Measurement

Master The Curriculum

2

Fluency Teaching Slides

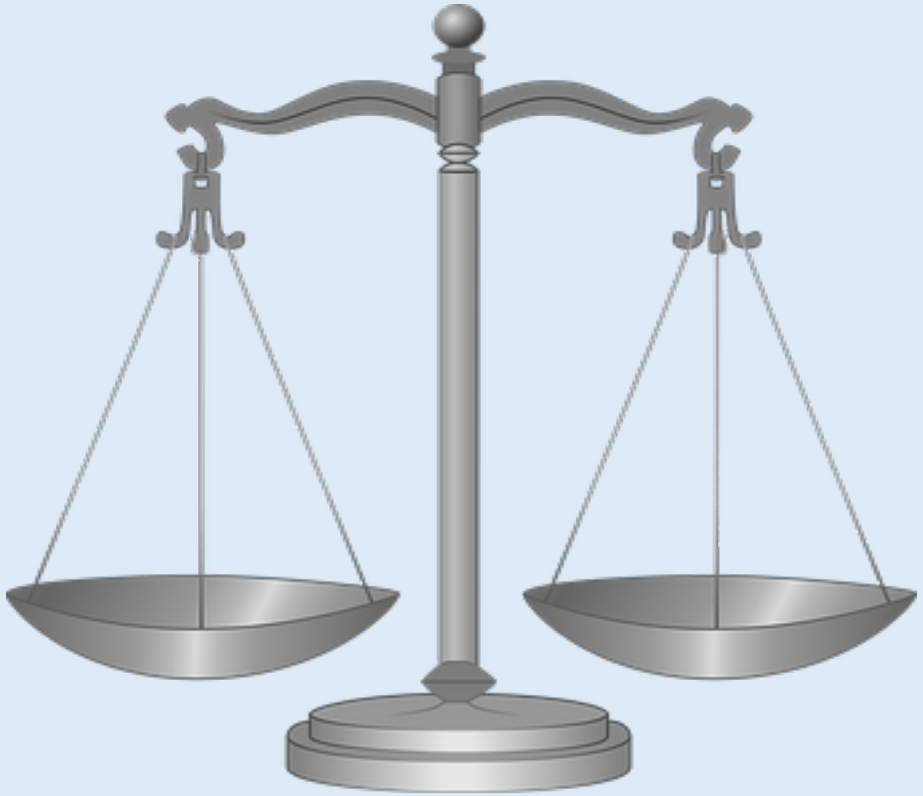
Compare Mass

2

Fluency Teaching Slides

Activity 1 Compare Mass

What are these?
What are they used for?



Activity 2 Compare Mass

If a balance scale is down, what does this mean?

?

Look at the scale, which side is lower?
What does this tell us about the objects?

Activity 3 Compare Mass

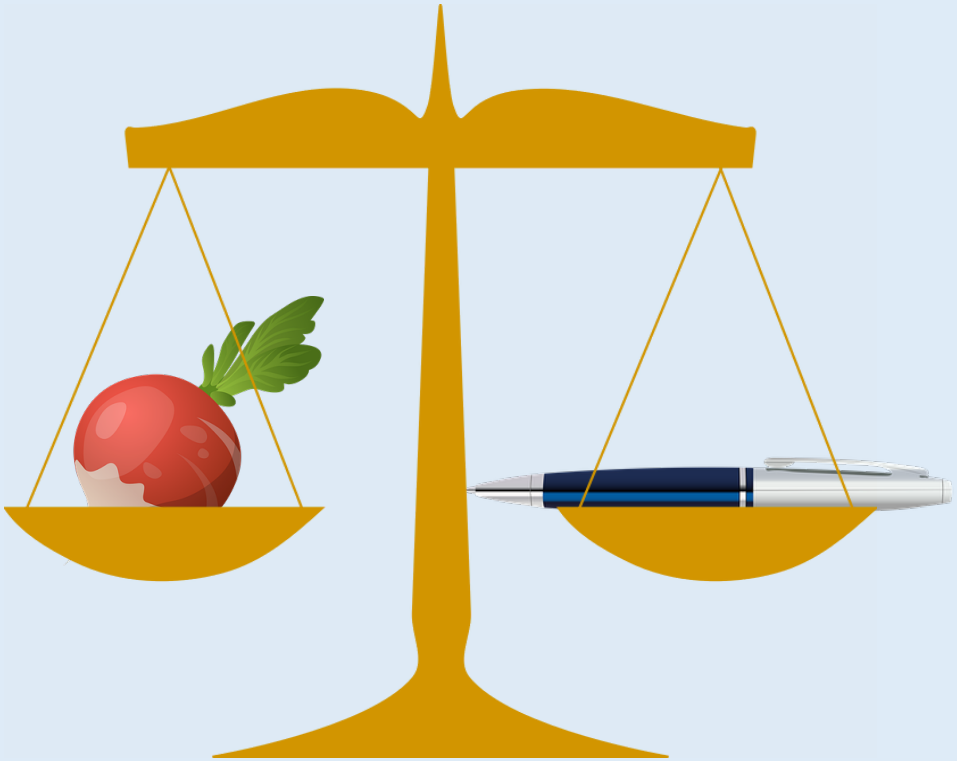
If a balance scale is up, what does this mean?

?

Which object is heavier? Which object is lighter?

Activity 4 Compare Mass

If a balance scale is level, what does this mean?



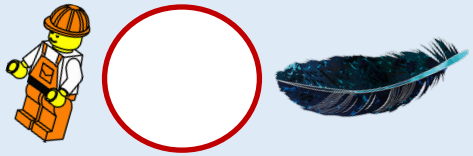
?

Which object is heavier? Which object is lighter?

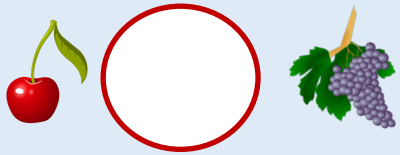
Activity 5 Compare Mass

Look at the pictures below.
Use the words more and less and the comparison symbols
> or < to describe the mass.

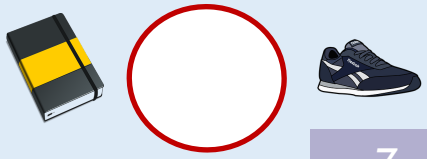
The lego man weighs _____ than the feather.



The cherry weighs _____ than the grapes.



The book weighs _____ than the trainer.



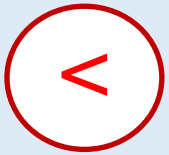
Activity 5 Compare Mass

Look at the pictures below.
Use the words more and less and the comparison symbols
> or < to describe the mass.

The lego man weighs more than than the feather.



The cherry weighs less than than the grapes.

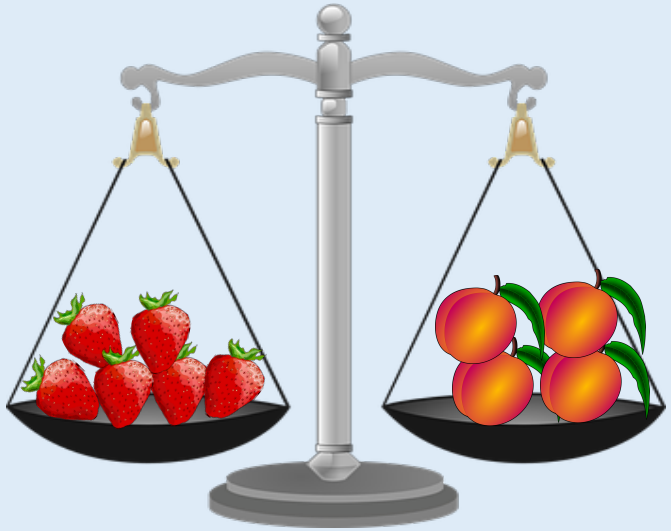




The book weighs more than than the trainer.



Activity 6 Compare Mass

Complete the sentences.



_____ strawberries are equal to _____ peaches.

3 strawberries are equal to _____ peaches.

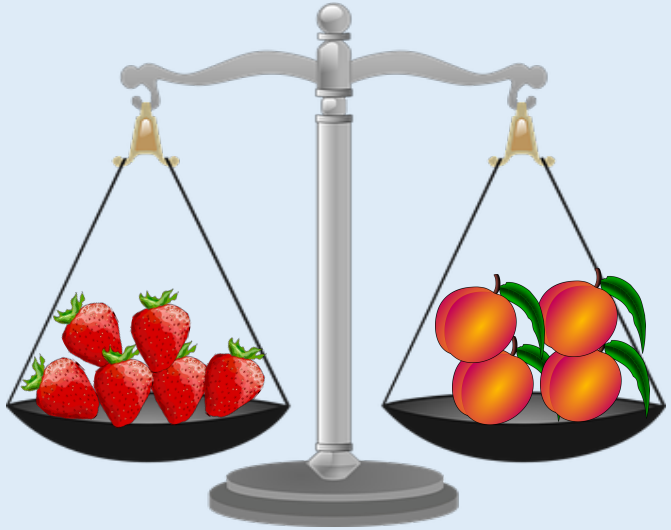
Can you write sentences using 'more' or 'less' about the image?

?

Is the largest object always the heaviest?

Activity 6 Compare Mass

Complete the sentences.



6 strawberries are equal to 4 peaches.

3 strawberries are equal to 2 peaches.

Can you write sentences using 'more' or 'less' about the image?

The strawberries weigh more than the peaches.
The peaches weigh less than the strawberries.

Activity 7 Compare Mass

Complete the sentences.

_____ pears are equal to _____ bananas.

2 pears are equal to _____ bananas.

____ pear is equal to 2 bananas.

Can you write sentences using 'more' or 'less' about the image?

Activity 7 Compare Mass

Complete the sentences.

4 pears are equal to 8 bananas.

2 pears are equal to 4 bananas.

1 pear is equal to 2 bananas.

Can you write sentences using 'more' or 'less' about the image?

Activity 8 Compare Mass

Discuss.

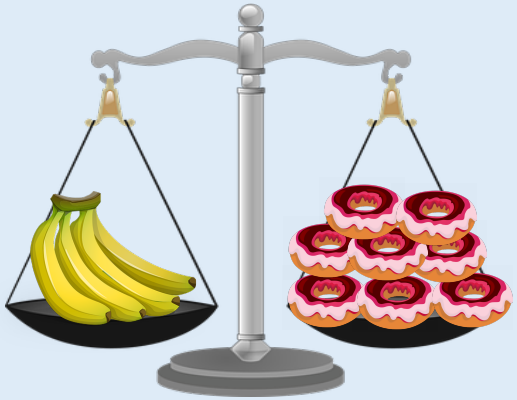
Which side is lower?

What does this tell us about the object?

Which object is heavier?

Which object is lighter?

Reasoning 1 Compare Mass



Zach

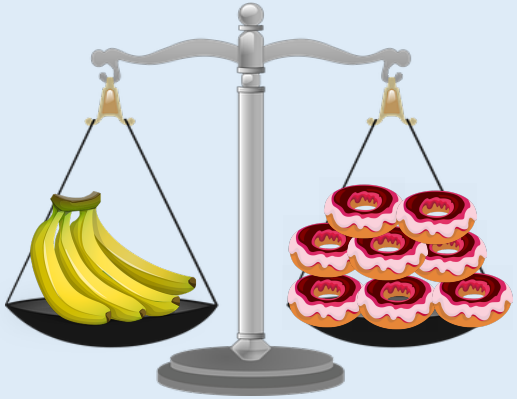
Bananas weigh less than apples.

Two bananas weigh the same as two doughnuts.

Leanna

Do you agree?
Explain why.

Reasoning 1 Compare Mass



Bananas weigh less than apples.

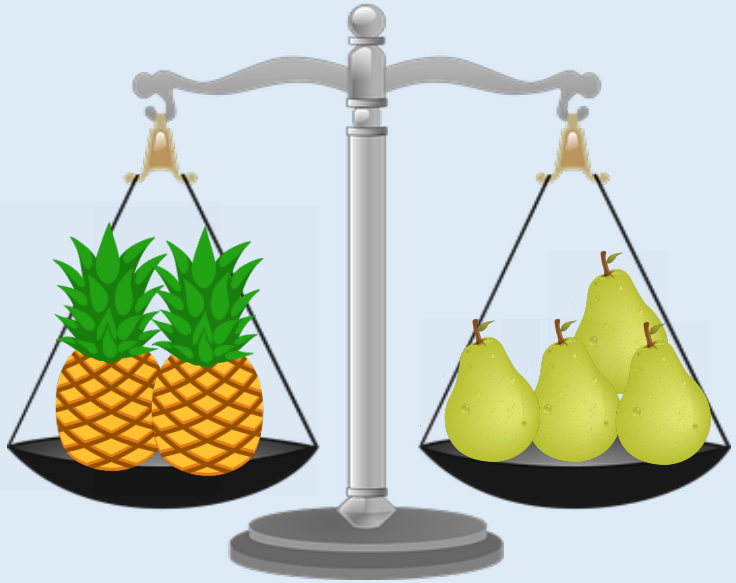
Two bananas weigh the same as two doughnuts.

Zach

Leanna

3 bananas weigh the same as two apples, so Zach is correct – an apple must weigh more than a banana.
1 banana weighs the same as 2 doughnuts so Leanna is incorrect.

Reasoning 2 Compare Mass

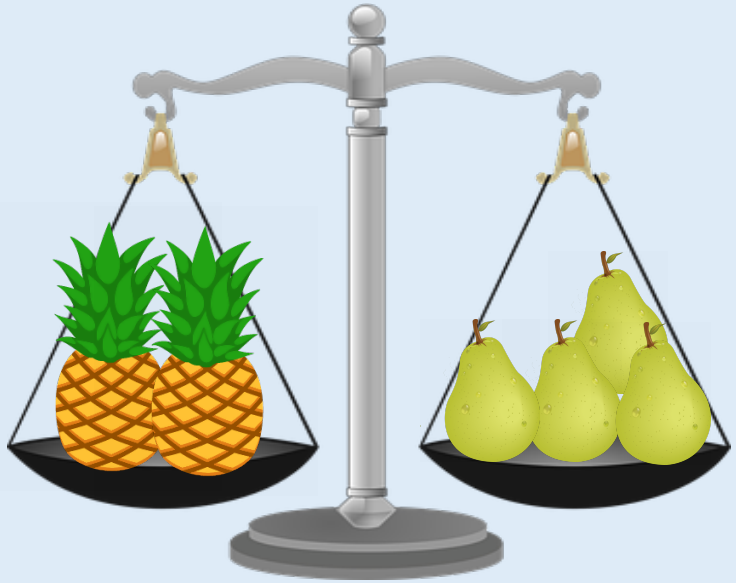


One pear weighs 5 cubes.

How many cubes will balance one pineapple?

Explain how you know?

Reasoning 2 Compare Mass



1 pineapple weighs 10 cubes

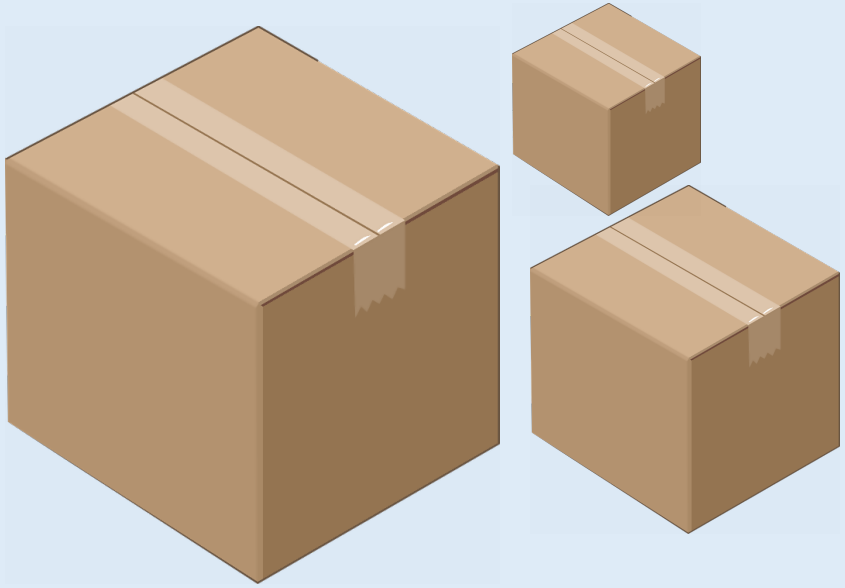
One pear weighs 5 cubes.

