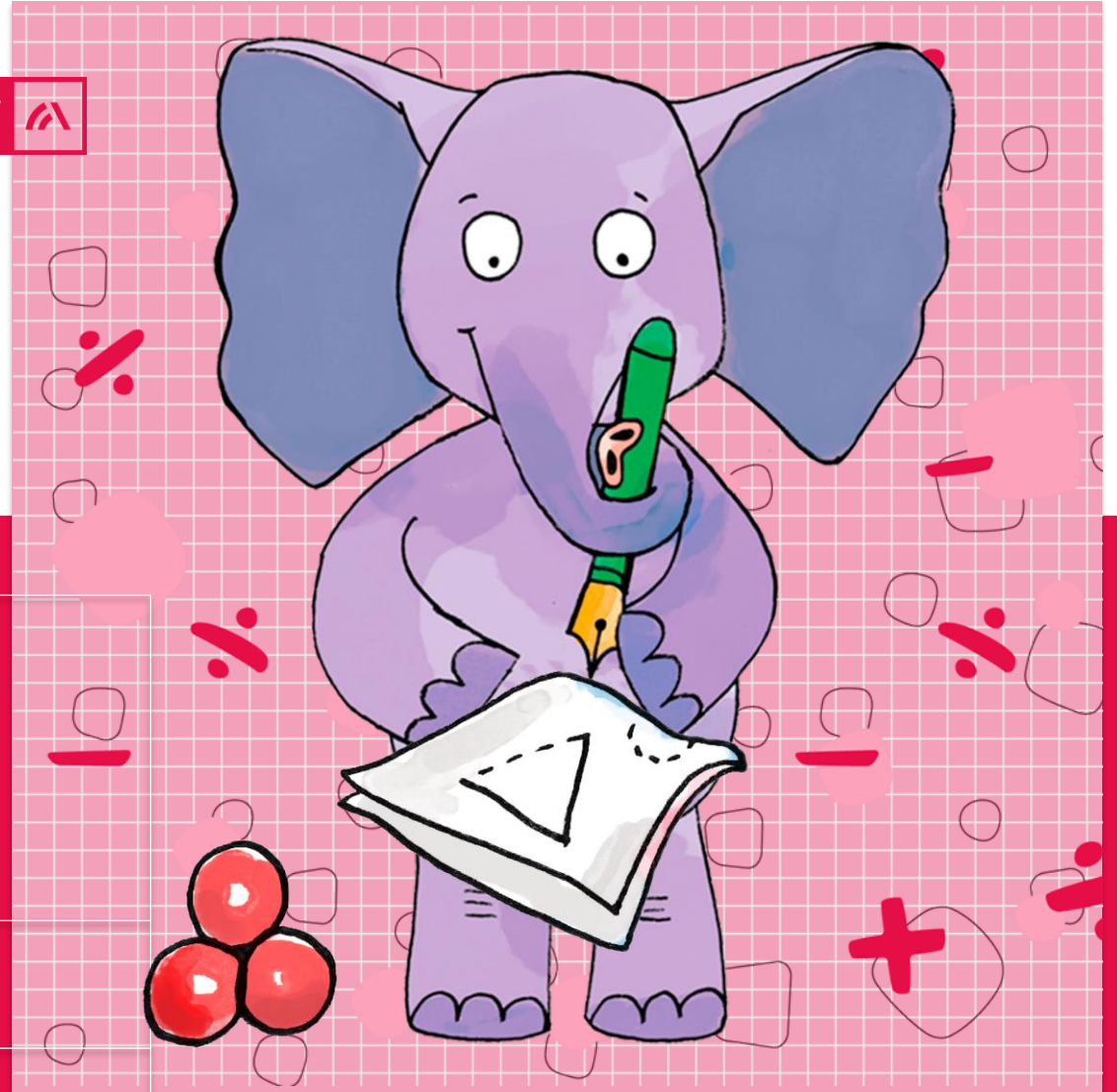


12.03.21

Big ?: Can I convert  
between grams, kilograms  
and tonnes?



