Date	12.2.20
Subject/s	Maths
Learning Objective	To read scales

	SA	TA

Success Criteria	I can find the difference		
	I can divide by how many "gaps" there are		
	I can add to work out the intervals		
Support	Independent Adult Support ( ) Group Work

Pre-task:

Label the intervals
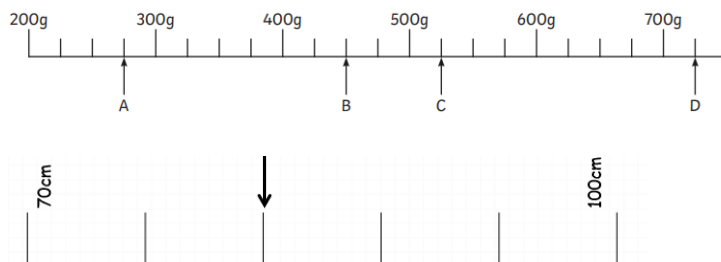
Question 1: A = 275g   B = 450g   C = 525g D = 725g
Question 2: 82cm

Teacher led.

In order to read scales, you need to be able to work out the terms in a sequence.
Let's look at some examples.

In this sequence, I can see that the start number is 40 and the end number is 50. That is a difference of 10.

40 — — — — — — — — — — 50

Next, I need to count how many steps are in the sequence. I can see that there are 10 steps in this sequence.

40 — — — — — — — — — — 50

Therefore, I need to do 10 ÷ 10 = 1
This tells me that the terms in the sequence count on 1 each time. I can now complete the sequence

40 41 42 43 44 45 46 47 48 49 50

Here is another sequence. This time the difference is still 50 − 40 = 10, but there are 5 steps.

40 — — — — 50

10 ÷ 5 = 2.
I know I need to count in 2s to complete the sequence

40 42 44 46 48 50

Here is another sequence. This time the difference is still 50 − 40 = 10, but there are 2 steps.

40 — 50

10 ÷ 2 = 5
I know I need to count in 5s to complete the sequence

40 45 50

Here is another sequence. This time the difference is still 50 − 40 = 10, but there are 4 steps.

40 — — — 50

10 ÷ 4 = 2.5
I know I need to count in 2.55s to complete the sequence

40 42.5 45 47.5 50

So, I know that to find the missing numbers in a sequence, I find the difference between the first and last number, then divide by how many steps between them.
Now let's try applying this to scales.
Scales are used for measuring. You might see them on weighing scales, measuring jugs, rulers or other things.
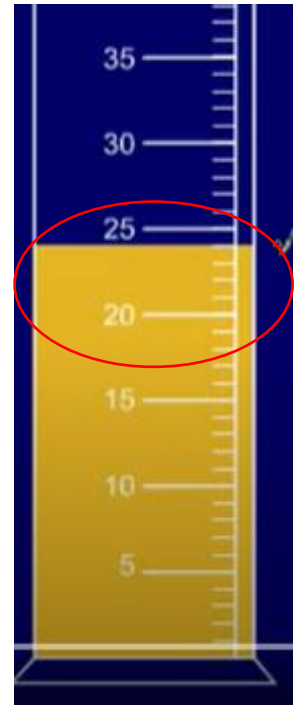
Look at this measuring cylinder.
To read the scale, I am going to look at the two numbers which Liquid is between. I can see that it is between 20 and 25.
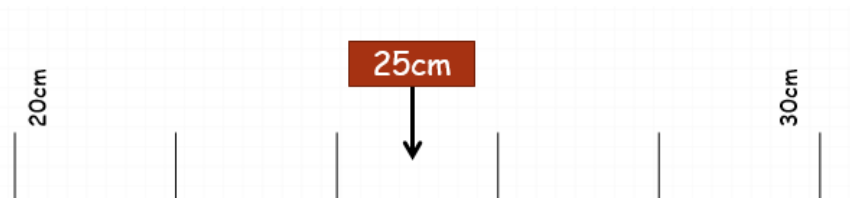25 – 20 = 5
Now I need to look at how many intervals are between them – I can see 5. That means I now need to do 5 ÷ 5 = 1
The scale is going up in 1s.
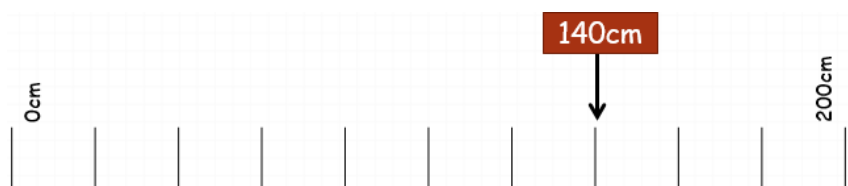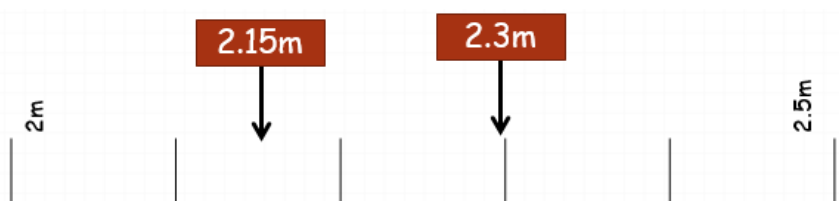This scale is showing 24.

