

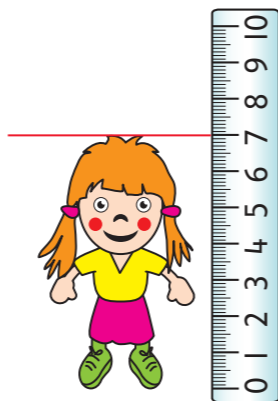
# Comparing and ordering measurements

## Learn

We measure length using units.

These are the short ways of writing units of measures.

centimetre → cm    kilogram → kg    gram → g  
metre → m    millilitre → ml    litre → l

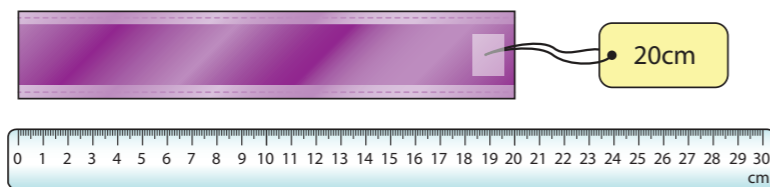


This toy is 7cm tall.

Measurements can be ordered and compared using  $<$ ,  $>$  or  $=$ .

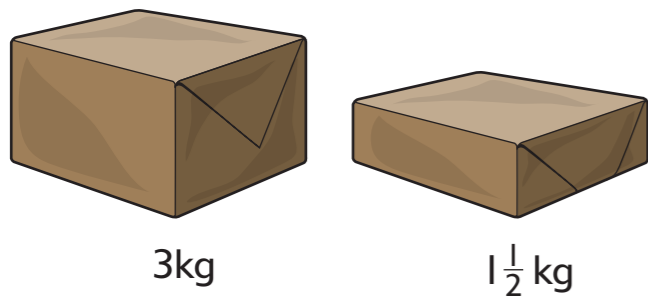
Decide which is longer.

$$30\text{cm} > 20\text{cm}$$



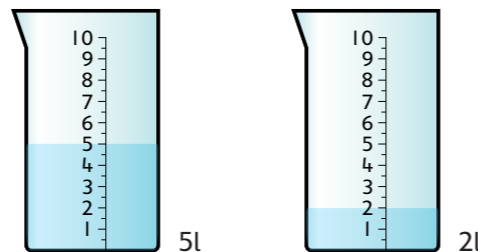
Decide which is lighter.

$$1\frac{1}{2}\text{kg} < 3\text{kg}$$



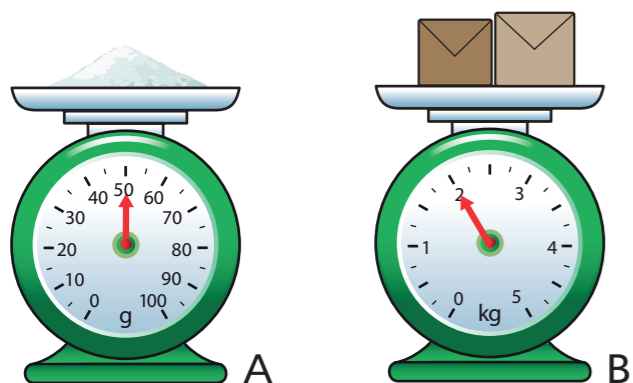
Decide which container contains more liquid.

$$5\text{l} > 2\text{l}$$



Scale A shows weighing in grams. The mass is 50g.

Scale B shows weighing in kilograms. The mass is 2kg.



### Tip

Always make sure that the measurements are in the same unit.

## Talk maths

Look at these three lengths.

50cm    90cm    40cm

Look at the tens numbers to find the largest. The order will be 90cm, 50cm and 40cm.



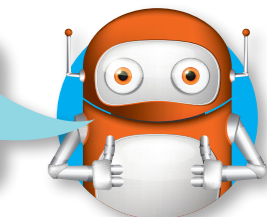
Start with the units. Are they all the same?

Discuss with a partner how you could order them from shortest to longest.