How many cubes will balance one pineapple?

Explain how you know?

Reasoning 3 Compare Mass

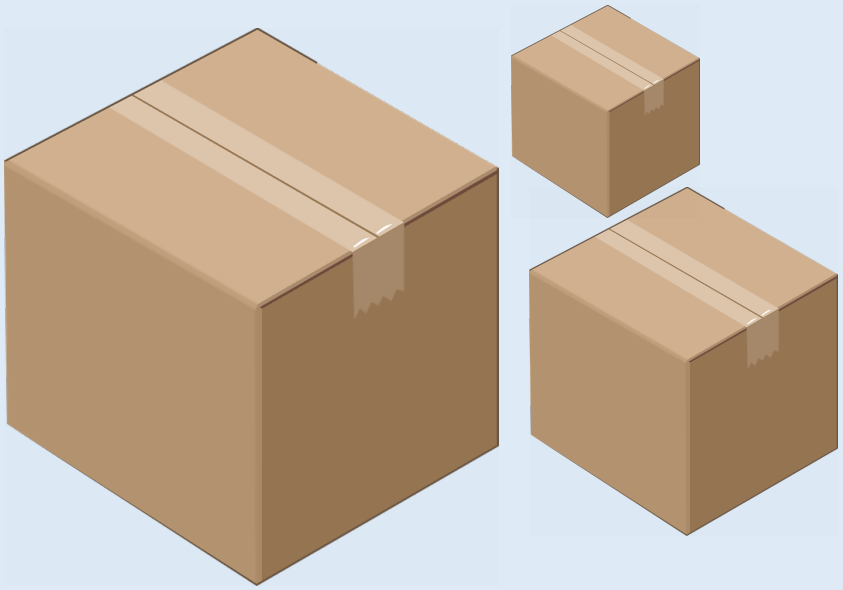
Always, Sometimes or Never True?



The larger the box, the heavier it is.

Reasoning 3 Compare Mass

Always, Sometimes or Never True?



Sometimes. Children can explore this using different sized boxes.

The larger the box, the heavier it is.

Discuss

Compare Mass

Look at the scale, which side is lower?

What does this tell us about objects?

Which object is heavier?

Which object is lighter?

Can you hold the objects and predict which is heavier?

Is the largest object always the heaviest?

Measure Mass (g)

2

Fluency Teaching Slides

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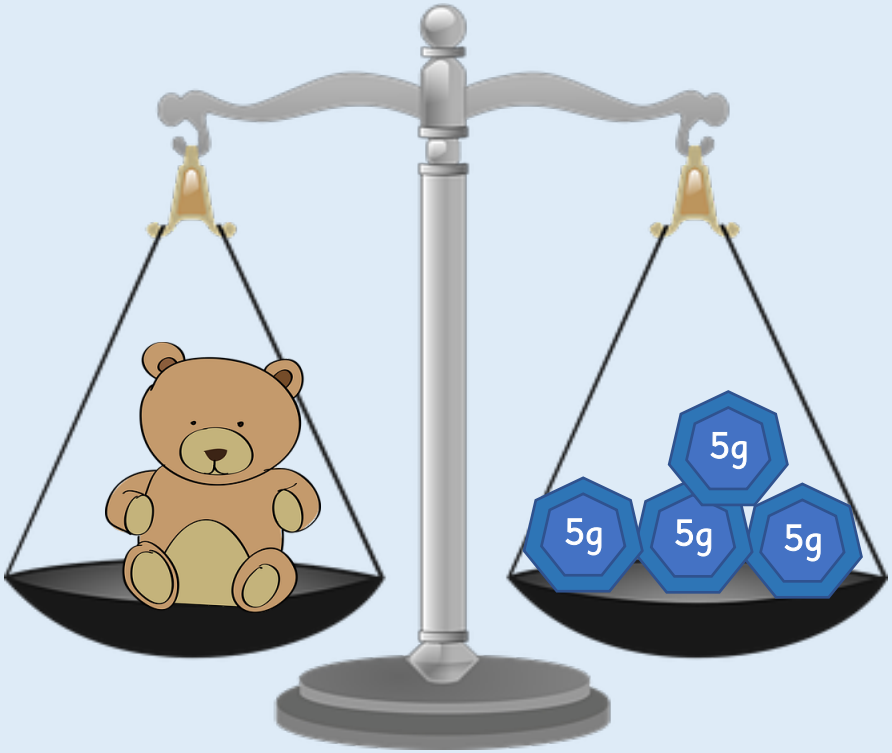
Activity 1 Measure Mass (g)

The weighing scales have 5 gram weights.



How many grams does the teddy weigh?

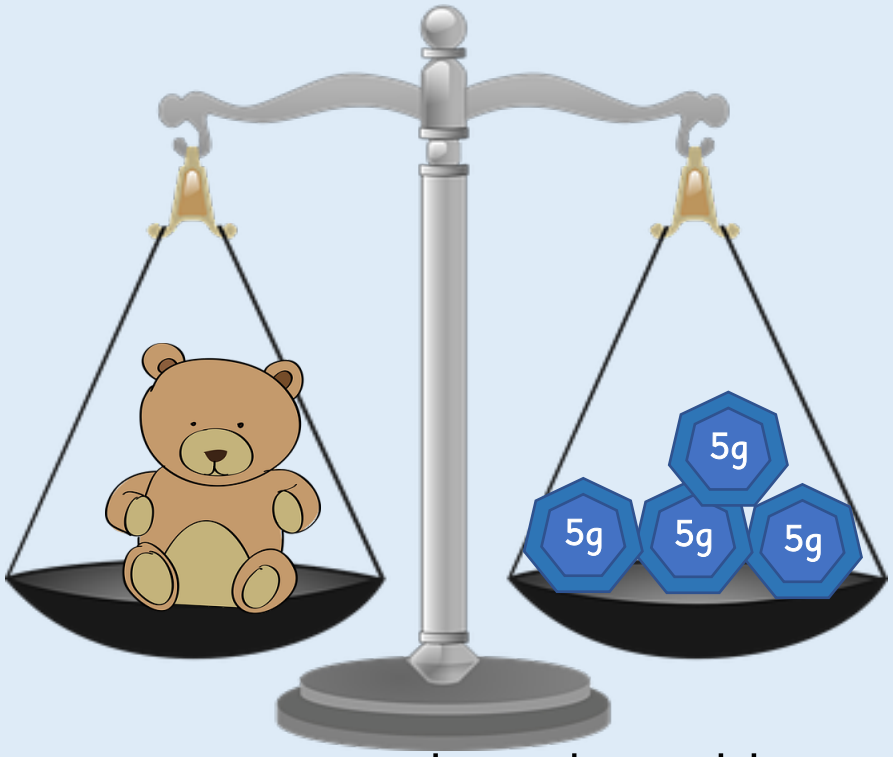
?

When the balance scales are level, what does this tell us?

Activity 1

Measure Mass (g)

The weighing scales have 5 gram weights.



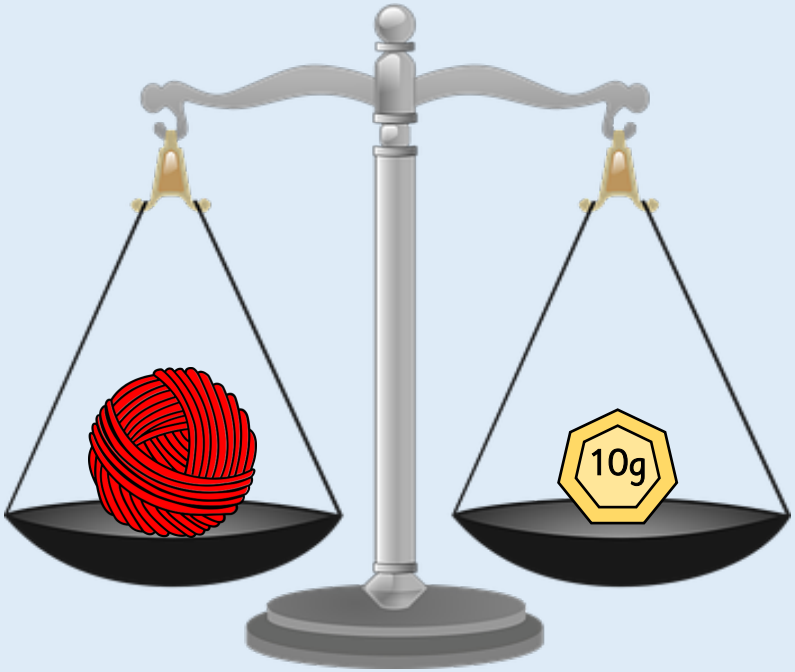
How many grams does the teddy weigh?

Teddy weighs 20 grams.

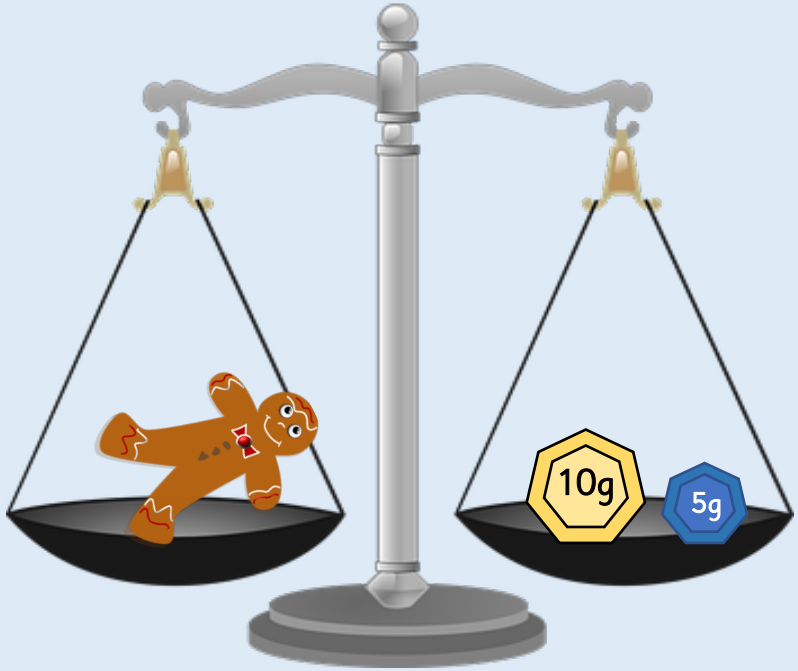
Activity 2

Measure Mass (g)

How many grams do these objects weigh?



The ball of wool weighs _____ grams.

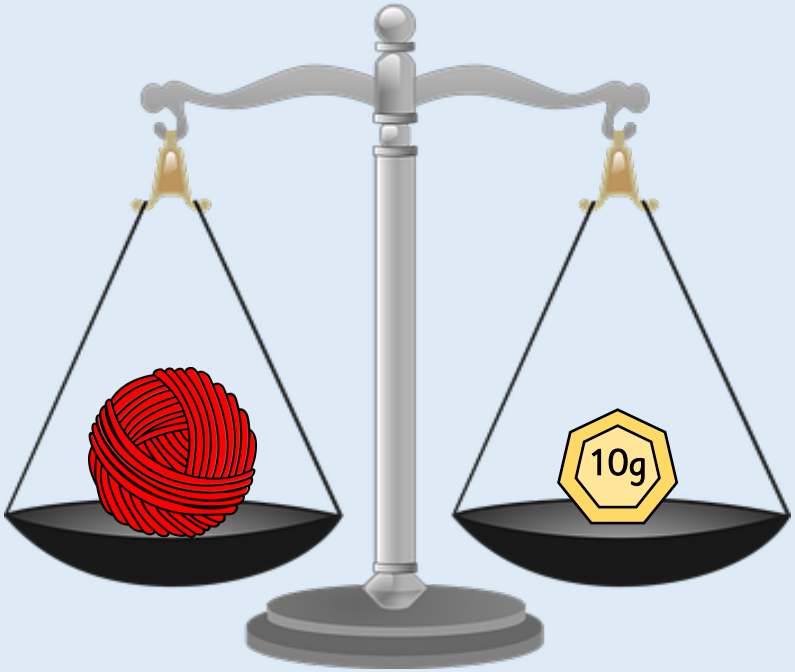


The gingerbread man weighs _____ grams.

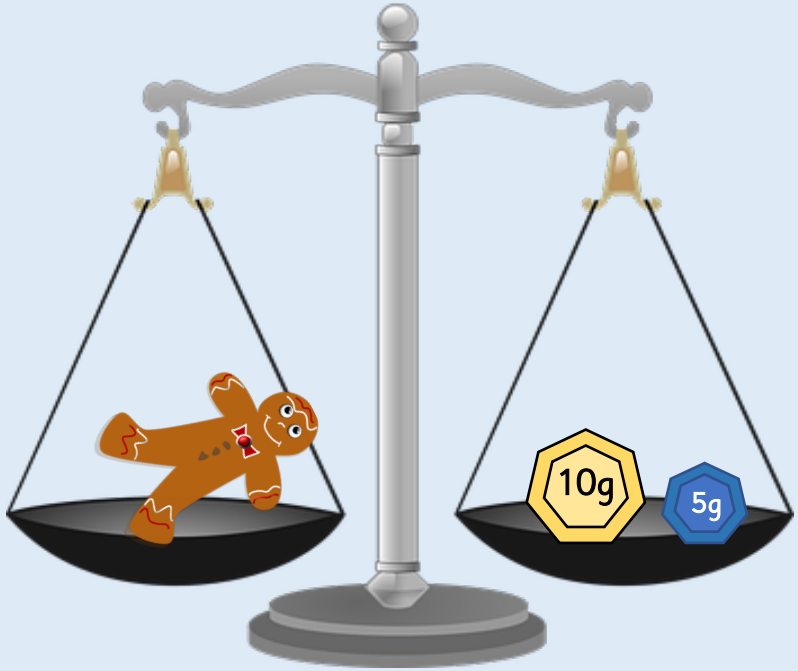
Activity 2

Measure Mass (g)

The weighing scales have weights.



The ball of wool weighs
__10__ grams.

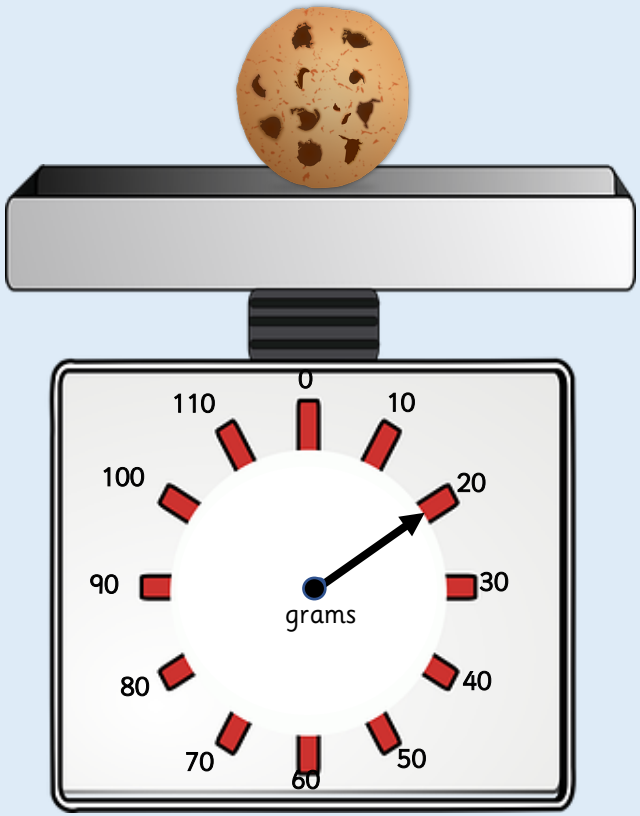


The gingerbread man weighs
__15__ grams.

