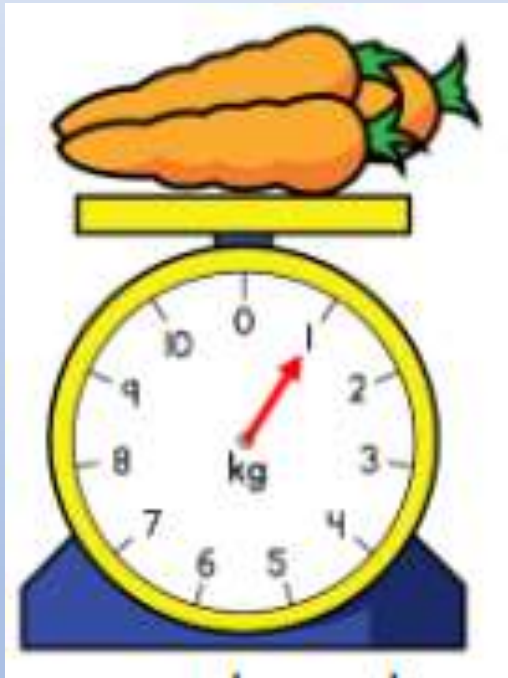


Thursday Maths

L.O. To measure mass in grams and kilograms.

(a great opportunity to do lots of baking!)



Mathematical Talk

How can we measure the mass of an object?

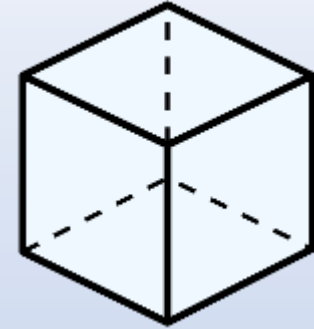
When would we use kilograms or grams to measure the mass of something?

What's the same, what's different about the scales?

How do we know what each interval is worth?

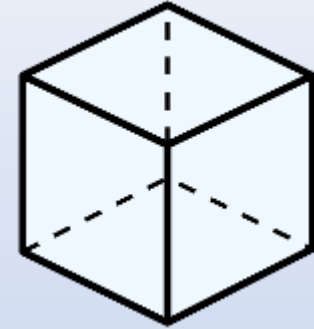
Flashback: How much can you remember?

- 1) What shapes are the faces of a square based pyramid?
- 2) How many acute angles measuring 30° are in a half turn?
- 3) A bus leaves the station at 13:00 and takes 2 hours and 40 minutes. What time does the journey end?
- 4) $\pounds 6 - \pounds 3 \text{ and } 25\text{p} = \pounds \square \text{ and } 75\text{p}$



Flashback: Answers

- 1) What shapes are the faces of a square based pyramid? **Square and triangle**



- 2) How many acute angles measuring 30° are in a half turn?

6

- 3) A bus leaves the station at 13:00 and takes 2 hours and 40 minutes. What time does the journey end?

15:40

- 4) $\pounds 6 - \pounds 3 \text{ and } 25\text{p} = \pounds$ **2** and 75p

Learn:

Watch this video to give you a good understanding about mass <https://vimeo.com/434622854>

Measuring mass comes in handy all the time. Whenever you bake or cook, you have to use scales to weigh the ingredients (although nowadays most scales are electronic).

If you didn't use the correct amount of flour in a cake, it would not taste nice!

