasoning 1

Four operations with length

Here is a strip of green paper. A yellow strip is four times longer than the green strip.
The strips are joined end to end.



The green strip is 10m long and a yellow strip is 40m long.

Reasoning 2

Four operations with length

There are 3 bears in a box.
The grey bear is 15cm taller than the green bear.
The green bear is 4cm shorter than the brown bear.
The brown bear is 39cm tall.

How tall are the grey and green bears?
How much taller is the grey bear than the brown bear?

Reasoning 2

Four operations with length

There are 3 bears in a box.
The grey bear is 15cm taller than the green bear.
The green bear is 4cm shorter than the brown bear.
The brown bear is 39cm tall.

How tall are the grey and green bears?
How much taller is the grey bear than the brown bear?

The grey bear is 50cm tall.
The green bear is 35cm tall.
The grey bear is 11cm taller than the brown bear.

Discuss

Four operations with length

Can you draw a bar model to help to decide which operations to use?

What are the key words in the question?

Can you ask and answer any different questions using the objects and information given?