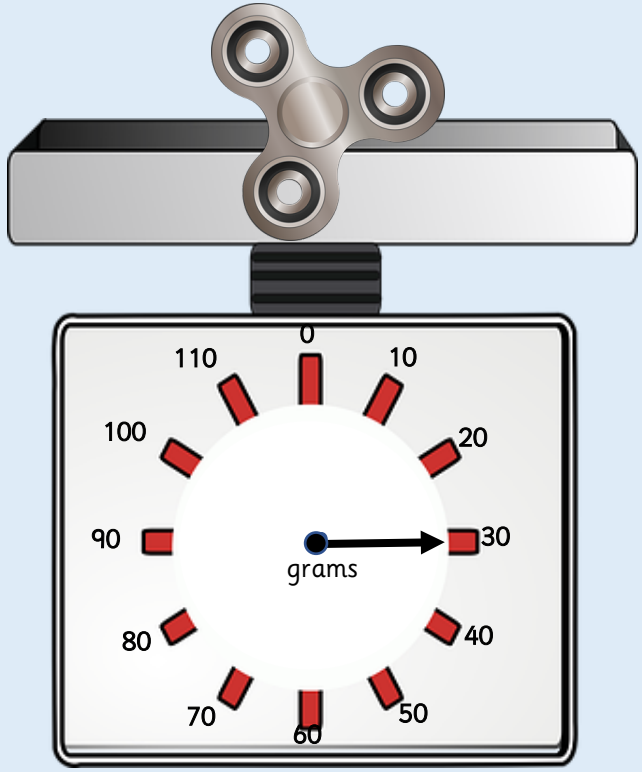
Activity 3

Measure Mass (g)

What is the mass of the objects?



The mass of the cookie in grams is _____.

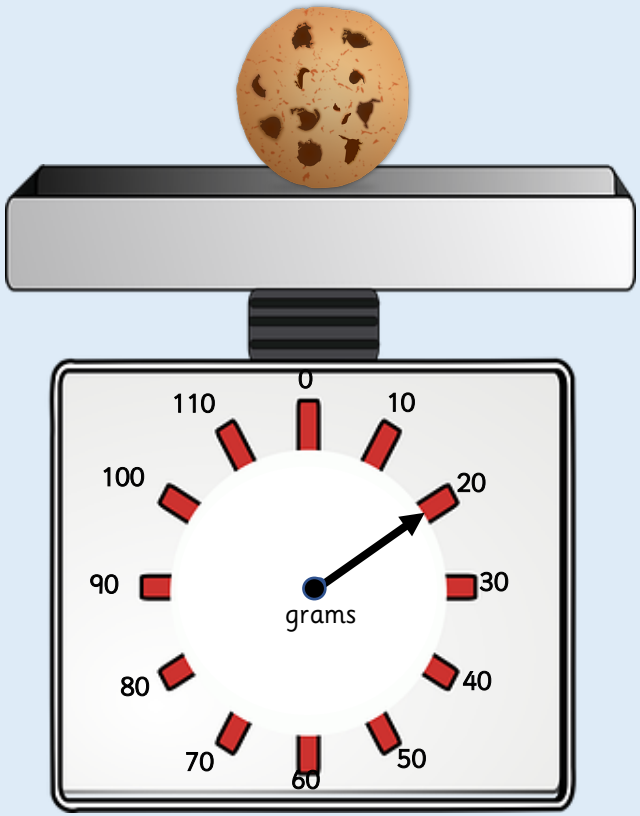


The mass of the toy in grams is _____.

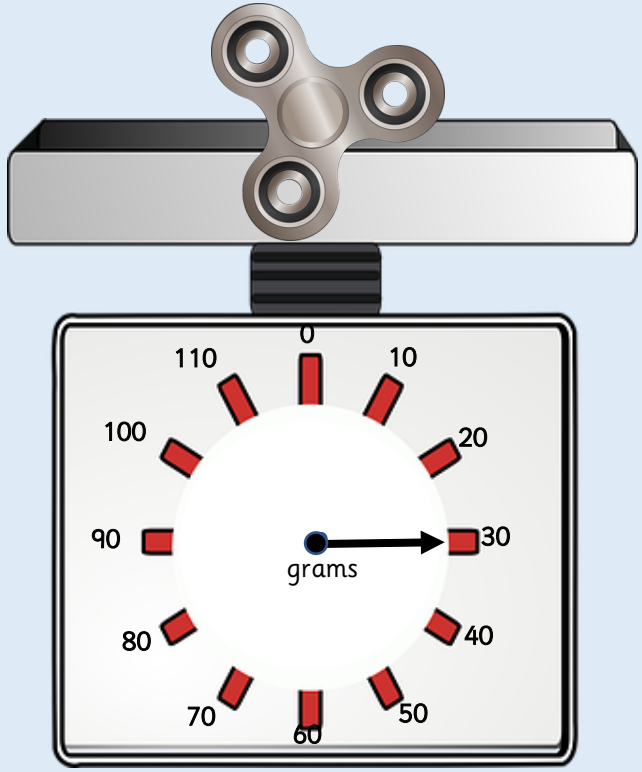
Activity 3

Measure Mass (g)

What is the mass of the objects?



The mass of the cookie in grams is 20 g.

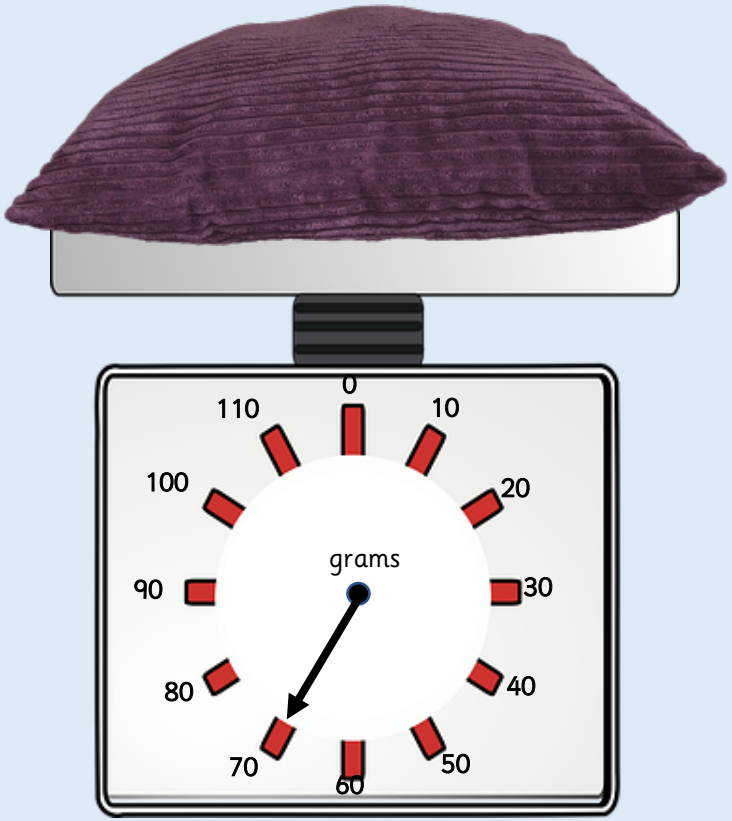


The mass of the toy in grams is 30 g.

Activity 4

Measure Mass (g)

What is the mass of the object?



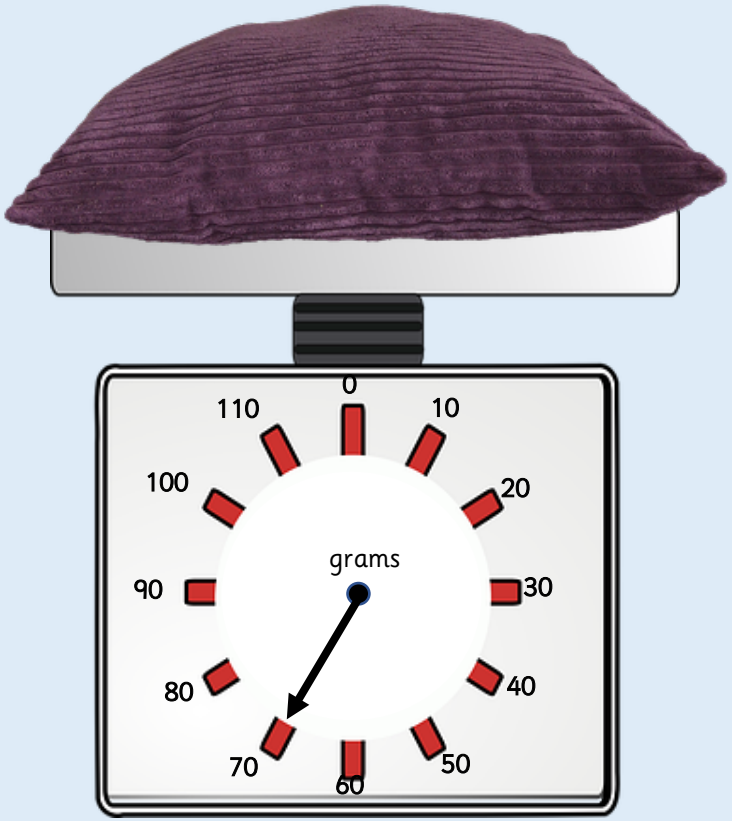
The mass of the cushion in grams is _____.

The mass of the cushion in grams is _____.

Activity 4

Measure Mass (g)

What is the mass of the object?



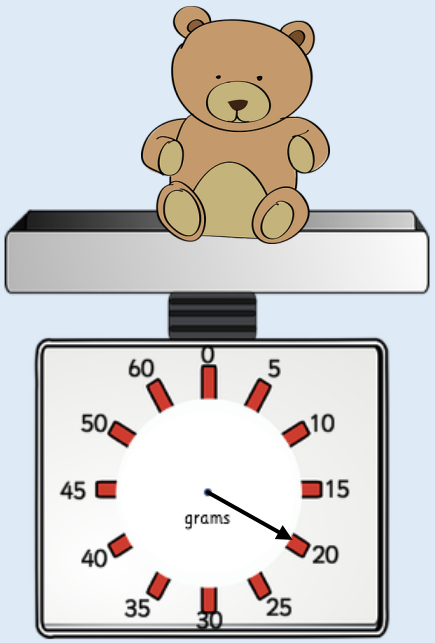
The mass of the cushion in grams is 70 g.

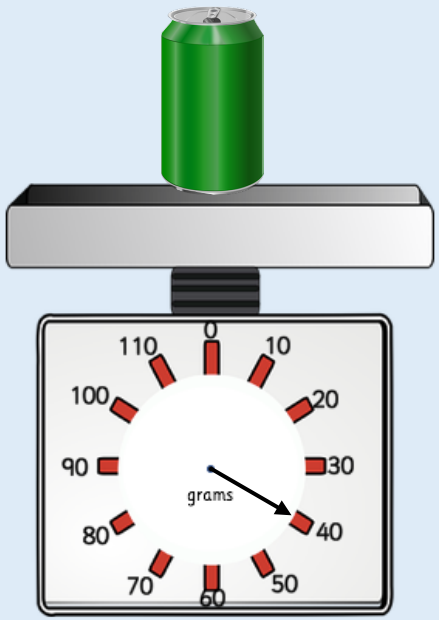
The mass of the cushion in grams is 65 g.

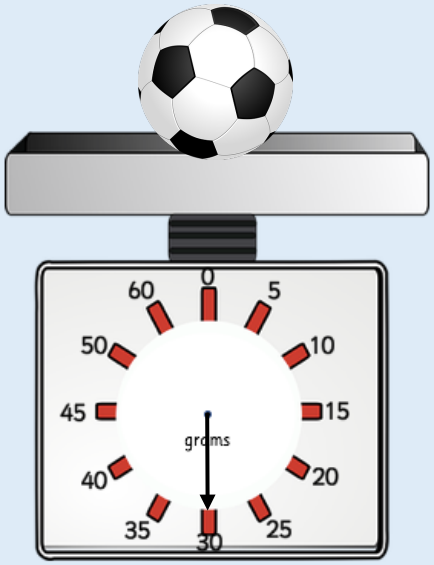
Activity 5

Measure Mass (g)

Order the objects from heaviest to lightest.







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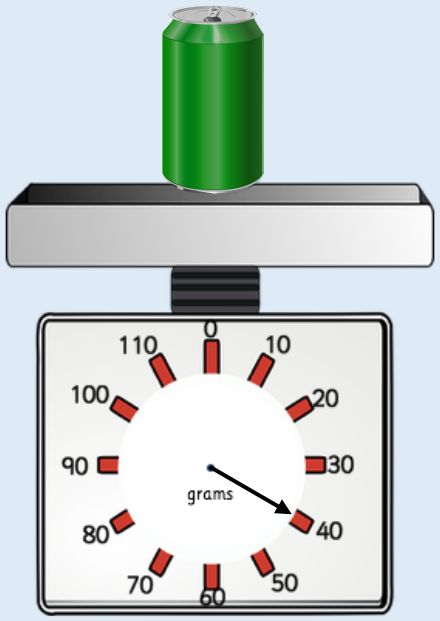
How could you tell something was lighter or heavier than 10g?

Activity 5

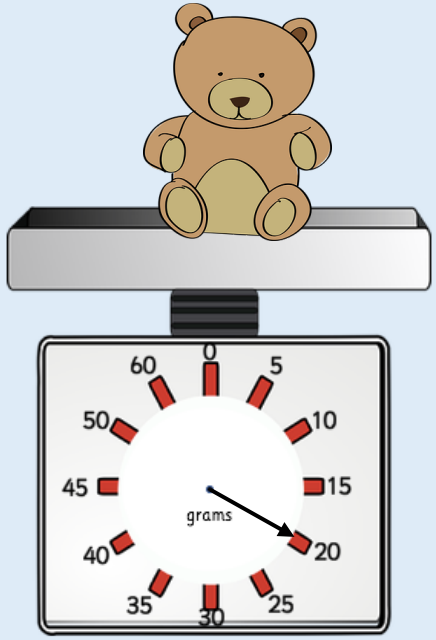
Measure Mass (g)

Order the objects from heaviest to lightest.