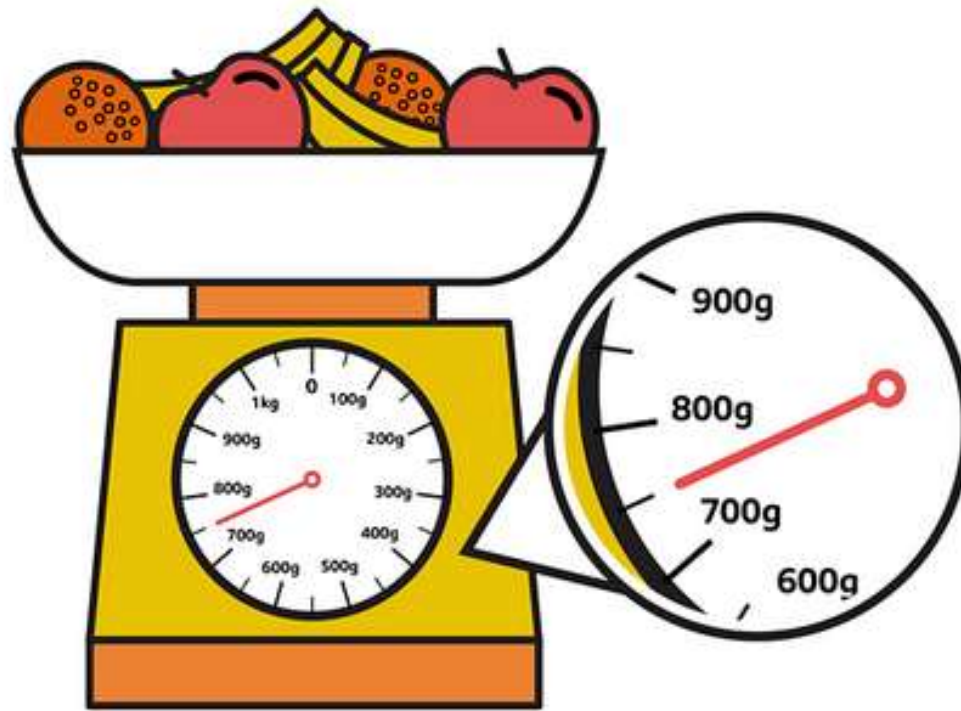
When measuring mass, you use **grams** and **kilograms**.

$$1000 \text{ g} = 1 \text{ kg}$$

When you're reading scales, you have to look really carefully at the intervals (divisions) between the numbers. This is so you can identify which numbers they represent.

The scales tell you whether you are reading grams or kilograms.

Take a look at the scales below.

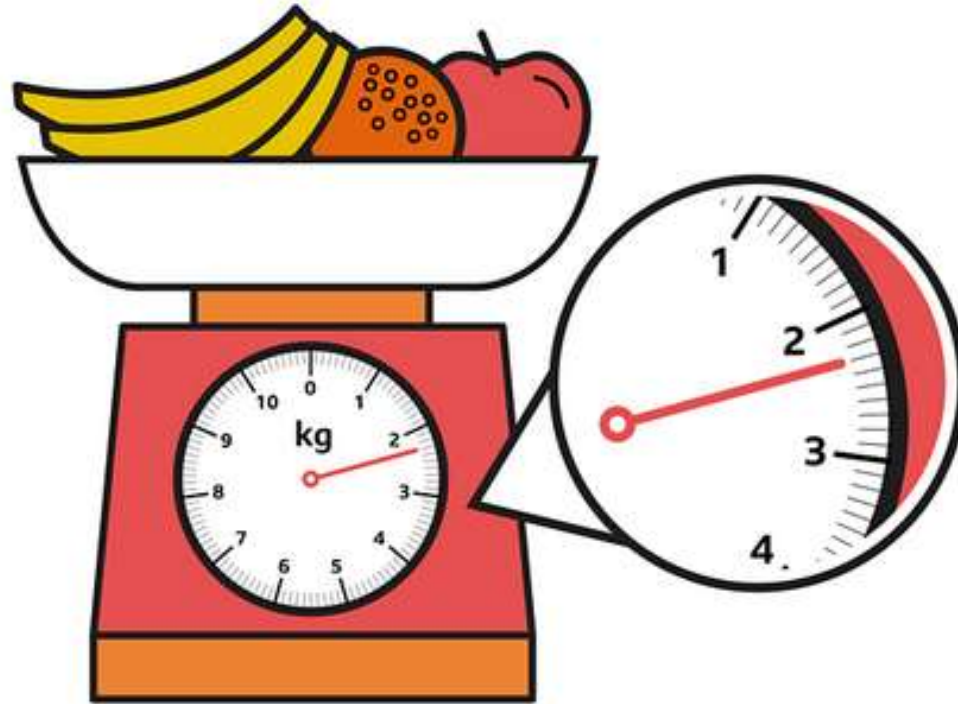


When reading scales, the first thing you have to do is look at the intervals. What are the divisions going up in?