Do this again with these weights.

500g    950g    600g

Look at the hundred digit this time. The order is 500g, 600g and 950g.



They are all in grams.

Here are some measurements in litres.  $\frac{1}{2}$  litre    3 litres     $2\frac{1}{2}$  litres

## Activities



- Copy these measures and add  $<$  or  $>$  to show which is larger.
  - 20km ? 25km.
  - $1\frac{1}{2}$  litres ?  $\frac{1}{2}$  litres
- Now write these measures in order. Start with the smallest.
  - 55cm, 45cm, 48cm
  - 6kg, 5kg, 4kg
  - 3 litres, 4 litres,  $3\frac{1}{2}$  litres

## Problems



### Brain-teaser

Tania has a 30cm ruler. Sophy has a 25cm ruler. Who has the longer ruler?

### Brain-buster

Tom and Tania are using sticky tape on a birthday gift. Tom uses 15cm of tape. Tania uses 17cm of tape. Who uses more tape?

Cindy buys two bags of sweets that each weighs 40g. Sacha buys 60g of sweets. Who has the heavier sweets?

# Choosing and using standard units

## Learn

Mass is measured in kilograms and grams.  
Capacity is measured in litres and millilitres.  
Temperature is measured in degrees Celsius. We write  $^{\circ}\text{C}$ .  
Lengths are measured in metres and centimetres.

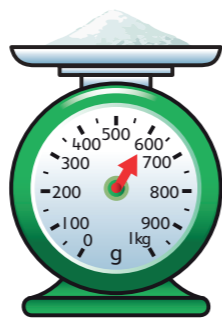
Before you measure something make an estimate and write it down.  
Use your eyes.

- How long does something look?
- How high is the water in the jug?
- How much do you think that is?
- Pick up the item to be weighed.
- How heavy does it feel to you?

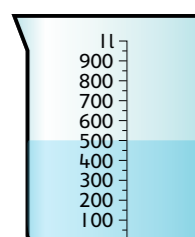
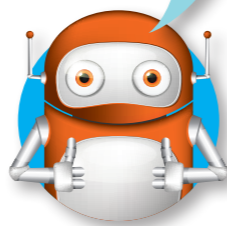
### Tip

Check the scale before making a reading.  
Decide what the reading is halfway between each number.

Look at these measuring tools.  
The scale is marked in 100g from 0g to 1kg.  
So it increases by 100g each time.  
What mass does this show?



600g, 500L,  
15cm,  $23^{\circ}$

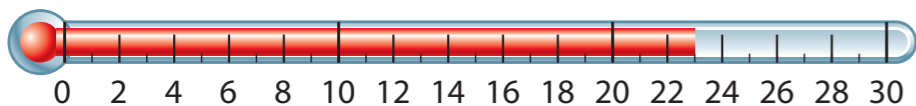


The scale is marked in 100ml.  
So it increases by 100ml each time.  
How much is in the jug?

The scale is marked in 1cm.  
So it increases by 1cm each time.  
What length does the arrow show?