**Key learning:** To convert between grams, kilograms and tonnes

**approximately**

**weight**

**mass**

**weighing scale**

**balance scale**

**gram (g)**

**kilogram (kg)**

**tonne**



# Metric units of mass



What units and equipment are used to measure and record mass?

When else might we weigh objects?

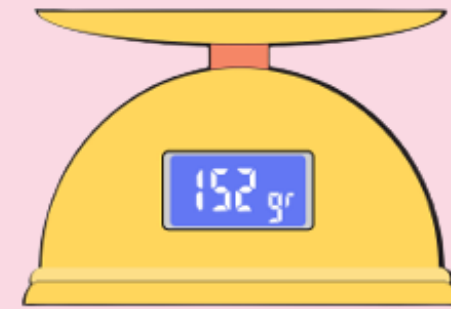
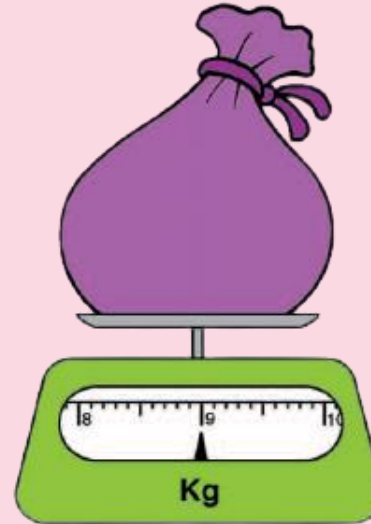
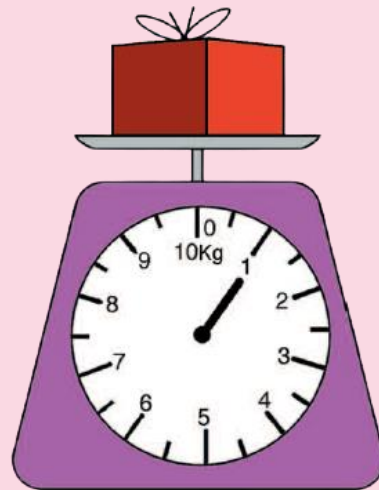
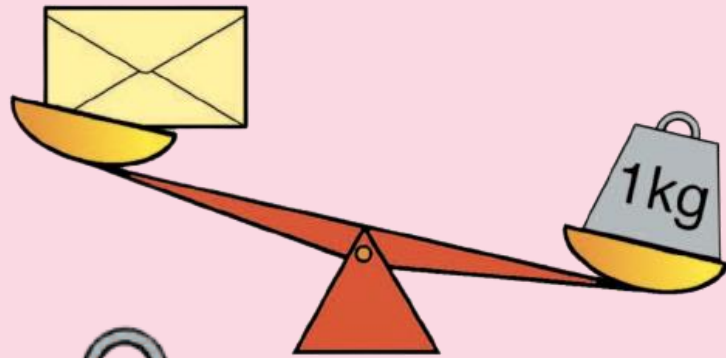
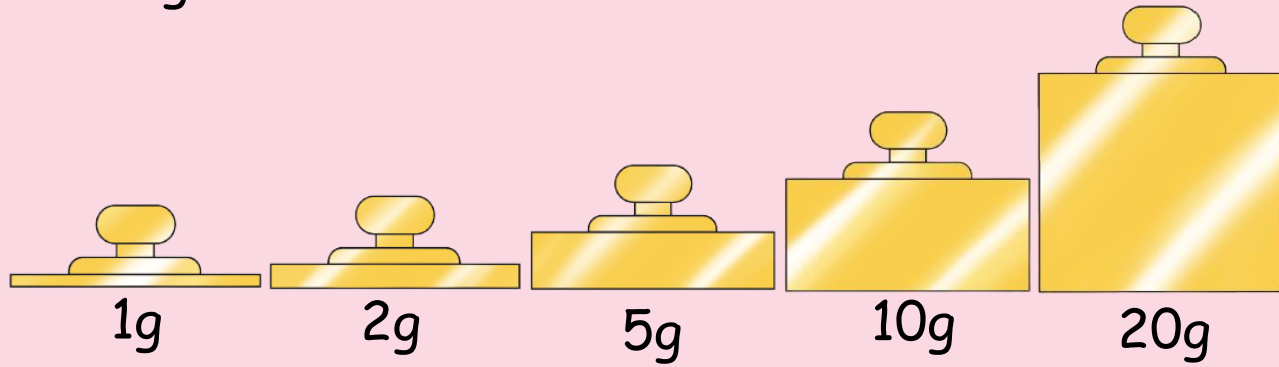