40 g

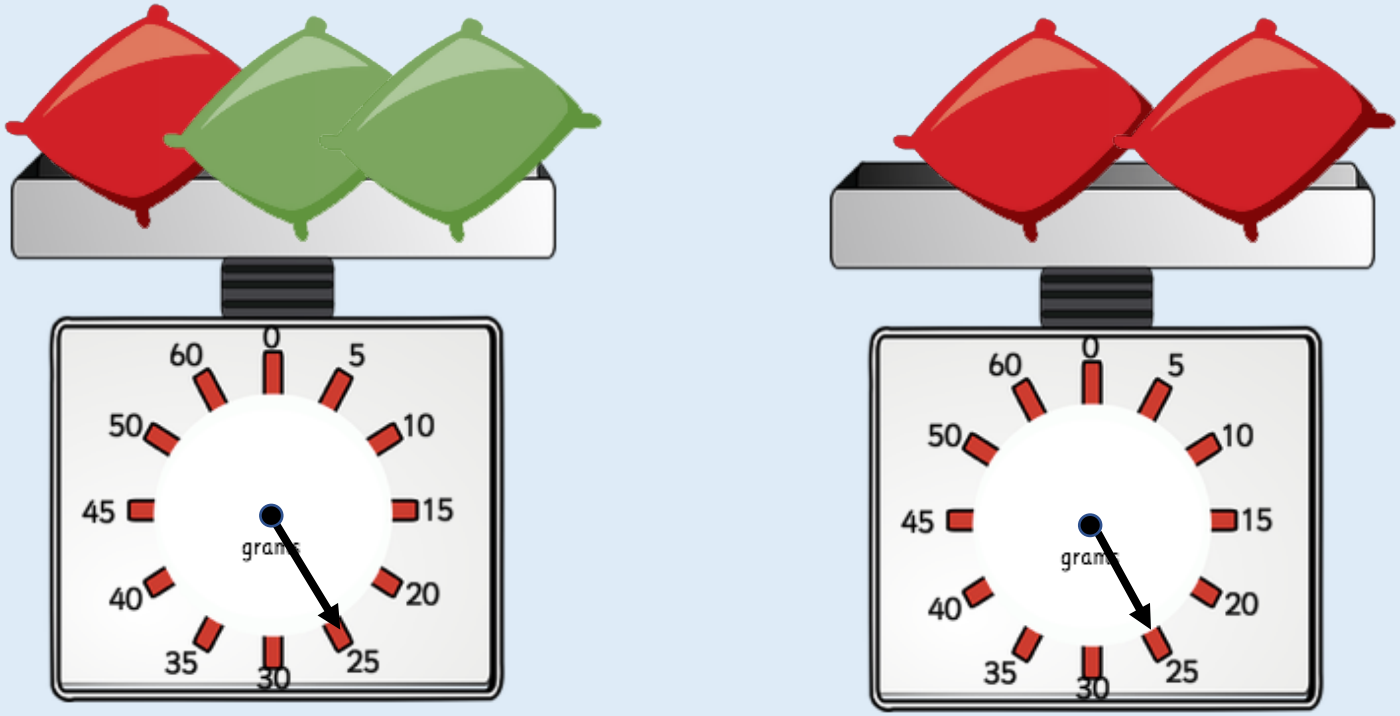
30 g



20 g

Reasoning 1

Measure Mass (g)

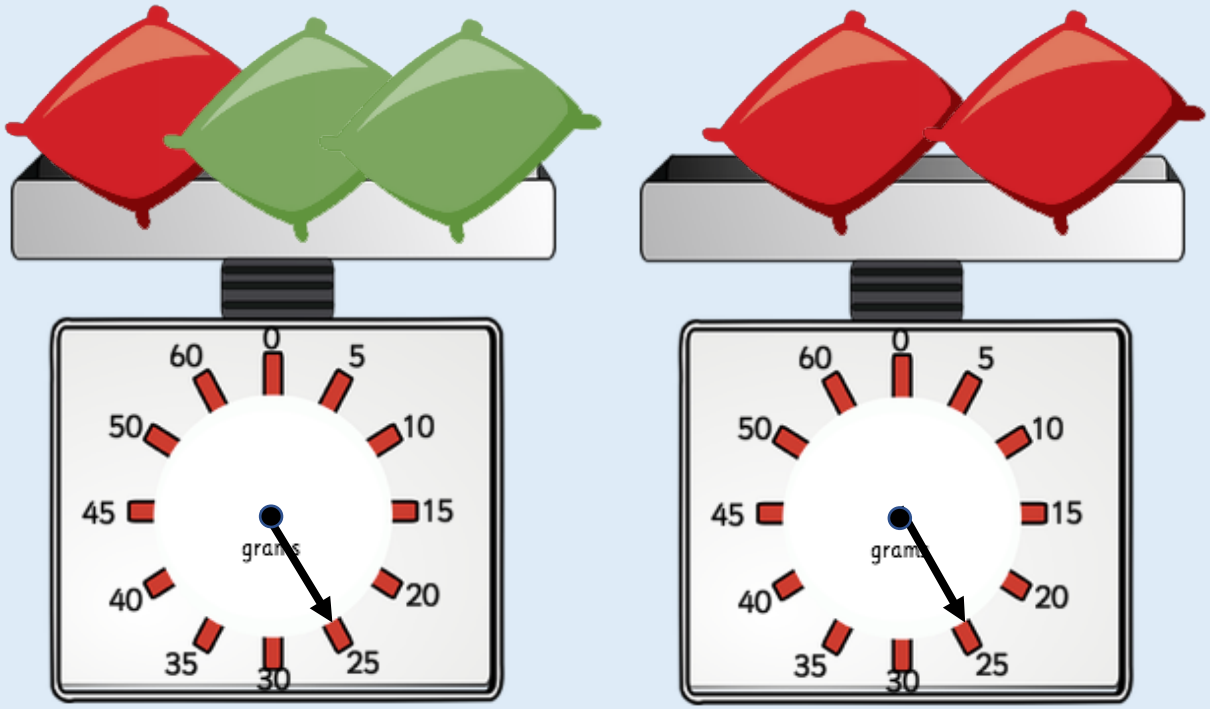


Which is heavier, the red or the green beanbag?

Explain why.

Reasoning 1

Measure Mass (g)



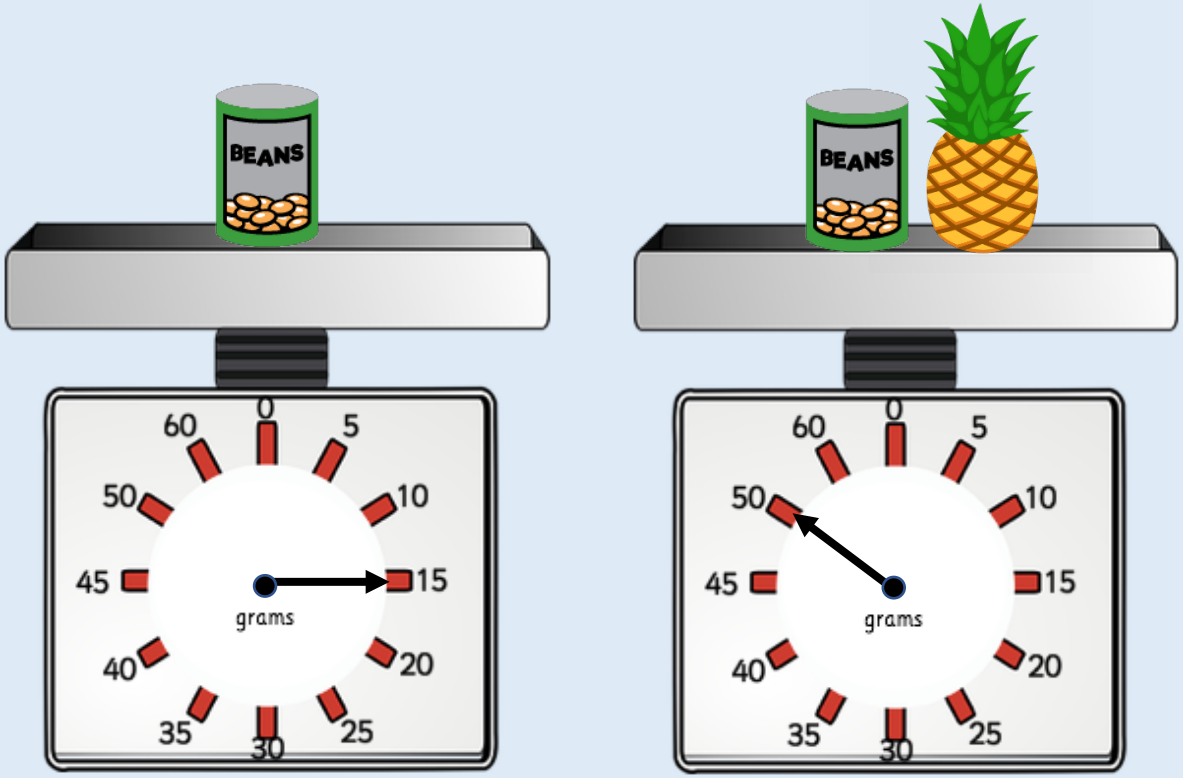
The red beanbag weighs more because it weighs the same as two green beanbags.

Which is heavier, the red or the green beanbag?

Explain why.

Reasoning 2

Measure Mass (g)



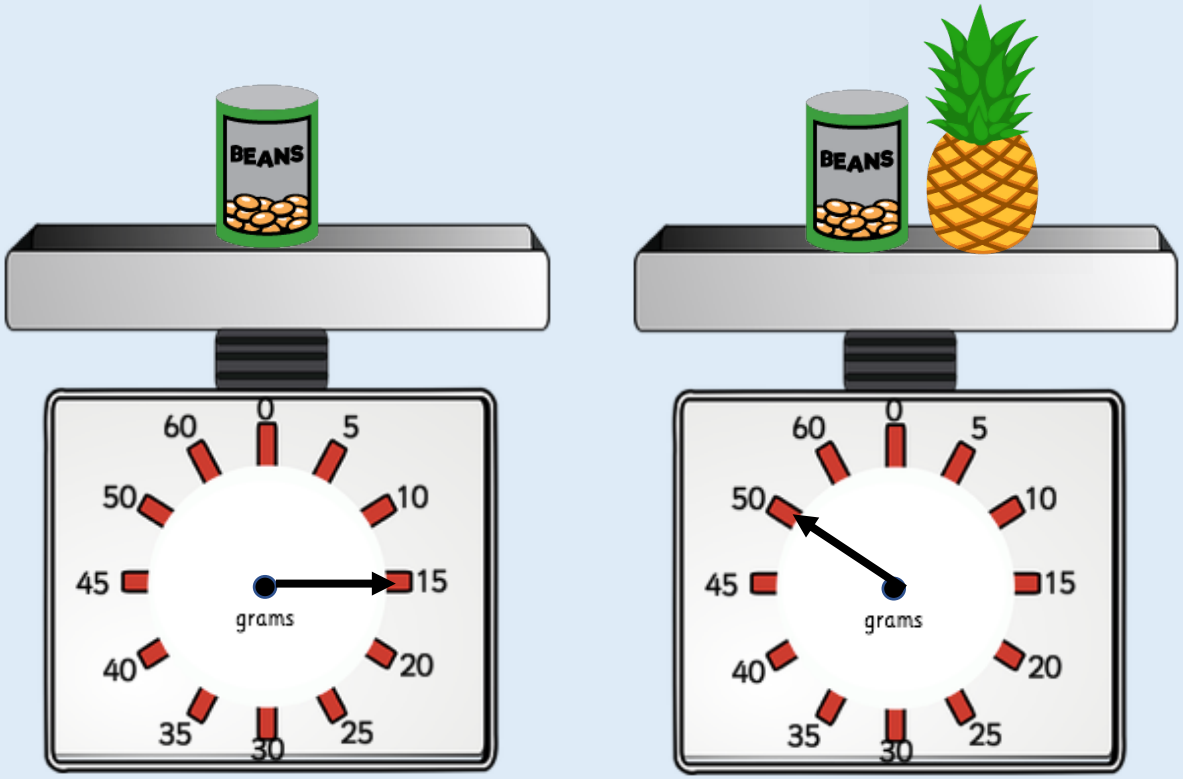
The 

weighs _____ grams.

The  weighs _____ grams.

Reasoning 2

Measure Mass (g)



The  weighs 15 grams.

The  weighs 35 grams.

Discuss

Measure Mass (g)

When the balance scales are level, what does this tell us?

What symbol could we use?

What is the mass of the _____?

What would two ____ weigh?

How could you tell something was lighter or heavier than 10g?

How much heavier is the ___ than the ____?

How could you work it out?

Measure Mass (kg)

2

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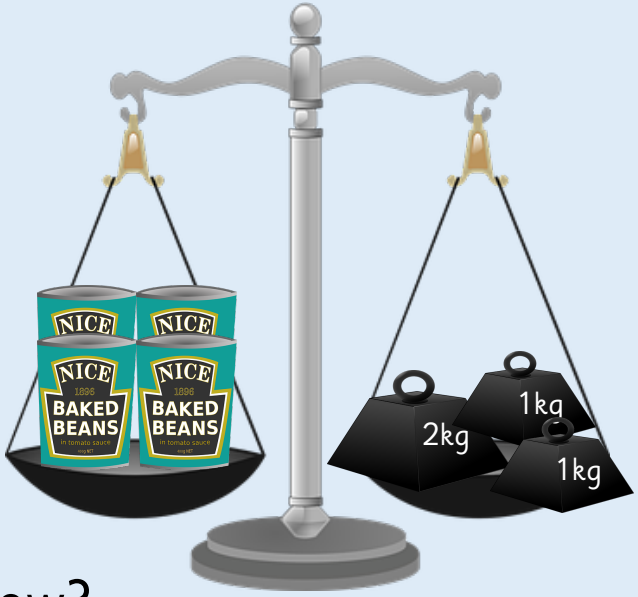
Activity 1

Measure Mass (kg)

What is the mass of the beans?



How do you know?

Can you work out the mass of one can?

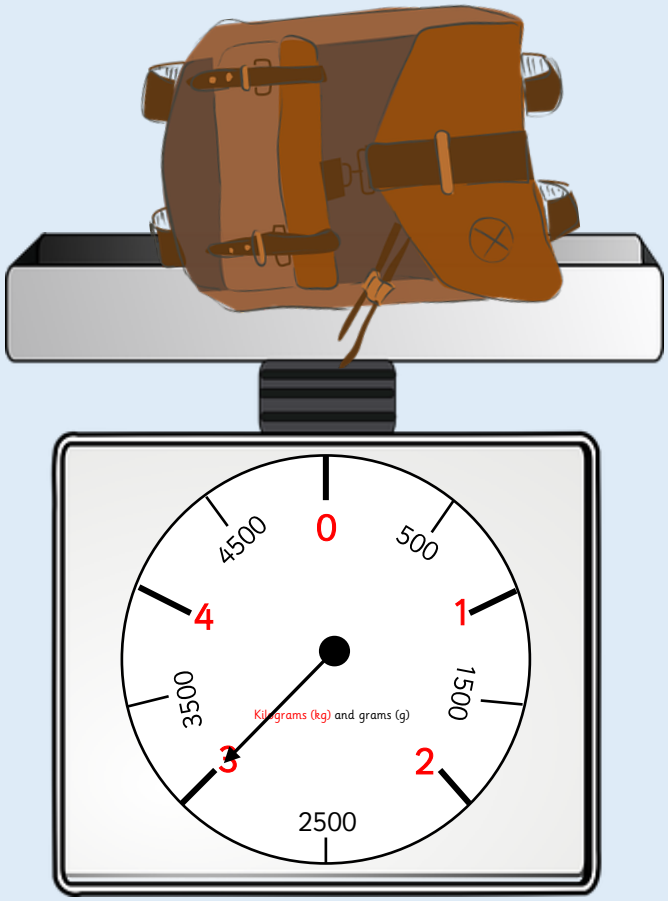
?

Which is heavier, one gram or one kilogram?

Activity 2

Measure Mass (kg)

What is the mass of the bag?

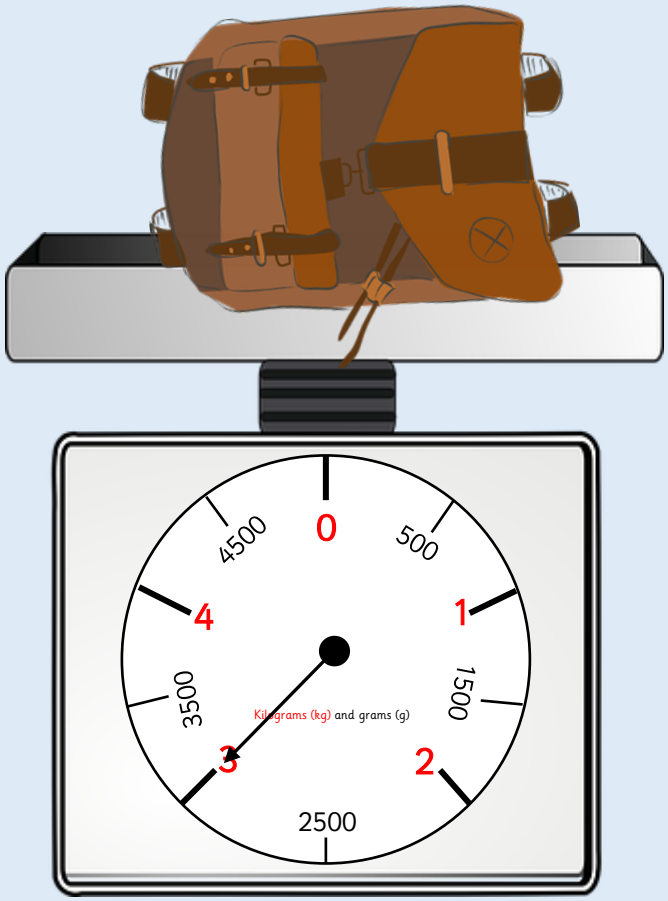


The bag weighs _____ kg.