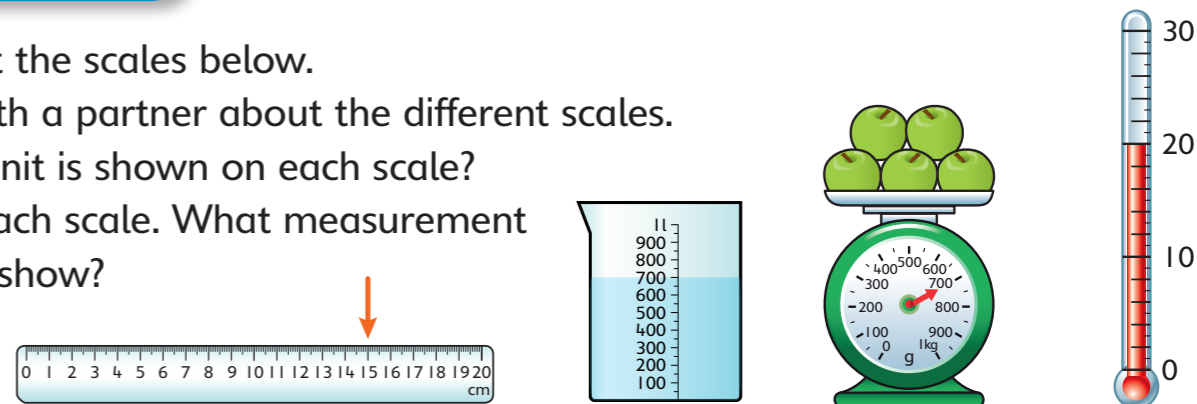


The scale is marked in  $2^{\circ}\text{C}$ . So it increases by  $2^{\circ}\text{C}$  each time.  
The little line in between marks the next  $1^{\circ}\text{C}$ . What temperature is shown?



## Talk maths

Look at the scales below.  
Talk with a partner about the different scales.  
What unit is shown on each scale?  
Read each scale. What measurement does it show?

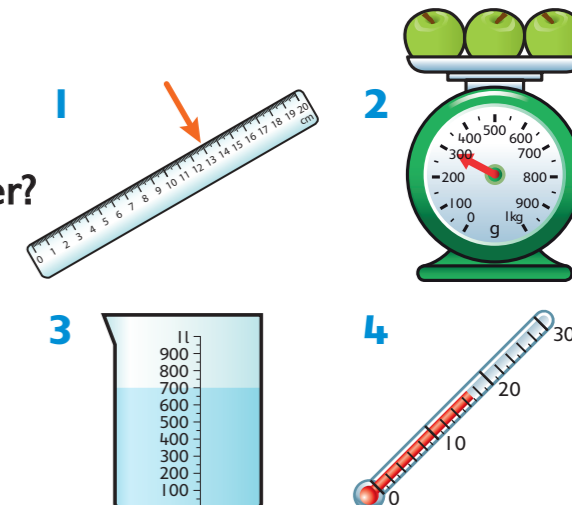


## Activities



Here are some measuring tools.

1. What is the length shown on the ruler?
2. What is the weight shown on the weighing scales?
3. How much is in the jug?
4. What is the temperature on the thermometer?

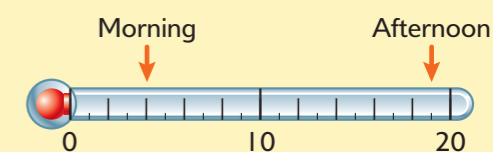


## Problems



### Brain-teaser

This thermometer shows the morning temperature and the afternoon temperature.  
How much warmer was it in the afternoon than in the morning?



### Brain-buster

Marc weighed out the same amount of butter, flour and sugar. The scale shows how heavy the butter was.  
What was the total weight of the butter, flour and sugar?



# Telling the time

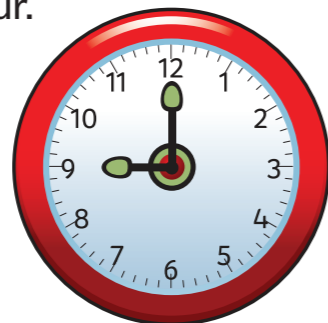
## Learn

The short hand points to the hour.

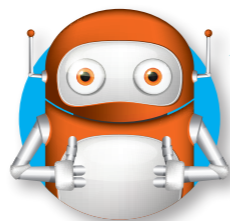
The long hand points to how many minutes.

This clock shows 9 hours and 0 minutes.

The time is 9 o'clock.



When the minute hand points to 12 it means o'clock.



Count the minutes in 5s.



Start at 12.