# Metric units of mass

Why do we use different units of mass?

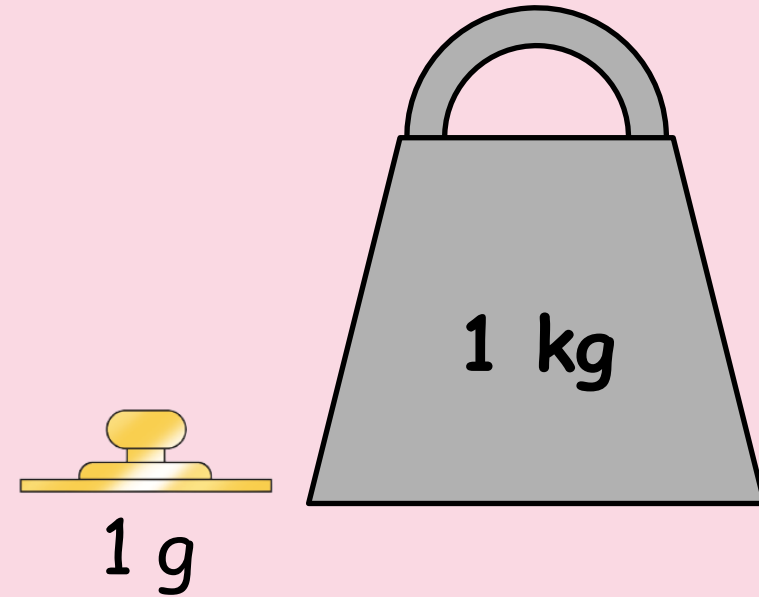
What is the same and what is different about these pieces of equipment?

When might each of these be used?



# Metric units of mass

- What are the relationships between different units of mass?
- How many of the smaller masses weigh the same as the larger mass?



1 kilogram =  grams

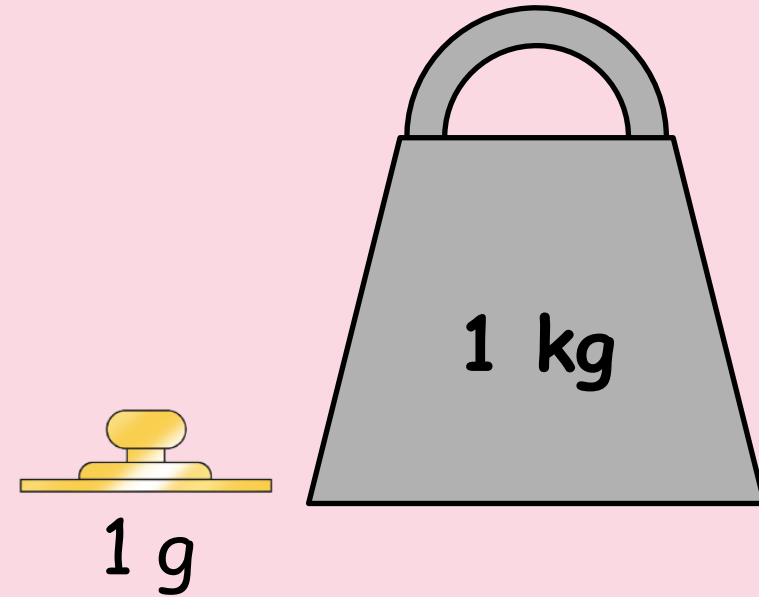
1 kg =  g

Move the red boxes to reveal content.