Activity 2

Measure Mass (kg)

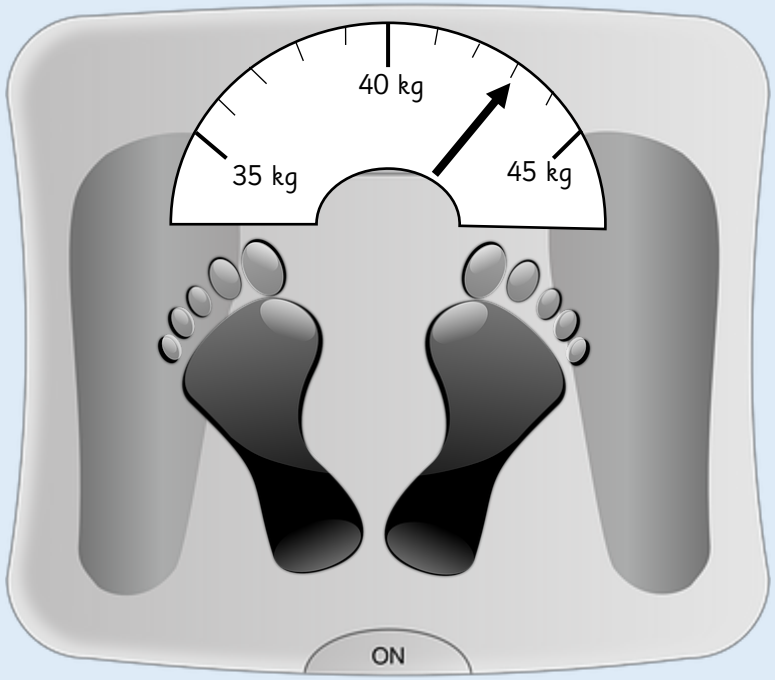
What is the mass of the bag?



The bag weighs ___3___ kg.

Activity 3 Measure Mass (kg)

What is the mass of the person?



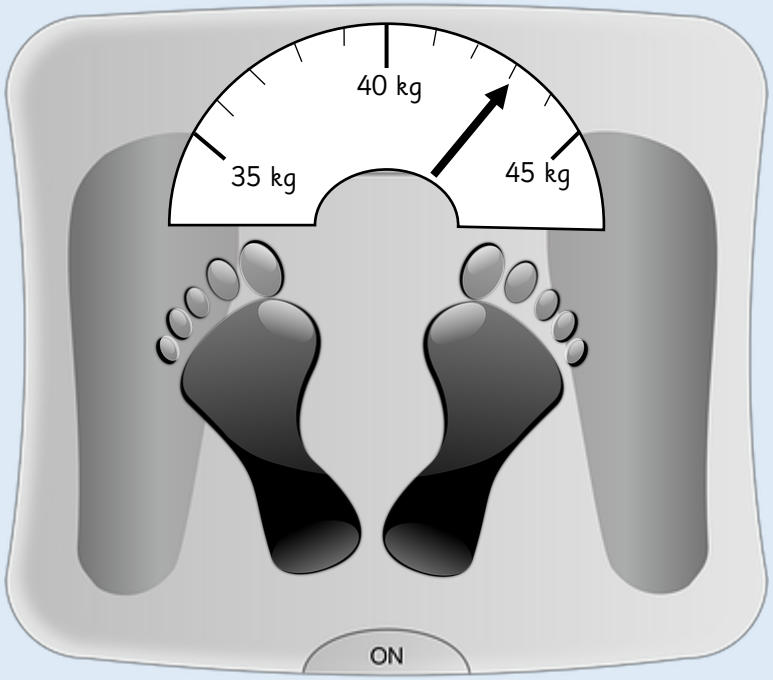
The person weighs _____ kg.

?

How much do you think you weigh?
Would you measure this in grams or kilograms?
Shall we estimate and then weigh ourselves?

Activity 3 Measure Mass (kg)

What is the mass of the person?



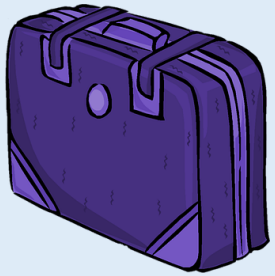
The person weighs 43 kg.

Activity 4 Measure Mass (kg)

Leanna's family is going on holiday.
Compare the weight of their suitcases.

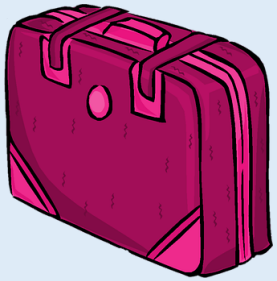
26kg

Mum's suitcase



17kg

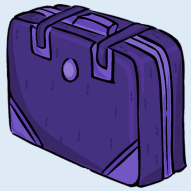
Leanna's suitcase



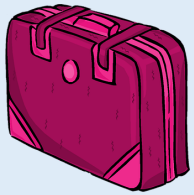
19kg

Sister's suitcase

Leanna's suitcase ◯ Mum's suitcase



◯



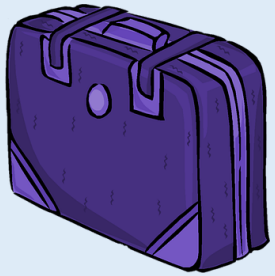
Mum's case weighs ____ kg more than the sister's case.

Activity 4 Measure Mass (kg)

Leanna's family is going on holiday.
Compare the weight of their suitcases.

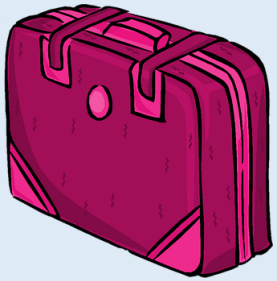
26kg

Mum's suitcase



17kg

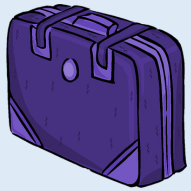
Leanna's suitcase



19kg

Sister's suitcase

Leanna's suitcase < Mum's suitcase



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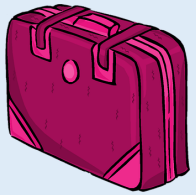
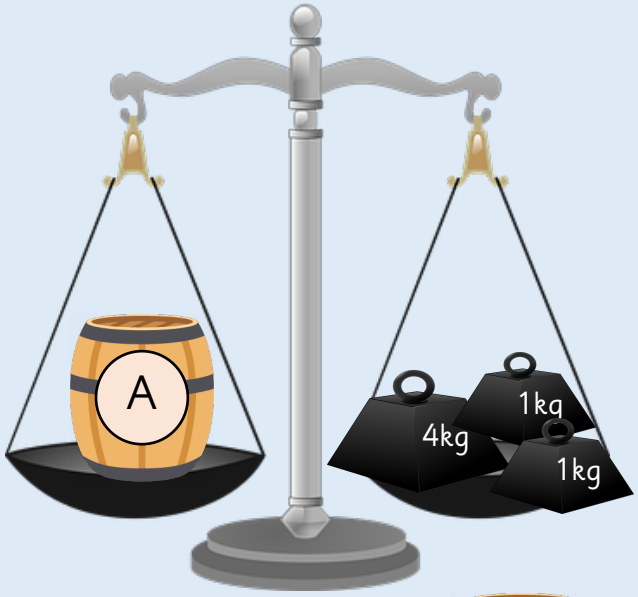


Mum's case weighs 7 kg more than the sister's case.

Reasoning 1

Measure Mass (kg)

What is the mass of each barrel?



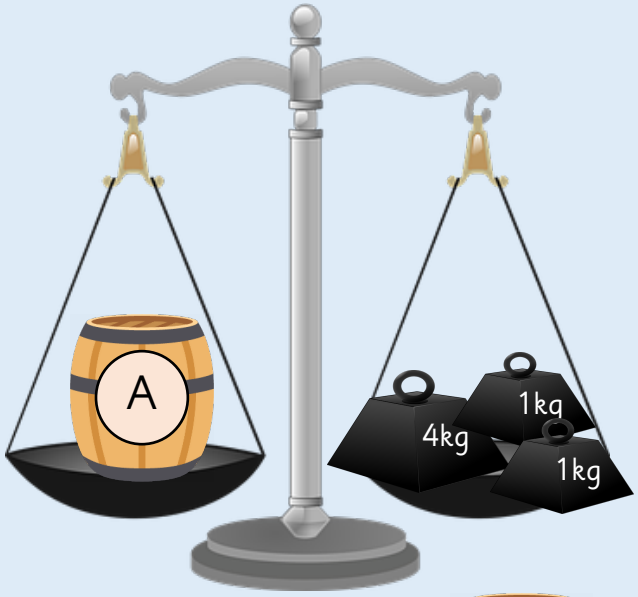
Double the mass of A 

Half the mass of A

What is the difference between the mass of B and C?

Reasoning 1 Measure Mass (kg)

What is the mass of each barrel?



Double the mass of A

Half the mass of A

Barrel A weighs 6 kg.

Barrel B weighs 12 kg.

Barrel C weighs 3 kg.

B is 9 kg heavier than C.

What is the difference between the mass of B and C?

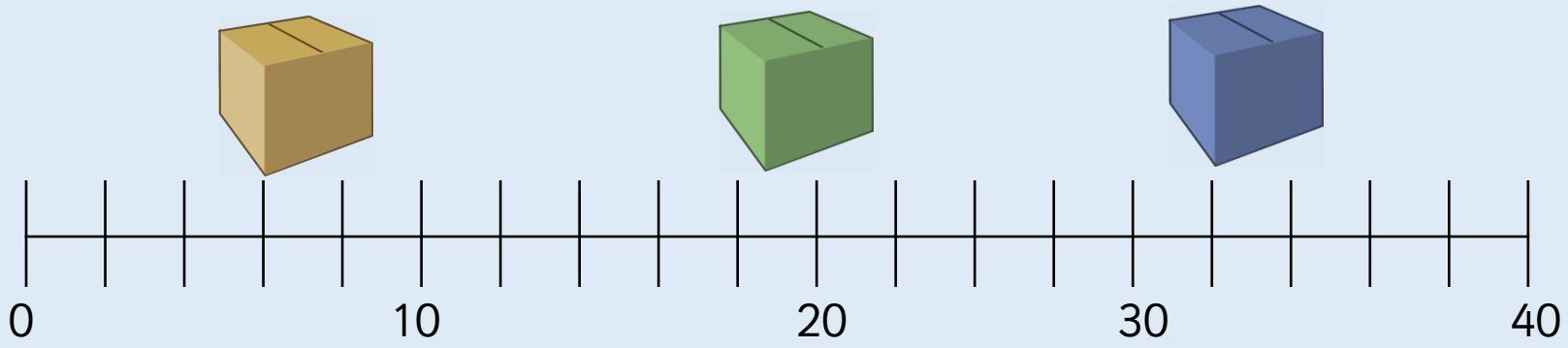
Reasoning 2 Measure Mass (kg)

The brown box weighs twice as much as the blue box.

The green box weighs 2 kg more than 30 kg.

The blue box weighs 12 kg less than the green box.

Draw an arrow to show where each box would be on the scale.



Reasoning 2 Measure Mass (kg)

The brown box weighs twice as much as the blue box.

The green box weighs 2 kg more than 30 kg.

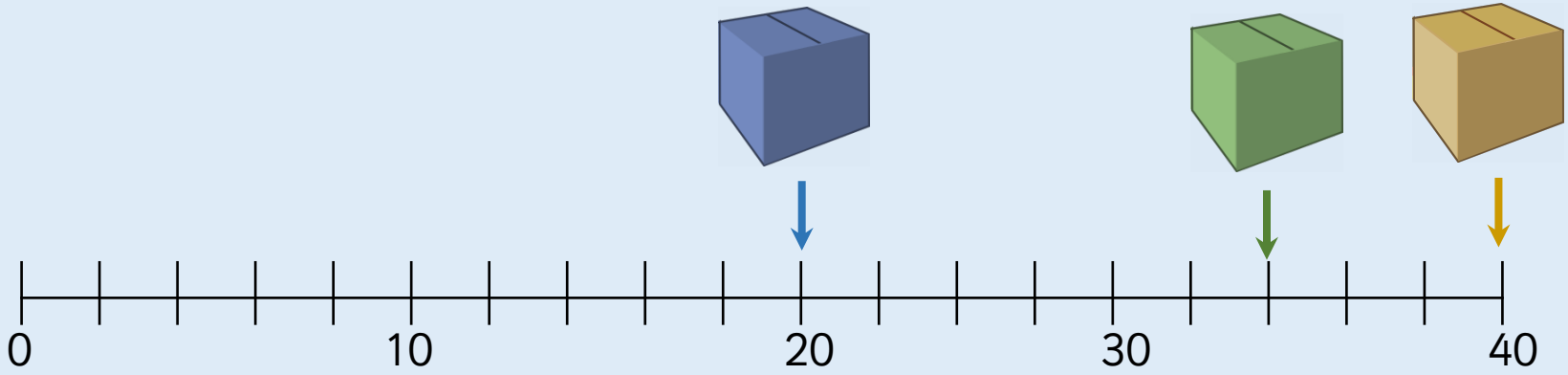
The blue box weighs 12 kg less than the green box.

Draw an arrow to show where each box would be on the scale.

The green box weighs 32 kg.

The blue box weighs 20 kg.

The brown box weighs 40 kg.



Discuss

Measure Mass (kg)

Which is heavier, one gram or one kilogram?

What else do you think we might measure in kilograms?

How much do you think that you weigh?

Would you measure this in grams or kilograms?

Shall we estimate and then weigh ourselves?

Can you make up some different questions about the suitcases?

What words can you use to compare?

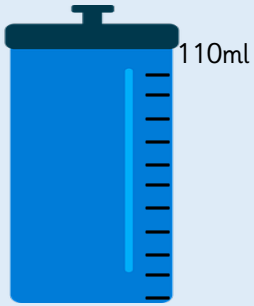
Compare Volume

2

Fluency Teaching Slides

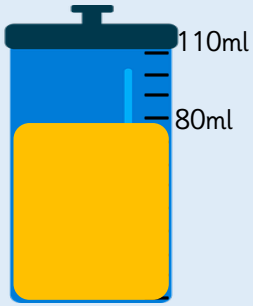
Lesson 1 Capacity and Volume

Capacity is the amount of liquid a container can hold.



The capacity of this bottle is 110ml.

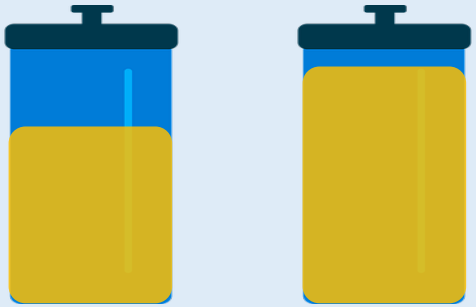
Volume is how much liquid is in the container.



The volume of this bottle is 80ml.