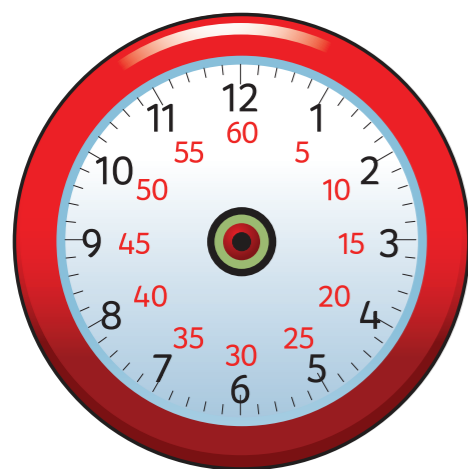
Count around the clock in 5s for the minutes.

You counted 60 minutes.

Up to 30 minutes we say 5 past, 10 past, quarter past, 20 past, 25 past the hour.

Then we say 25 to, 20 to, quarter to, 10 to and 5 to the next hour.

When the longer hand points to 6, that is 30 minutes past, or half past the hour.



### Tip

Times past the hour: look at the number that the hour hand has just passed.

Times to the hour: look at the number that the hour hand will get to next.

What time does this clock say? 7.40



## Talk maths

Look at this clock.

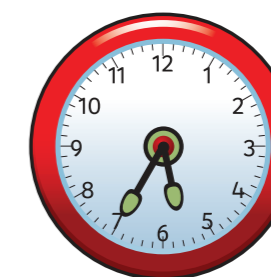
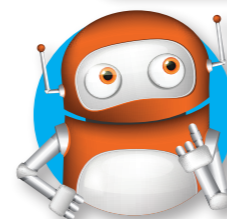
Talk with a partner.

Discuss what time you think this clock shows.

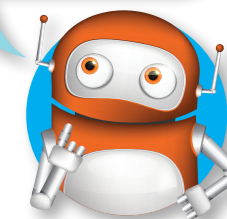
Can you explain why?



What time does this clock show?



How many minutes to 6 is it?



## Activities



Draw the hands on a clock face for each of these times.

1. Quarter past seven
2. Quarter to three
3. Five past two
4. Twenty past nine
5. Twenty-five to ten

## Problems



### Brain-teaser

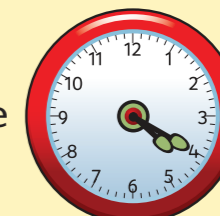
Jamie arrives at school at ten to nine.

Draw the hands on a clock face to show this time.

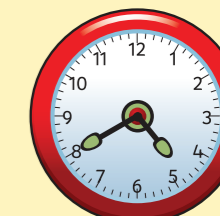
### Brain-buster

These clocks show what time Jan leaves home and what time she arrives at the library.

How many minutes does her journey take?



Leaves home



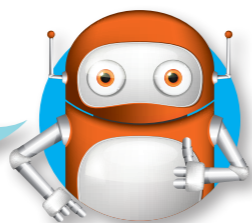
Arrives at library

# Comparing and sequencing time

## Learn

There are 7 days in a week.  
An hour has 60 minutes.

Remember these facts.



Count round the clock from 12 and back again in 5s. You should count to 60. That is the number of minutes in an hour.

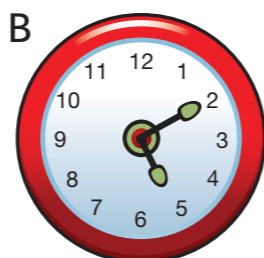
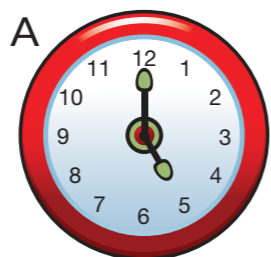


Look at these two clocks.

Clock A shows 5 o'clock.

Clock B shows 10 minutes past 5.

To work out the time difference between the two clocks count on in 5 minutes from 5 o'clock to 10 past 5. This gives a count of 5, then 10. So 10 minutes has passed.

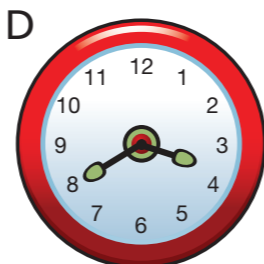
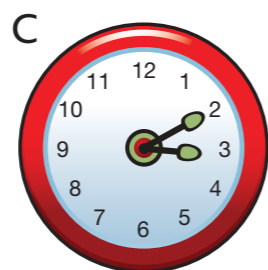


Look at these two clocks.