Here is another scale:

25cm

20cm   30cm

- ❏ There are 5 gaps.
- ❏ The difference between 30cm and 20cm = 10cm
- ❏ 10cm / 5 = 2cm
- ❏ Each interval or line goes up by 2cm

And another:

140cm

0cm   200cm

- ❏ There are 10 gaps.
- ❏ 200cm / 10 = 20cm
- ❏ Each interval or line goes up by 20cm

2.15m   2.3m

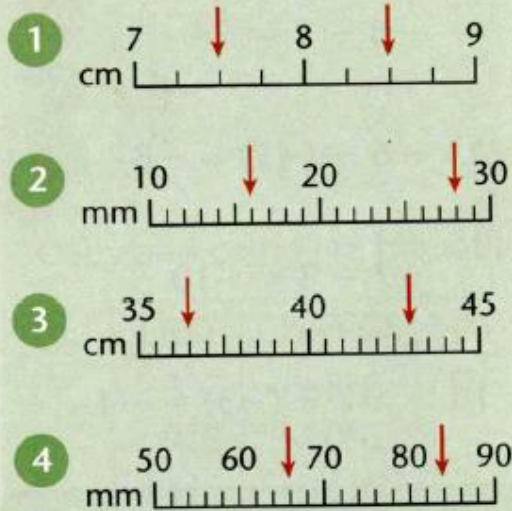2m   2.5m

Now look at this one:

- ❏ There are 5 gaps.
- ❏ The difference between 2m and 2.5m = 0.5m
- ❏ 0.5m / 5 = 0.1m
- ❏ Each interval or line goes up by 0.1m

Fluency

A

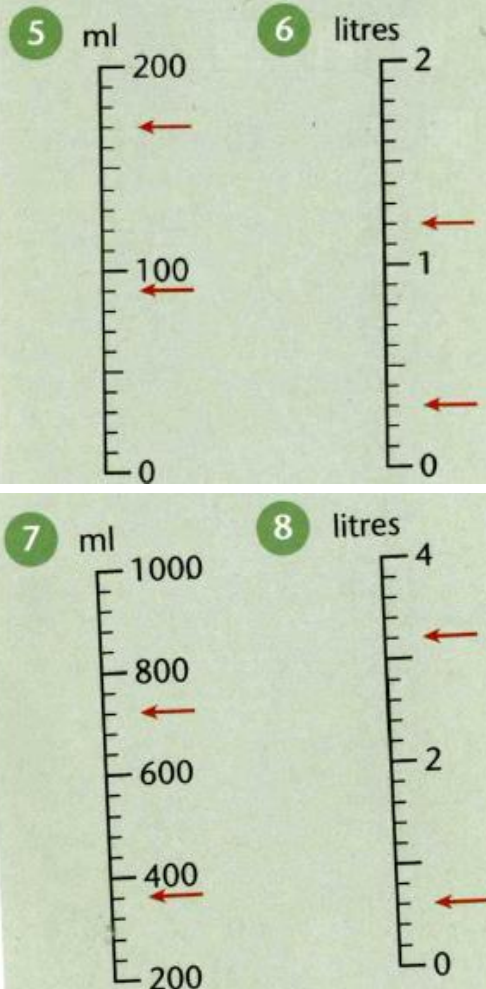Give the measurement shown by each arrow as:

a) mm   b) cm.

1 7   8   9   cm

2 10   20   30   mm

3 35   40   45   cm

4 50   60   70   80   90   mm

Give the measurement shown by each arrow as:

a) ml   b) litres.

5 ml   200   100   0

6 litres   2   1   0

7 ml   1000   800   600   400   200

8 litres   4   2   0

B

Give the measurement shown by each arrow as:

a) grams   b) kg.

1 g   300   250

2 g   120   100   80

3 kg   23   24   25

4 kg   5   6   7
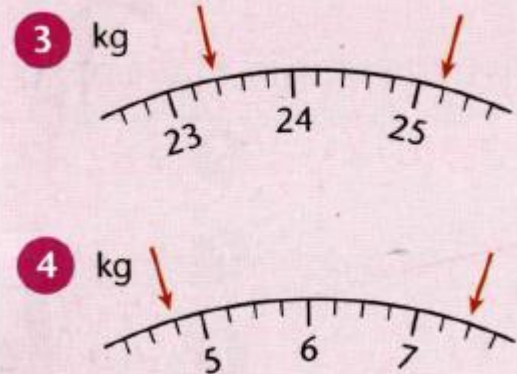
Give the measurement shown by each arrow as:

a) cm   b) metres.

5 cm   80   90

6 m   0·6   0·7   0·8

7 cm   11   12

8 mm   40   50   60   70
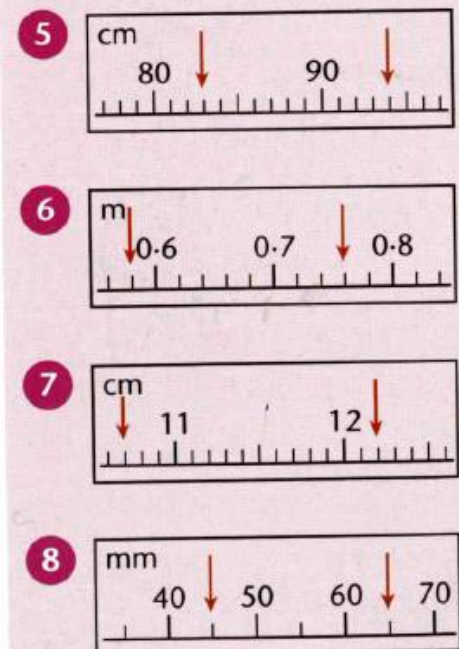
Fluency Answers

A

1 a) 75 mm   85 mm
  b) 7·5 cm 8·5 cm
2 a) 16 mm   28 mm
  b) 1·6 cm 2·8 cm
3 a) 365 mm 430 mm
  b) 36·5 cm 43 cm
4 a) 66 mm 84 mm
  b) 6·6 cm 8·4 cm

5 a) 90 ml 170 ml
  b) 0·09 litres 0·17 litres
6 a) 300 ml 1200 ml
  b) 0·3 litres 1·2 litres
7 a) 360 ml 720 ml
  b) 0·36 litres 0·72 litres
8 a) 600 ml 3200 ml
  b) 0·6 litres 3·2 litres