The larger intervals go up in **hundreds**. You can also see there is a smaller interval in between each hundred. This must be worth **50 g** since it is the halfway point between hundreds.

The arrow on the dial is pointing at the smaller division between **700 g** and **800 g**, so the mass of the fruit must be **750 g**

This time, the scales are in kilograms.



The arrow is between **2 kg** and **3 kg**, but what do the intervals represent?

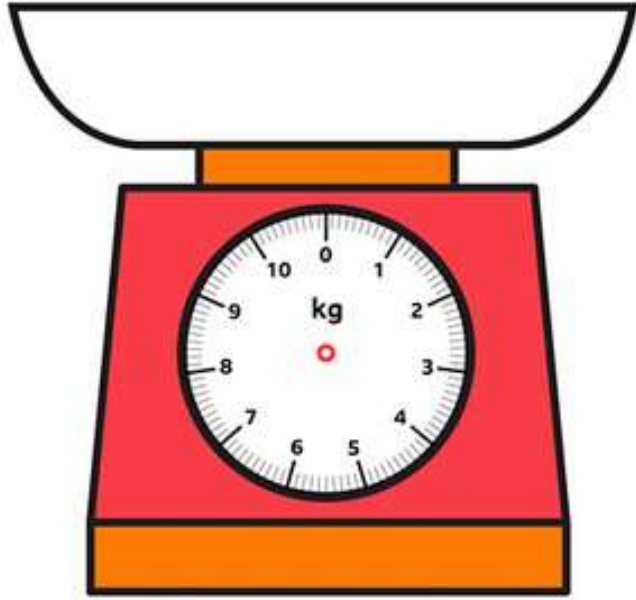
The kilograms are split up into 10 divisions, so each one must represent **100 g**, since 10 lots of 100 g is 1 kg.

The arrow is on the third division after **2 kg**, so the weight of the potatoes is **2kg 300g**

What would 2 kg 300 g be in just grams?

2 kg is the same as **2000 g**. So:

$$2000 \text{ g} + 300 \text{ g} = \underline{2300 \text{ g}}$$



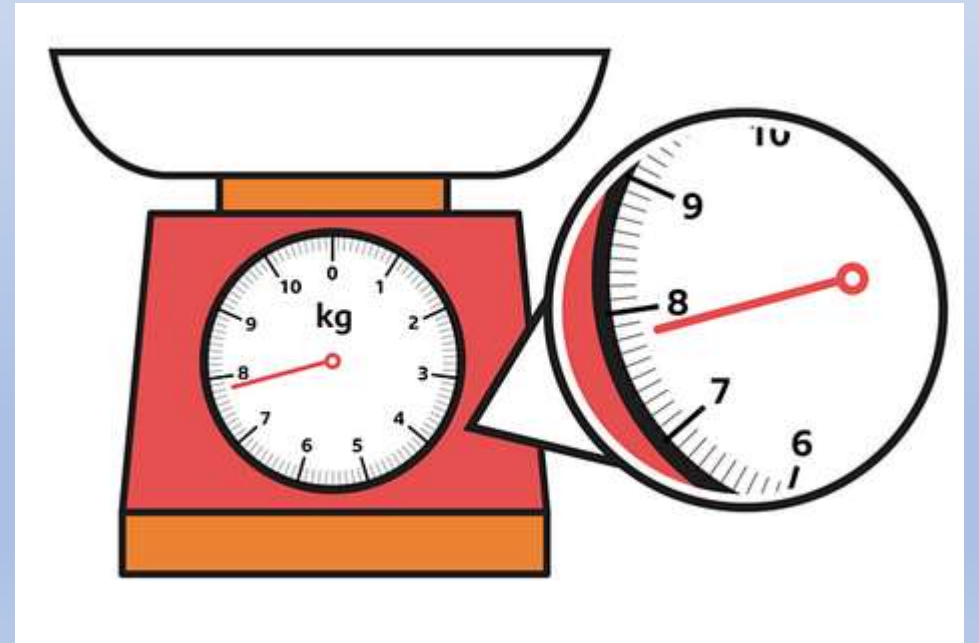
How would you draw an arrow to represent the mass of 7 kg and 800 g?