Clock C shows 10 minutes past 3.

Clock D shows 20 minutes to 4.

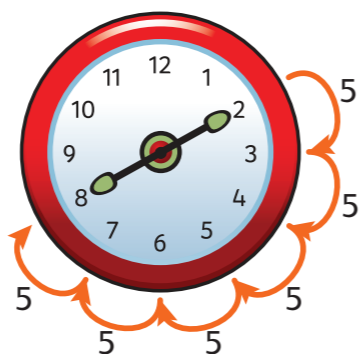
To find the difference in time between the two clocks count on in minutes from the 10 minutes past to the 20 minutes to time.



This clock face shows the position of the two minute hands shown on clocks C and D.

Count in 5s. 5, 10, 15, 20, 25, 30.

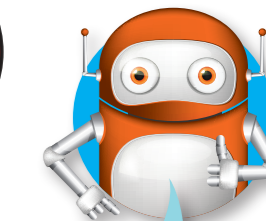
So the difference between the two times is 30 minutes.



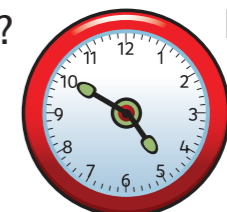
## Talk maths

Clock E shows 20 minutes past 8.  
How many minutes is it until 20 minutes to 9?

Clock F shows 10 minutes to 5.  
How many minutes is it until quarter past 5?  
10 minutes to 5 o'clock: 5, 10.  
5 o'clock to quarter past 5: 15, 20, 25.  
The time difference is 25 minutes.



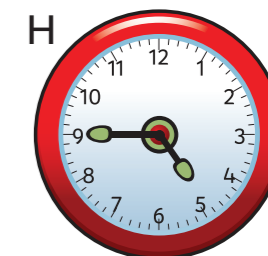
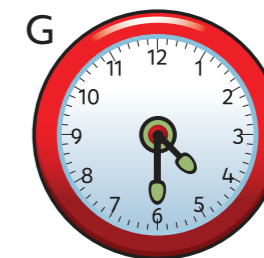
Point with your finger and count in 5s.



## Activities



- Which clock shows the earlier time?
- Which clock shows the later time?
- Which clock shows a half past time?
- Which clock shows a quarter to time?
- How many minutes are there from the clock G time to the clock H time?



## Problems



### Brain-teaser

Mark leaves for school at half past eight.  
He gets to school at five minutes to nine.  
How long does it take Mark to get to school?

### Brain-buster

Sum Mei does her maths homework from five past four to half past four.  
She then does her English homework from half past four until ten to five.  
Which homework takes longer? How many minutes longer?

## Learn

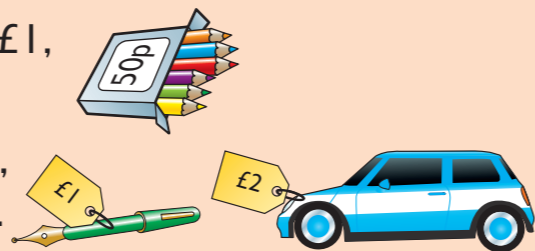
Here are the coins we use.



### ✓ Tip

To write an amount of money less than £1, write the p sign after the price, like this.

To write an amount of money in pounds, the £ sign goes before the price, like this.



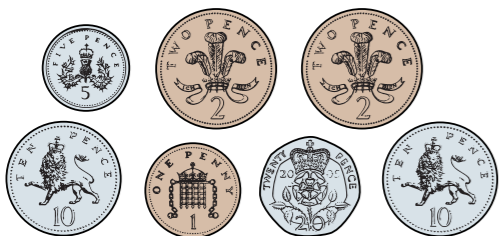
Different ways of making 50p.



This is a 50p coin.