B

1 a) 235 g 285 g
  b) 0·235 kg 0·285 kg
2 a) 96 g 114 g
  b) 0·096 kg 0·114 kg
3 a) 23 400 g 25 200 g
  b) 23·4 kg 25·2 kg
4 a) 4750 g 7500 g
  b) 4·75 kg 7·5 kg

5 a) 83 cm 94 cm
  b) 0·83 m 0·94 m
6 a) 58 cm 76 cm
  b) 0·58 m 0·76 m
7 a) 10·7 cm 12·2 cm
  b) 0·107 m 0·122 m
8 a) 4·5 cm 6·5 cm
  b) 0·045 m 0·065 m

Problem Solving and Reasoning

Here are a pencil sharpener, a key and a rubber.

Actual size
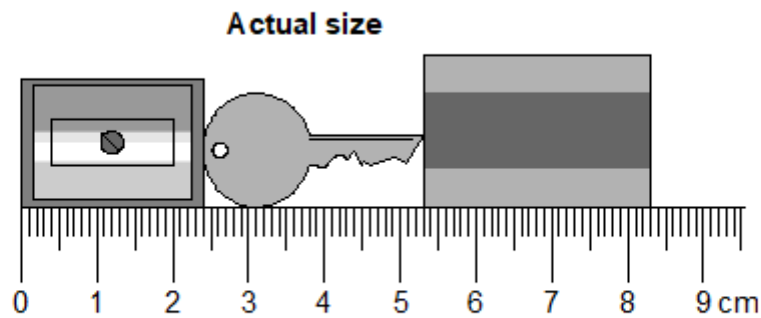
What is the length of **all three things** together?

Give your answer in **millimetres.**

	mm

What is the length of the **key**?

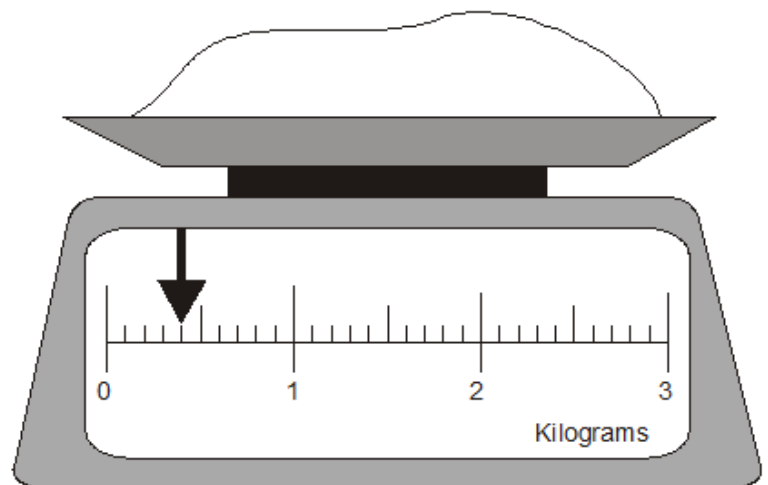Give your answer in **millimetres**.

	mm

Here is some flour on a weighing scale.

How many **grams** of flour are on the scale?

	grams

How much more flour must be added

to the scale to make 1.6 kg?

Kilograms

On this scale, the arrow (↑) shows the weight of this pineapple.
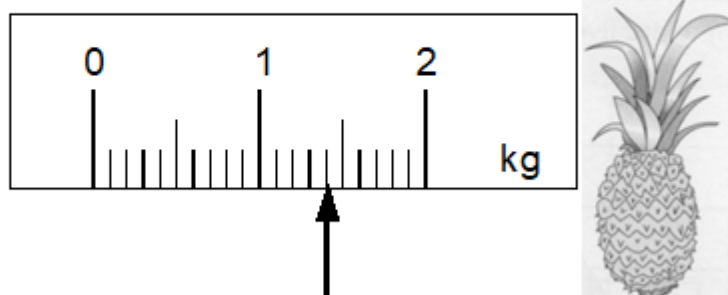
Here is a **different** scale.

Mark with an arrow (↑) the weight of the **same** pineapple.