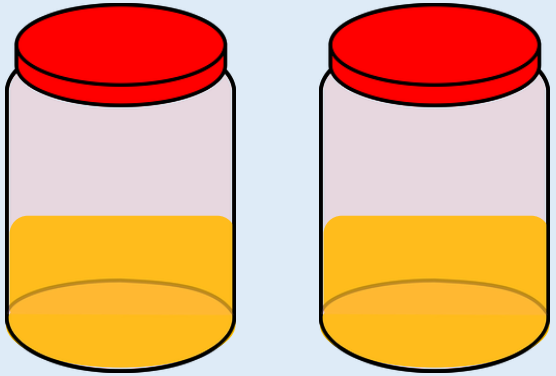
Activity 1 Compare Volume

Complete the sentences the using words “less”, “more” or “equal”.



A B

Container A has _____ than container B.

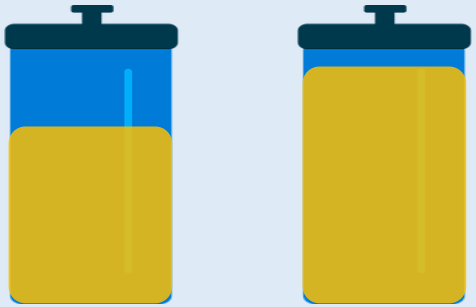


A B

Container A is _____ to container B.

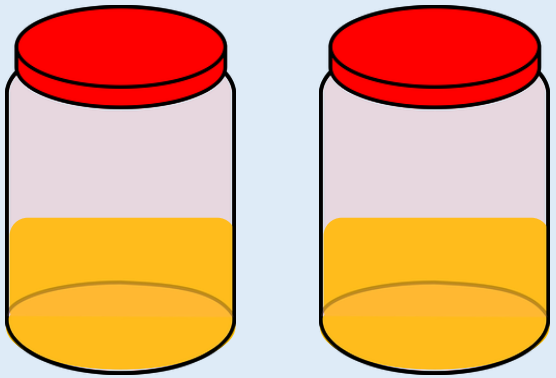
Activity 1 Compare Volume

Complete the sentences the using words “less”, “more” or “equal”.



A B

Container A has less than container B.



A B

Container A is equal to container B.

Activity 2 Compare Volume

Complete the sentences the using words “less”, “more” or “equal”.

A B C

Container C has _____ than container B.

Container A has _____ than container C but _____ than container B.

Activity 2 Compare Volume

Complete the sentences the using words "less", "more" or "equal".

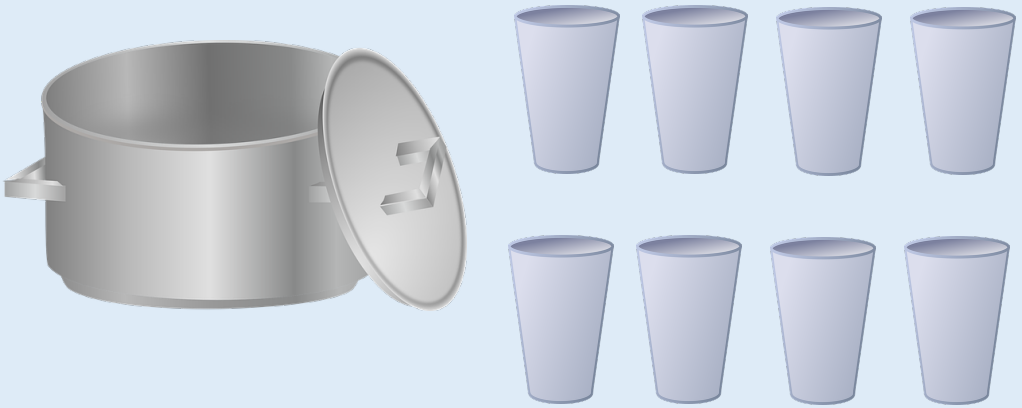
A B C

Container C has ___less___ than container B.

Container A has ___more___ than container C but ___less___ than container B.

Activity 3 Compare Volume

Complete the sentences.



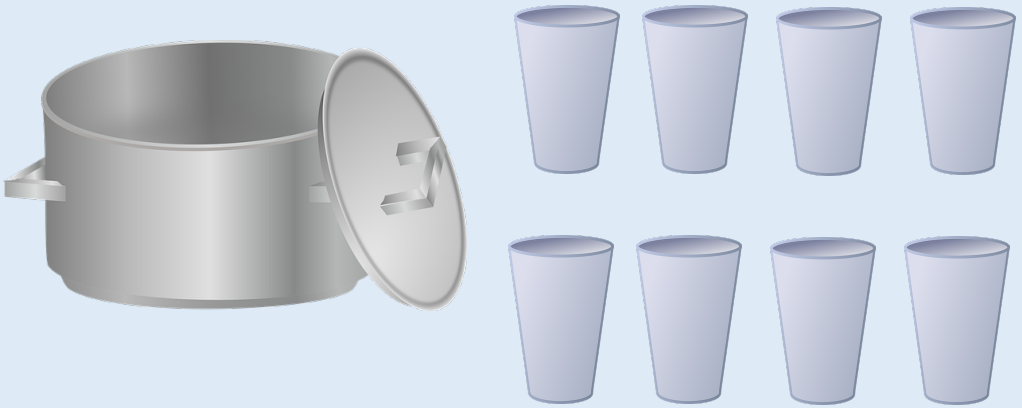
The pot can fill _____ cups.

The bottle can fill _____ cups.

Which can hold more?

Activity 3 Compare Volume

Complete the sentences.



The pot can fill 8 cups.

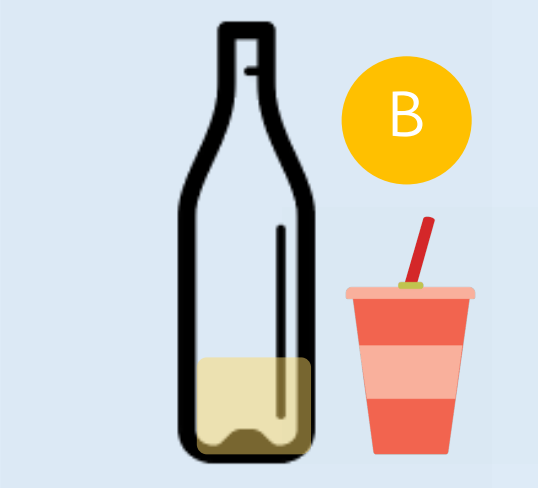
The bottle can fill 4 cups.

Which can hold more?

The pot can hold more.

Reasoning 1 Compare Volume

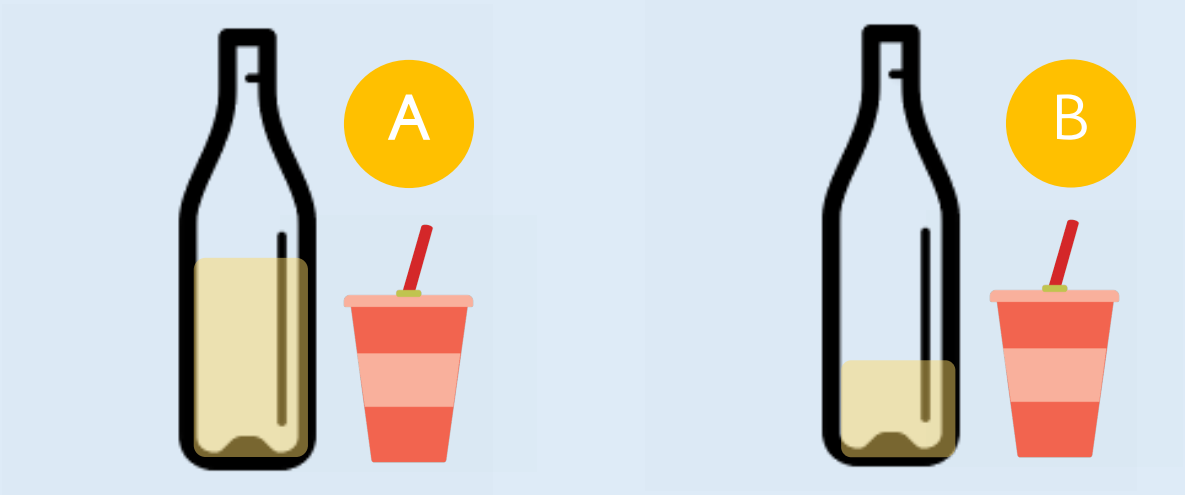
Malachi had two full bottles of orange juice.
He poured some juice into two glasses.



Which glass has the most juice in?
Which has the least juice in?
Explain how you know.

Reasoning 1 Compare Volume

Malachi had two full bottles of orange juice.
He poured some juice into two glasses.



Which glass has the most juice in?
Which has the least juice in?
Explain how you know.

Glass A has the least juice than in Glass B has more juice in.

Bottle A has more juice leftover which means it has less juice poured out.

Reasoning 2 Compare Volume

Choose a selection of different sized containers.
Decide how you will measure how much liquid each container can hold.
Order your containers from smallest to largest.
Compare the containers using <, > or =.

Discuss

Compare Volume

Which container has the largest/smallest capacity?

How do you know?

Can we order them from largest to smallest?

Which container has the most or least liquid in?

How many mugs does it take to fill the bottle?

Is this more or less than the pot?

Can we find the difference?

Does the tallest container always hold the most?

Millilitres

2

Fluency Teaching Slides

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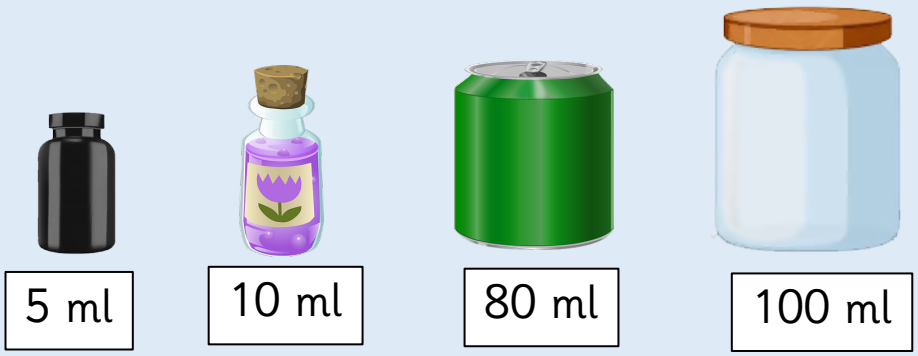
Activity 1 Millilitres

Look at a variety of different containers labelled in ml.

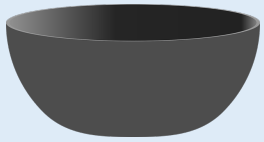


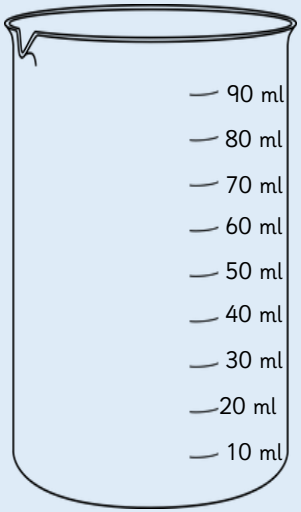
Is 5 ml a large or small amount?

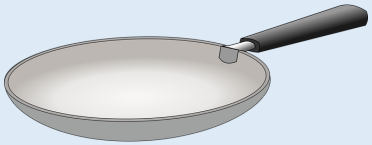
Which container holds the most millilitres?

Activity 2 Millilitres

Use different types of containers.
Fill them with water or rice.
Pour them into a measuring cylinder and measure the volume of liquid or rice in the measuring cylinder.



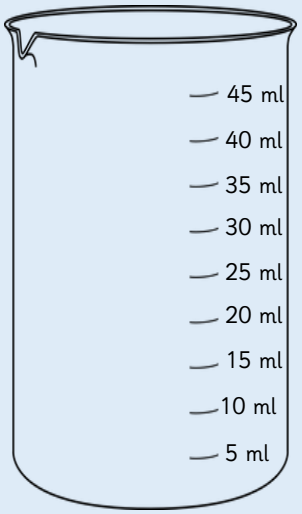




Activity 3 Millilitres

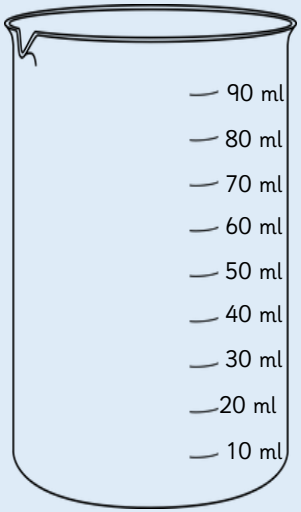
Show on the measuring jug where the liquid would go to from each container.

10 ml



The container's capacity is _____ml.

80 ml



The container's capacity is _____ml.

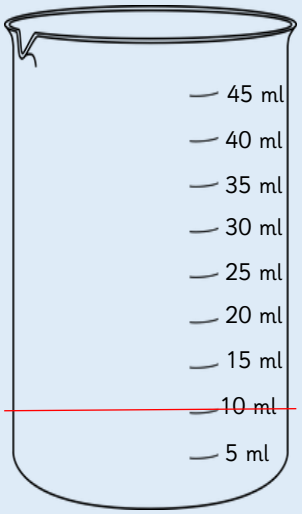
?

If we pour the liquid into the cylinder, how much does each container hold?

Activity 3 Millilitres

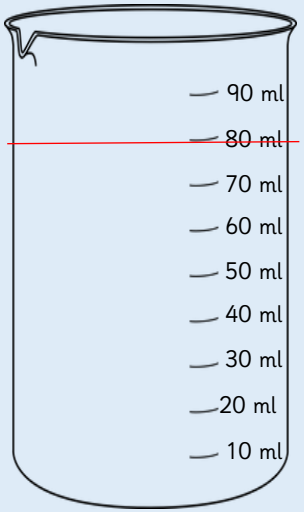
Show on the measuring jug where the liquid would go to from each container.

10 ml



The container's capacity is 45 ml.

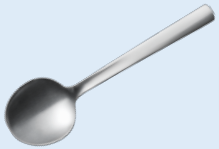
80 ml

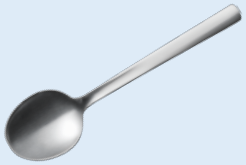


The container's capacity is 90 ml.

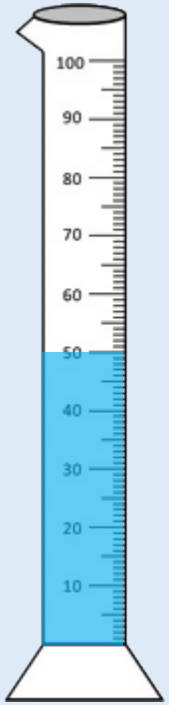
? If we pour the liquid into the cylinder, how much does each container hold?

Reasoning 1 Millilitres

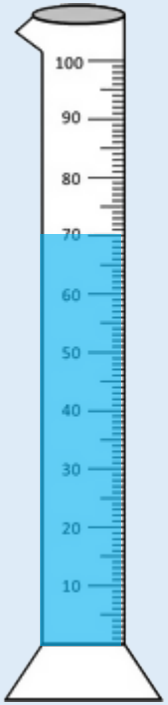
A  holds 5 ml of liquid.

How many  of liquid are there in each container?

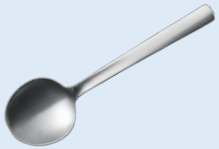
A

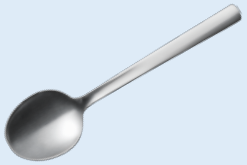


B

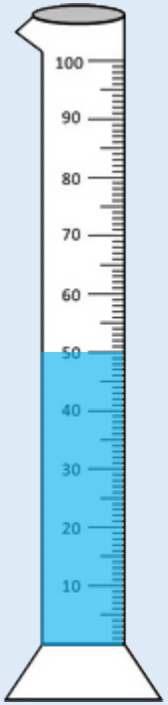


Reasoning 1 Millilitres

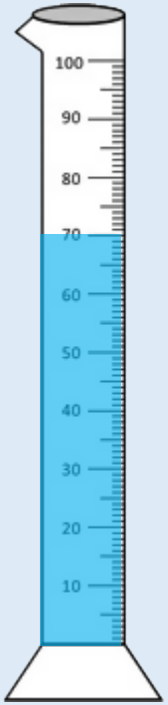
A  holds 5 ml of liquid.