# Metric units of mass

- What are the relationships between different units of mass?
- How many of the smaller masses weigh the same as the larger mass?



1 kilogram = 1,000 grams  
1 kg = 1,000 g

Move the red boxes  
to reveal content.



# Metric units of mass

How could you record the total mass?



$$1\frac{1}{2}$$



# Metric units of mass

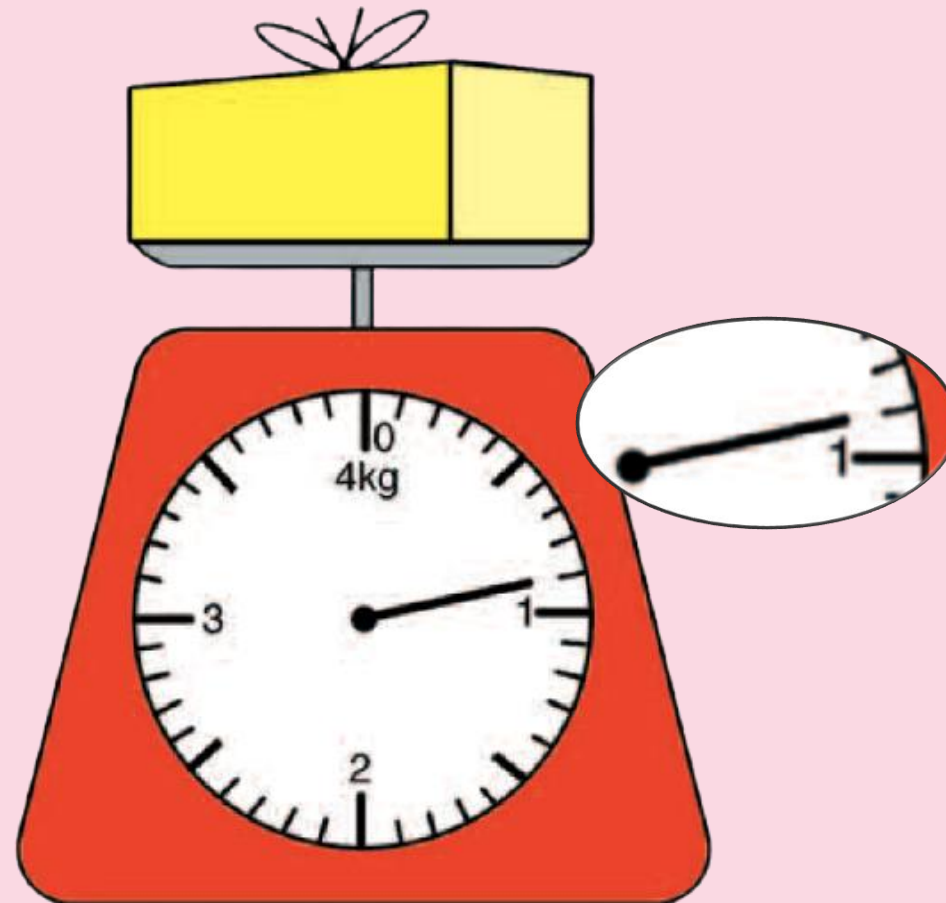
How could you record the total mass?