First thing to do is work out what the smaller divisions represent in-between the whole kilograms.

The kilograms are split up into 10 divisions, so each one must represent 100g.

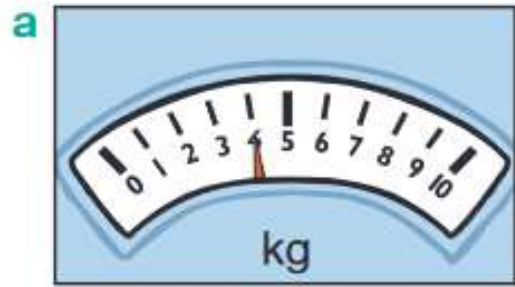
Now, you have to find the 8th division after **7kg** and draw an arrow to represent **7kg 800g**.

Like this:

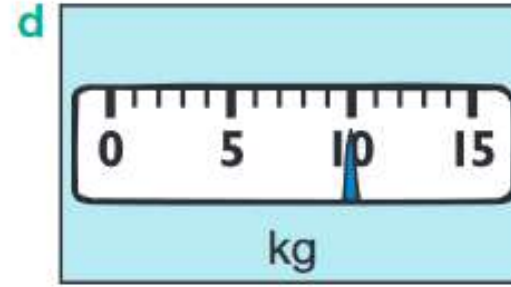


Your Task: Bake some yummy cakes and explore using the scales!

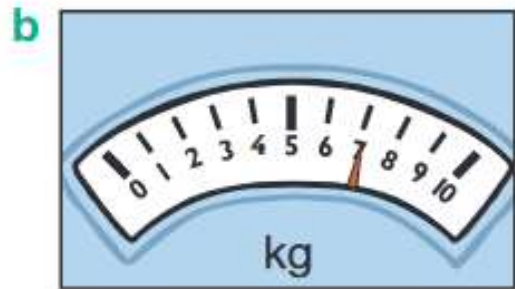
1 Write the mass shown on each of these.



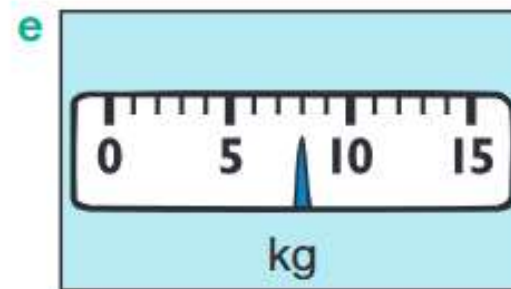
kg



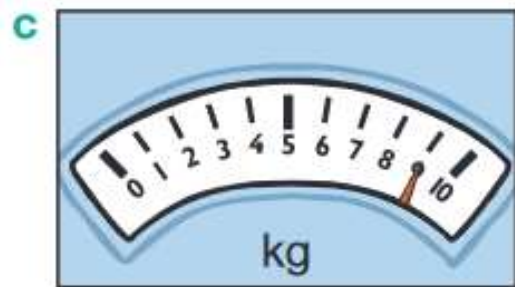
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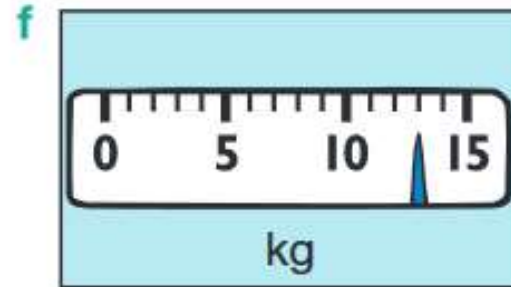
kg