How many  of liquid are there in each container?

A



B

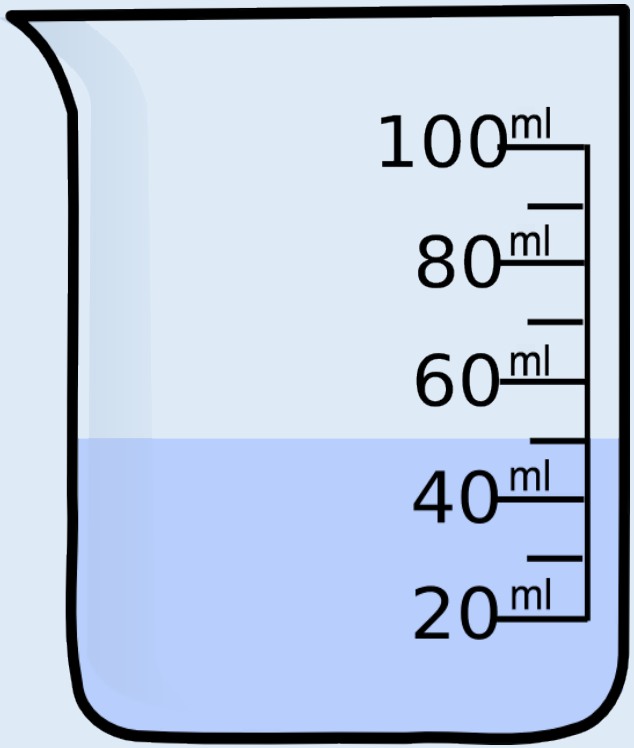


Container A holds 10 teaspoons.

Container B holds 14 teaspoons.

Reasoning 2 Millilitres

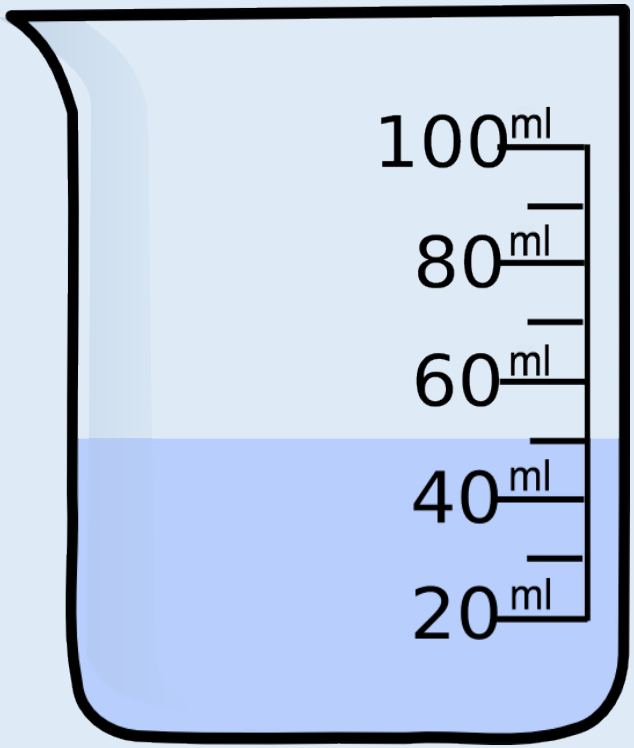
Estimate the amount of water in the container.



Explain why you have given your answer.

Reasoning 2 Millilitres

Estimate the amount of water in the container.



The water is between 40 ml and 60 ml.
It is approximately 50 ml.

Explain why you have given your answer.

Discuss Millilitres

Which container has the largest/smallest capacity?

Can we order them from largest to smallest?

Look at the scale on my cylinder, what do you notice?

Is this the same for this cylinder?

If we poor the liquid from this jar/glass into the cylinder, how much does each container hold?

Litres

2

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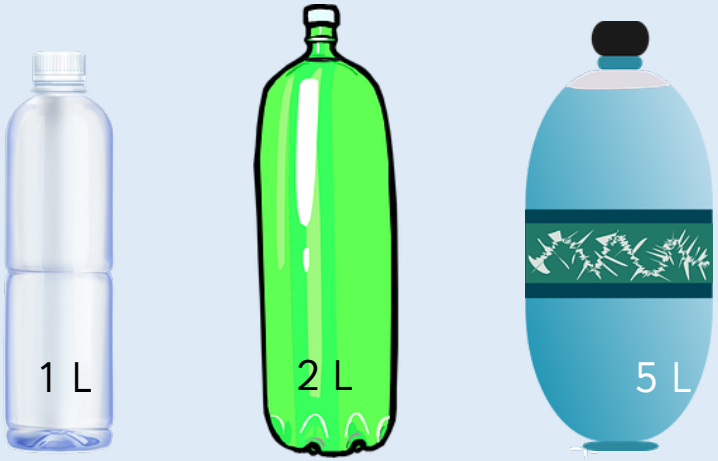
Activity 1 Millilitres

Look at a variety of different containers labelled in litres.



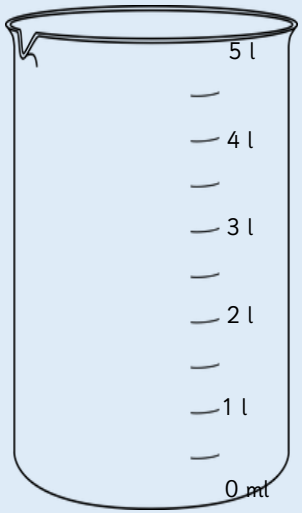
Can we measure these in ml as well?

What is the same about millilitres and litres?

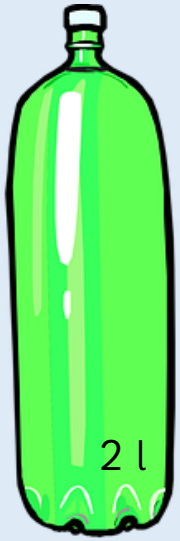
What is different about them?

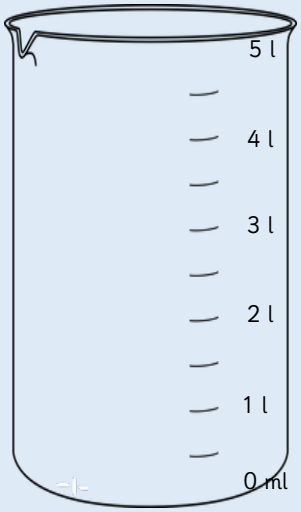
Activity 2 Litres

Show on the cylinder where the liquid would go to from each container.



The container's capacity is _____ l.



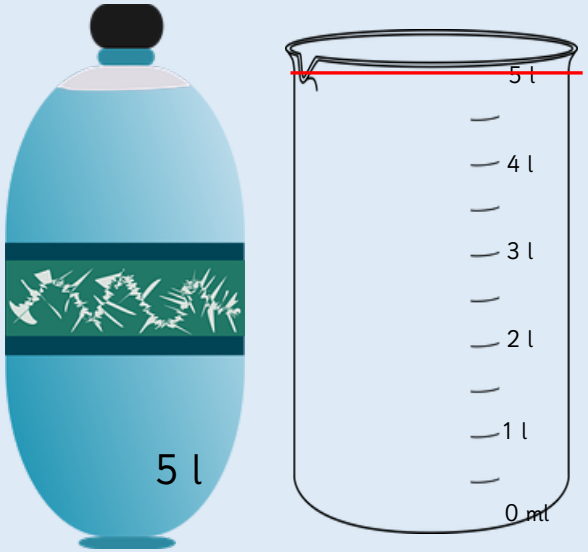


The container's capacity is _____ l.

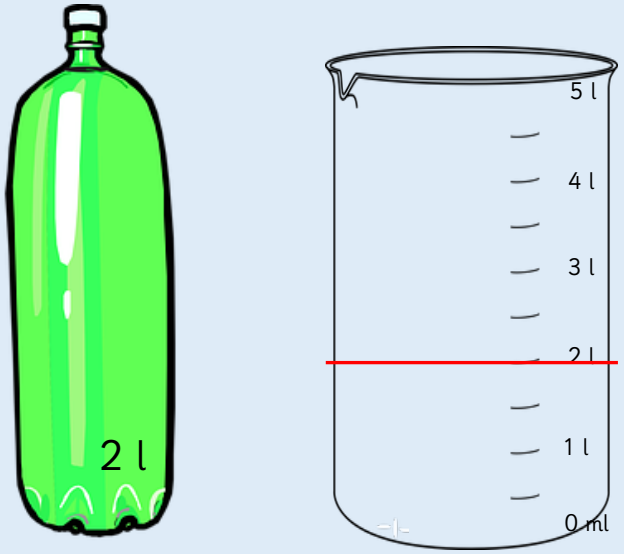
What if we poured 2 l of water in the cylinder, what would the volume in the cylinder be? What would the volume in the bottle be?

Activity 2 Litres

Show on the cylinder where the liquid would go to from each container.



The container's capacity is 5 l.



The container's capacity is 2 l.

What if we poured 2 l of water in the cylinder, what would the volume in the cylinder be? What would the volume in the bottle be?

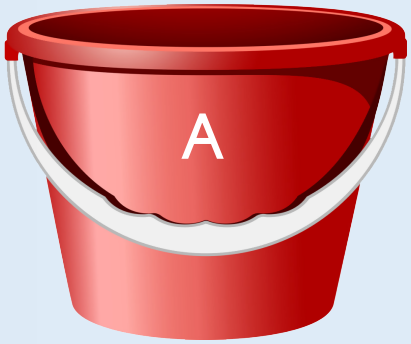
Activity 3 Litres

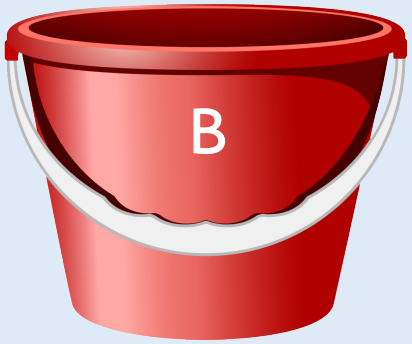
Use different containers.
Estimate the capacity of each one, then measure the capacity in litres.

Reasoning 1 Litres

Malachi puts 5 litres of water in Bucket A.
He then pours 4 litres from Bucket A into Bucket B.

Malachi





Which sentence is correct?

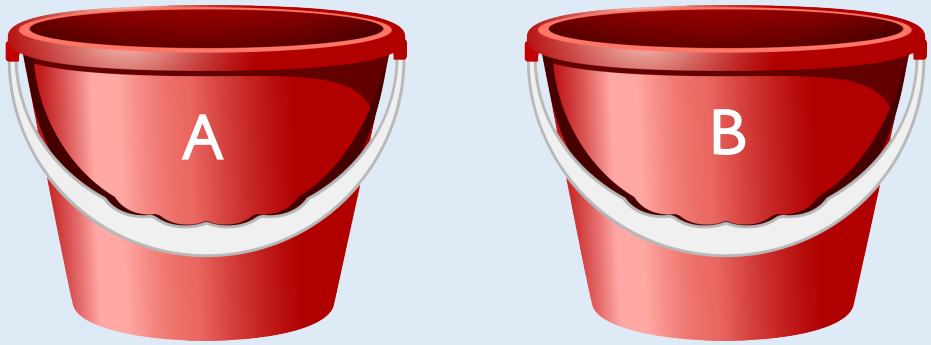
- There is more in bucket A.
- There is less in bucket B.
- There are equal amounts in each bucket

Explain why.

Reasoning 1 Litres

Malachi puts 5 litres of water in Bucket A.
He then pours 4 litres from Bucket A into Bucket B.

Malachi



There is less in Bucket A because there will be 1 litre in A and 4 litres in B.

Which sentence is correct?

- There is more in bucket A.
- There is less in bucket B.
- There are equal amounts in each bucket

Explain why.

Reasoning 2 Litres

Tia wants to measure 2 litres of water into a tub.
She only has a 6-litre and a 4-litre container.

Tia

How can she use both containers
to measure 2 litres?

Reasoning 2 Litres

Tia wants to measure 2 litres of water into a tub.
She only has a 6-litre and a 4-litre container.

Tia

How can she use both containers to measure 2 litres?

Tia could fill her 6-litre container and then empty 4 litres into the 3-litre container. She will be left with 2 litres.
6 L – 4 L = 2 L

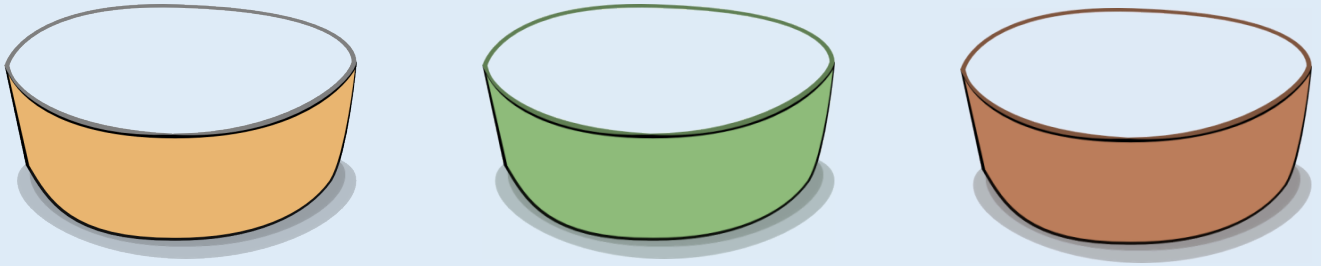
Reasoning 3 Litres

3 bowls each have more than 20 L of water in but less than 50 L.

The green bowl has 5 L more than the orange bowl.

The red bowl has 10 L more than the green bowl.

How much could each bowl have in?



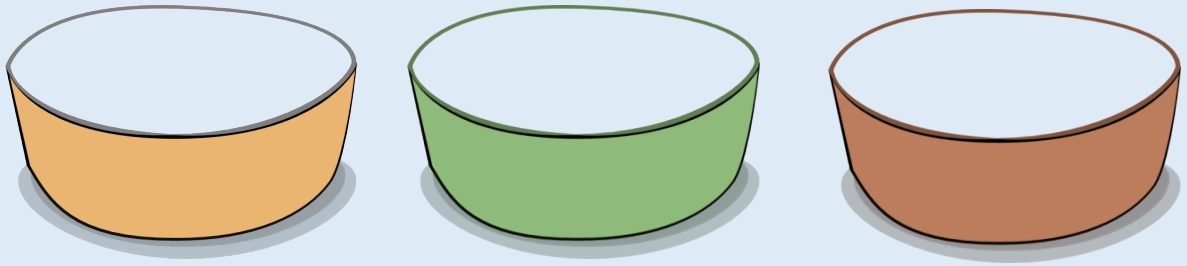
Reasoning 3 Litres

3 bowls each have more than 20 L of water in but less than 50 L.

The green bowl has 5 L more than the orange bowl.

The red bowl has 10 L more than the green bowl.

How much could each bowl have in?



The orange bowl could have between 20 L and 35 L.

The green bowl could have between 25 L and 40 L.

The red bowl could have between 35 L and 50 L.

Discuss Litres

Which is larger, 1 millilitre or 1 litre?

How do you measure ____ in litres or millitres? Why?

How many litres of water do you drink a day?

Show the children a litre container. How many litres of water do you think it would take to fill _____?