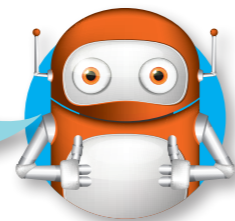


$20p + 20p + 10p$  makes 50p.



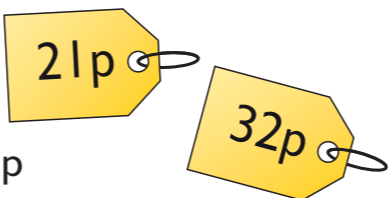
This is another way to make 50p.

Use coins to help you to find the total.



When finding the cost of two items begin by adding the tens then the ones. Try this.

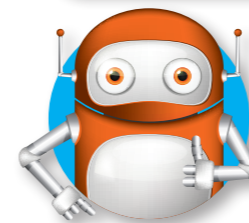
$$21p + 32p = 20p + 30p + 1p + 2p = 50p + 3p = 53p$$



## Talk maths

Talk with a partner about the easiest way to add these coins.

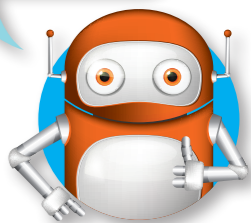
Always start with the largest value and end with the smallest... so 10p add 5p add 2p is 17p.



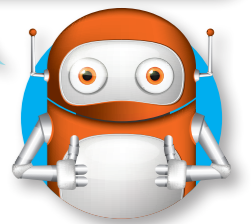
£2 and £1 is £3. Then add the pence coins. £3 add 50p add 20p is £3 and 70p.



Say the value of each coin. Then total them.



50p add 10p is 60p. Then add the smallest value coin. 60p add 5p is 65p.



## Activities



1. Write a coin number sentence that totals 15p.
2. Which coins could you use to make a total of 22p?
3. Write a coin number sentence that totals 45p.

## Problems



### Brain-teaser

Lara buys a key ring for 75p. Write a coin number sentence to total 75p. Use as few coins as possible.

### Brain-buster

Find three different ways of making £1 using coins. Write a number sentence for each one.

# Solving money problems

## Learn

Tom spends 13p. How much change does he get from 20p?

There are two ways to solve this.

Count up from 13 to 20 as if you are giving change:

13 to 15 is 2.

Then 15 to 20 is 5. So that is  $2 + 5$  is 7.

The change is 7p.

Or take 13 away from 20 by counting back.

You decide which method you like.

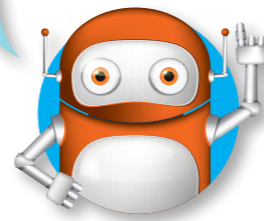


Now try these.

Tom buys a pen for 12p and a notebook for 5p.

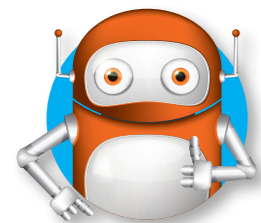
How much change will he have from 20p?

12p and 5p is 17p. Counting up to 20p is another 3p. So Tom has 3p change.



Sarah buys a comic for 32p and a pen for 16p.

How much change does she have from 50p?



One way to do this is to add 10p then 6p. So 32p add 10p is 42p and add 6p is 48p. So Sarah gets 2p change.

You can write this out as an addition sentence like this.

$$32 + 16 = 32 + 10 + 6 = 42 + 6 = 48$$

$$50 - 48 = 2.$$


So the change is 2p.


### ✓ Tip


To solve some money problems, you may want to work mentally. It can be helpful to add the tens digits first and then the ones.

## Talk maths

Count up to work out the change with a partner.

16p → 

13p → 

37p → 



## Activities



Write the total.

1.  $23p + 16p$

2.  $38p + 19p$

Write the change.

3.  $20p - 16p$

4.  $50p - 29p$

## Problems



### Brain-teaser

Pip spends 3p on a chew and 9p on a lolly. How much change does Pip receive from 20p?

### Brain-buster

Mina buys two notepads at 24p each and a pen for 47p. How much change does Mina receive from £1?