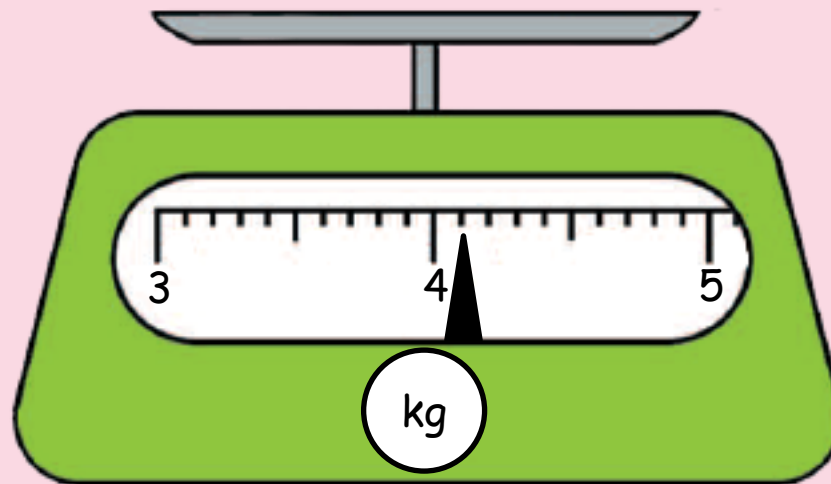
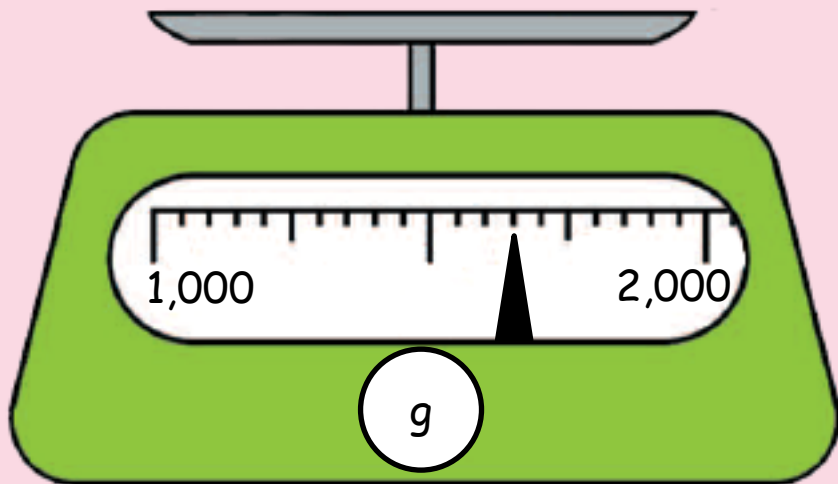
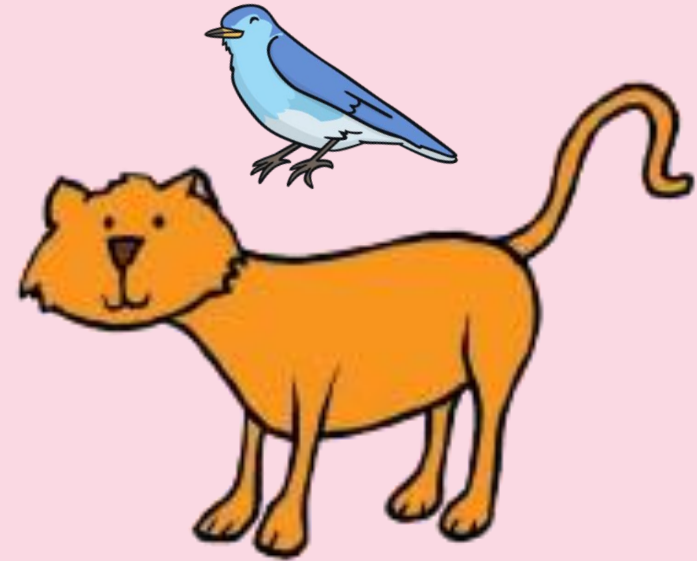
# Metric units of mass

What do you need to remember when reading scales?