Temperature

2

Fluency Teaching Slides

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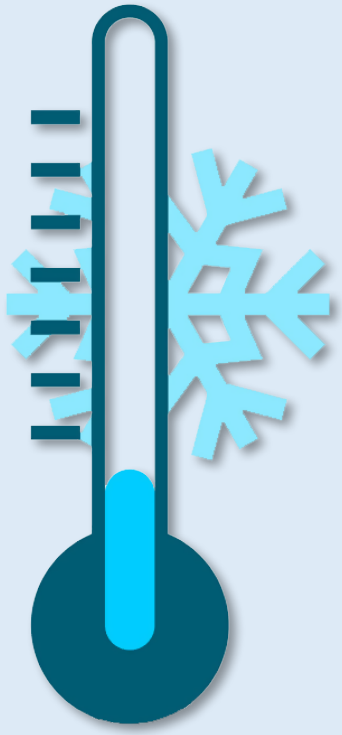
Activity 1 Temperature



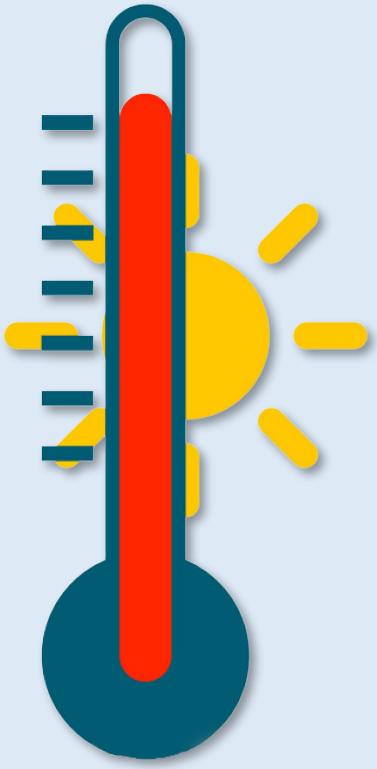
Take temperatures around your school.

What is the temperature of your classroom?

The playground?

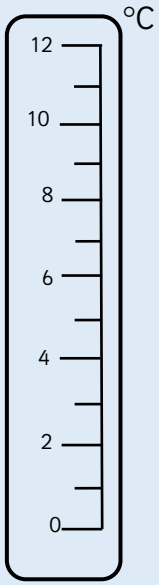
Is the classroom warmer or colder than the playground?

Can you work out the difference in temperatures between the playground and classroom?

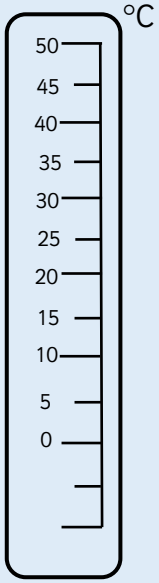


Activity 2 Temperature

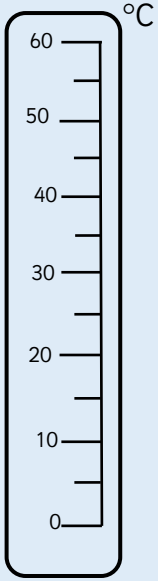
Complete the thermometers to show the temperatures.



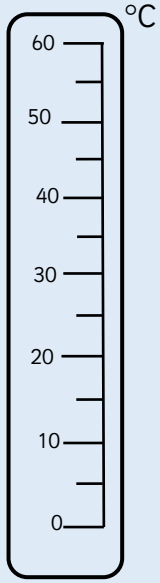
10°



25°



50°



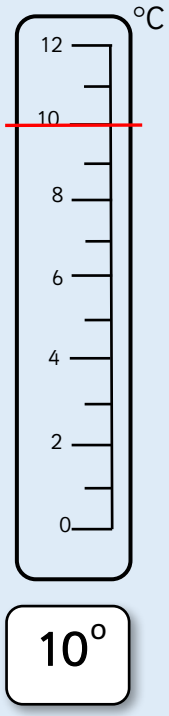
55°

?

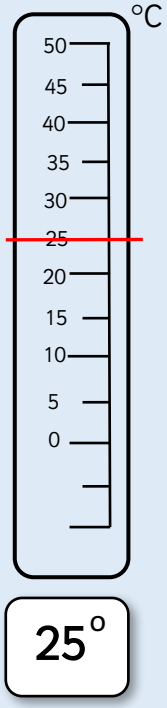
What is the scale going up in? How do you know?

Activity 2 Temperature

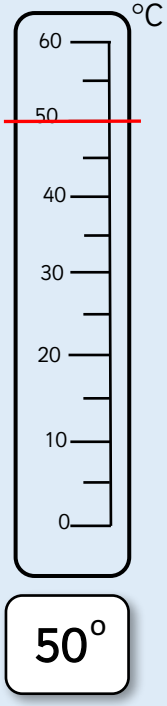
Complete the thermometers to show the temperatures.



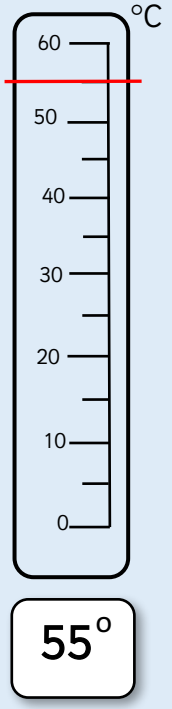
10°



25°



50°



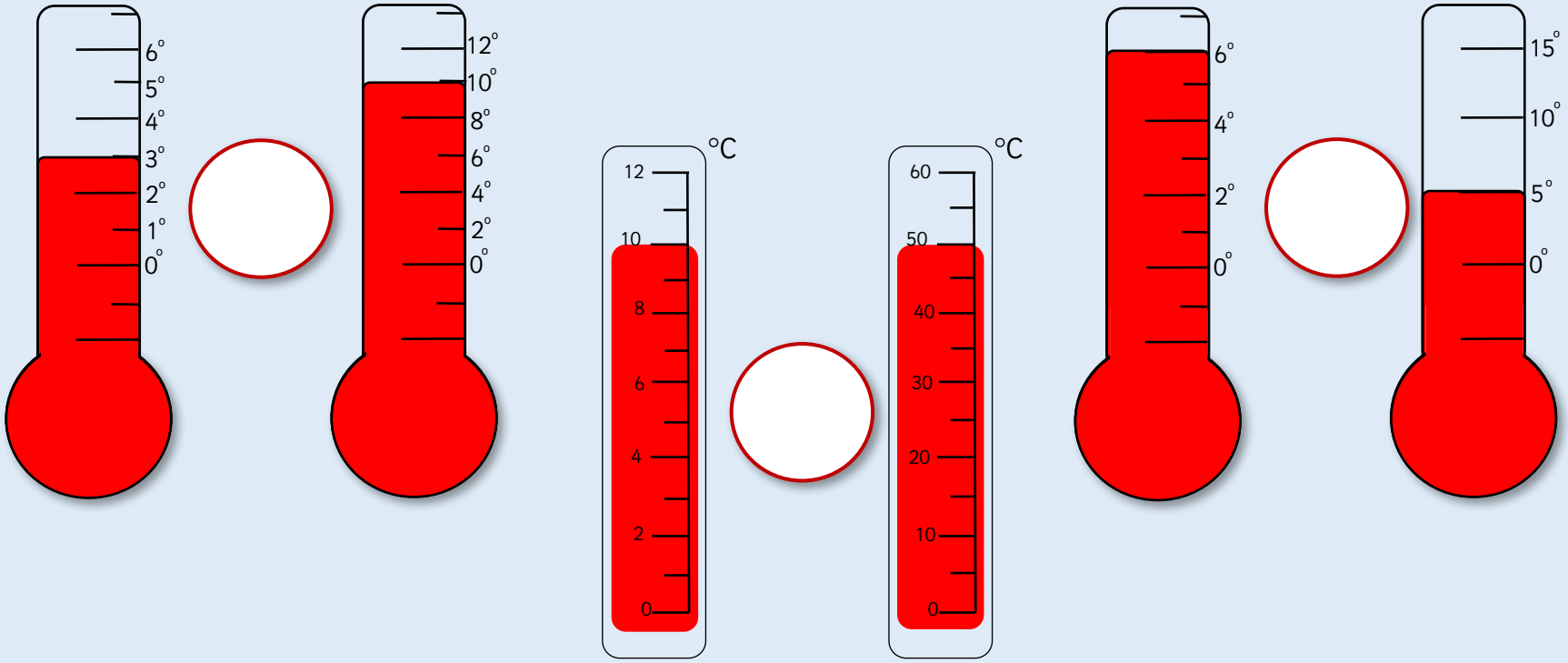
55°

?

What is the scale going up in? How do you know?

Activity 3 Temperature

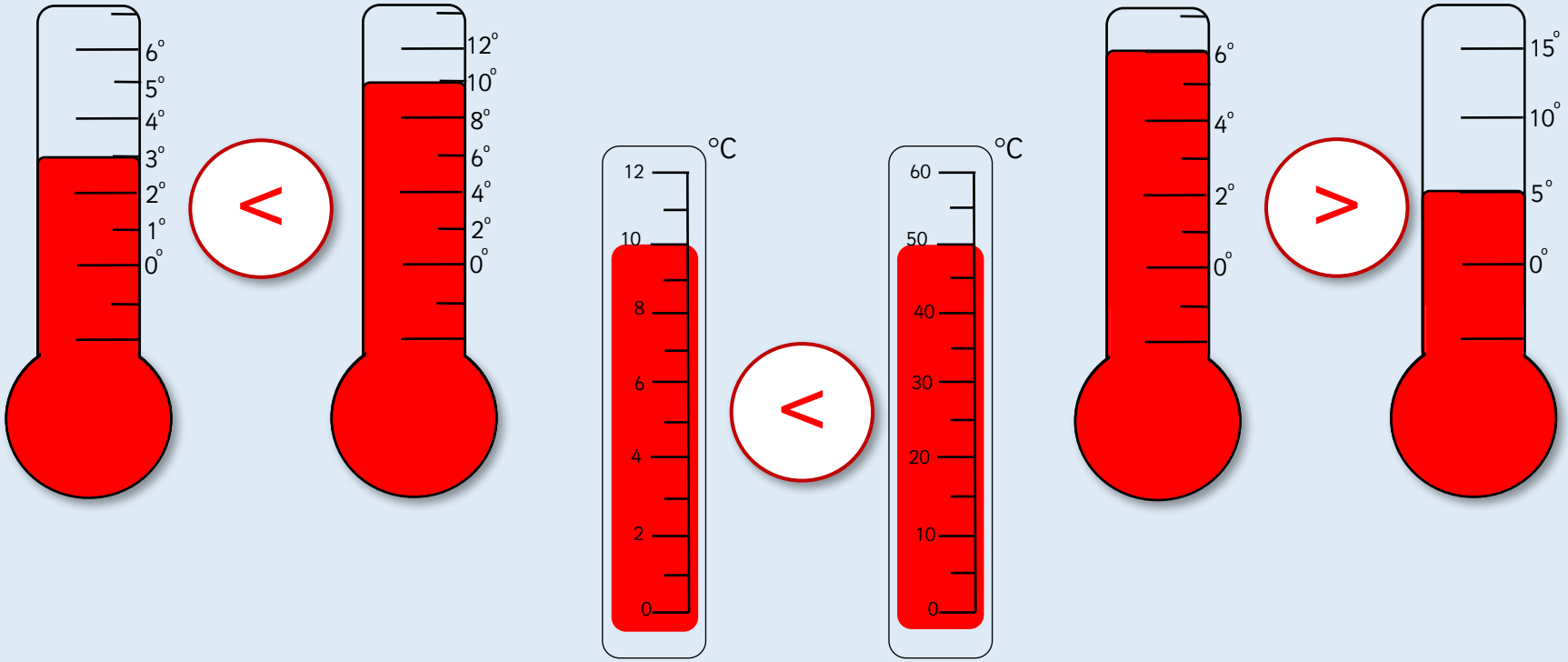
Compare the temperatures using comparison symbols >, < or =.



? If the temperature increases what happens to the number on the scale?

Activity 3 Temperature

Compare the temperatures using comparison symbols >, < or =.



Reasoning 1 Temperature

Esin took the temperature at 1:00 p.m. and again at 6 p.m.

There was a difference of 7°C.

What could the temperatures be?

Reasoning 1 Temperature

Esin took the temperature at 1:00 p.m. and again at 6 p.m.

There was a difference of 7°C.

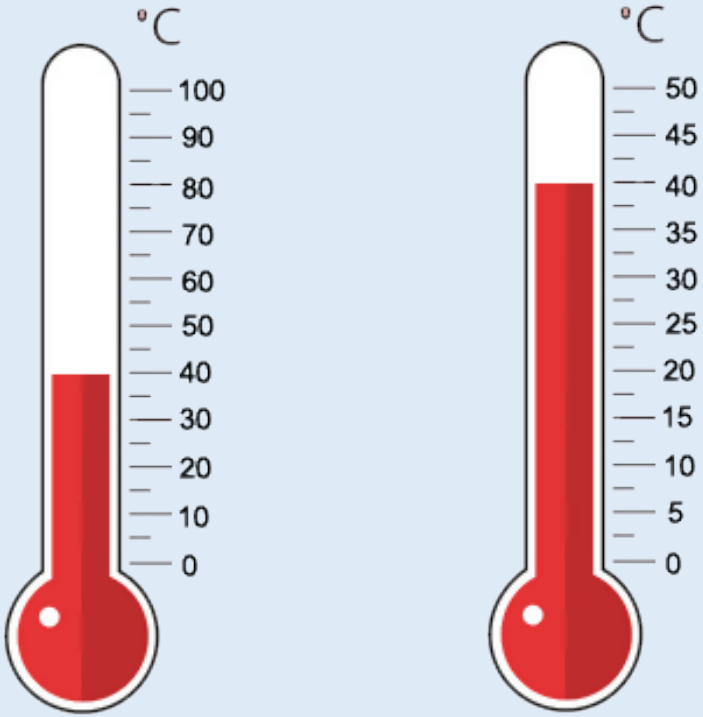
What could the temperatures be?

Children may give any temperatures that have a difference of 7.

Some children may realise that it is usually cooler in the evening and therefore make sure their 1:00 p.m. temperature is always warmer than the 6 p.m. temperature.

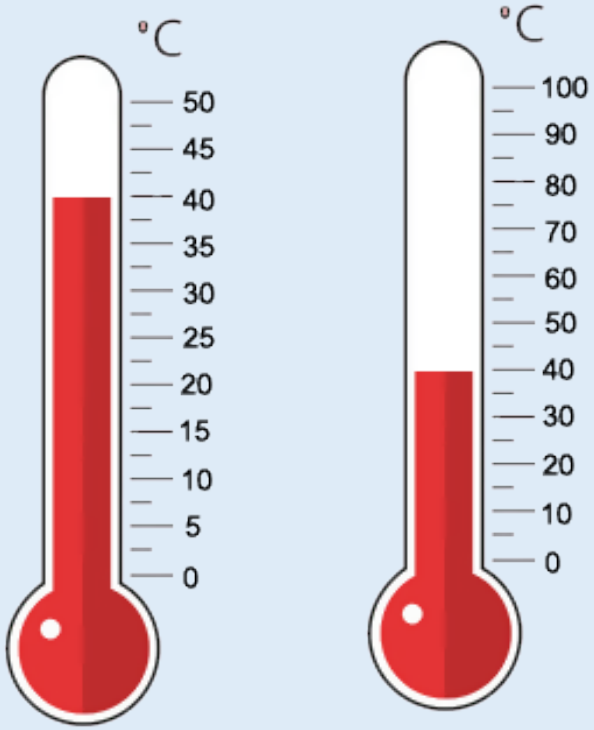
Reasoning 2 Temperature

What is the same and what is different about the thermometers/temperatures?



Reasoning 2 Temperature

What is the same and what is different about the thermometers / temperatures?



Both thermometers are showing 40°C.

The scale on the first thermometer counts up in 5°C. The scale on the second thermometer counts up in 10°C.

The second thermometer will be able to record higher temperatures.