kg



kg



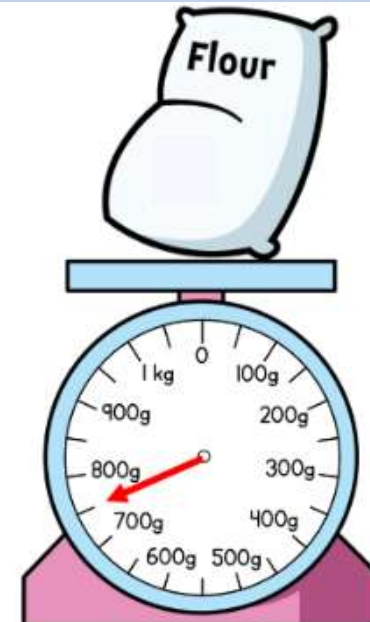
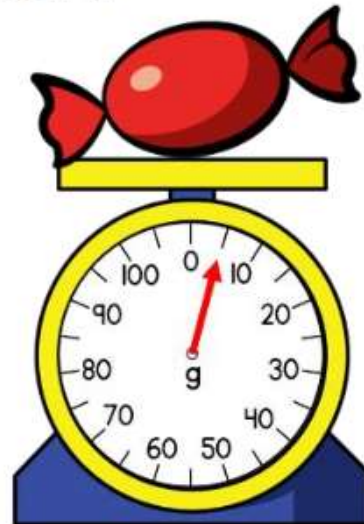
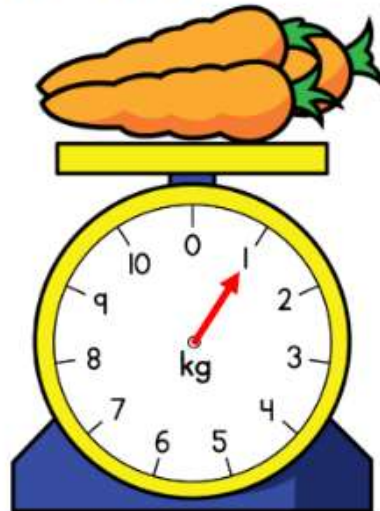
kg

2 Answer these questions.

- a How many 100 g weights balance 1 kg?
- b How many 500 g weights balance 1 kg?
- c How many 200 g weights balance 1 kg?
- d How many 250 g weights balance 1 kg?
- e How many 50 g weights balance 500 g?



Find the mass of each item.



Challenge:



Who do you agree with?
Explain why.



Amir

The potatoes weigh 13 kg



Jack

We don't know how much
the potatoes weigh because
the number is hidden.



Rosie

The potatoes weigh more
than half of 10 kg

Can you calculate the weight of the
potatoes? Explain how you did it.

The chocolate bar weighs 100 g.
How much does one muffin weigh?



How much does each side weigh?

Challenge Answers:

Amir is wrong – he has counted on 3 from 10 kg when he should have counted back 3 kg.

Jack is wrong because we can work out the scale by using the 10 kg and counting back. They weigh 7 kg.

Rosie is correct because half of 10 is 5 and the arrow is past where 5 kg would be.

The weight of the potatoes is 7 kg

Children could use a bar model to work this out. They would see the chocolate bar must weigh the same as two muffins so one muffin must weigh 50 g. Each side weighs 150 g.