# Reading scales and converting units

Place each animal on the correct scale.  
What do each of the animals weight?  
Record them in different ways.



# Reading scales and converting units

Move the red box to reveal content.

Estimate each mass, and think of other items with a similar mass.

How could you record each mass?



An Olympic gold medal



The barbell lifted for the weightlifting world record



A quadruple rowing boat (minimum mass allowed, without rowers)



A cycling track bike (minimum mass allowed, without rider)

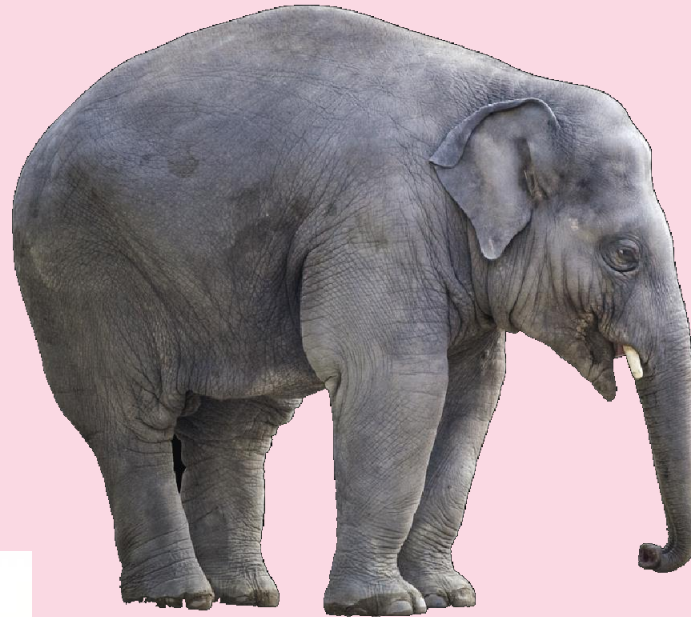


Talk Task



# Converting between grams, kilograms and tonnes

- Could you estimate the mass of these things?
- What unit of measure would you use?



# Converting between grams, kilograms and tonnes

1 tonne =  kilograms

1 t =  g

Move the red boxes to reveal content.



What else might you weigh in tonnes?



# Converting between grams, kilograms and tonnes

1 tonne = 1,000 kilograms

1 t = 1,000 g

Move the red boxes to reveal content.



What else might you weigh in tonnes?



# Converting between grams, kilograms and tonnes

The school bus weighs 5,500 kg when no children are on it. A bridge near the Olympic stadium has a limit of 7.5 tonnes. Can the bus safely go over the bridge?



# Converting between grams, kilograms and tonnes



An empty lorry weighs 5.2 tonnes. It picks up 2,200 kg of bricks for the Olympic stadium building. Can the lorry safely cross the bridge?





**Key learning:** To convert between grams, kilograms and tonnes

## Converting units of mass

Use conversion to help you to fill in the missing parts of the form for materials needed.

Material required	Mass of material (kg)	Mass of material (t)	Quantity needed	Total mass (with units)
Steel girders (per rod)	1,100		800	
Concrete blocks (per 1 m <sup>3</sup> )		2.4	12,000	
Sand (per bag)	50		18	
Wooden poles (per box)		3.34	8	
Floodlight masts (per mast)		3.8		15.2 tonnes
Seats (per seat)	1.2		50,000	



# Celebrating success and addressing misconceptions



Consider real-life equivalencies for the masses encountered today.

- An Olympic Gold medal is about the same mass as ...
- A cubic metre of concrete is about the same mass as ...

Move the red boxes to reveal content.



# Celebrating success and addressing misconceptions



Consider real-life equivalencies for the masses encountered today.

- An Olympic Gold medal is about the same mass as ... a bag of pasta.
- A cubic metre of concrete is about the same mass as ... a car.

Move the red boxes to reveal content.

