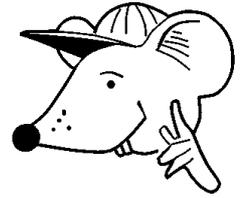




MATHEMATICS



N.S. Yr. 5 P.95

Suggest suitable measuring equipment and record estimates and readings.

Equipment

Paper, pencil,
Selection of instruments and equipment for measuring length, mass, volume etc.

MathSphere

© MathSphere P.O. Box 1234 Worthing BN13 2UJ www.mathsphere.co.uk

Concepts

Children should be able to choose a suitable measuring instrument for a given measuring task. They should also have a good idea of what units to use for measuring. For example, it is better to find the mass of their own bodies in kilograms rather than in grams.

Children should also be able to read a scale to the nearest division. This is a difficult task and much practice will be required to master this. (Great patience will often be needed!) The problem is that larger units are often divided into different sub-units. For example, a measuring cylinder with the units marked in 100ml steps (0, 100, 200, 300ml etc) may have sub divisions of 10ml or 20ml or 50ml and children must first work out how big each step is before trying to read the volume of a sample of water etc. Rather than use the worksheets in this module in isolation, they should be used in conjunction with practical work so that children may see how the diagrams relate to real equipment.

Children should be able to record an estimate and then record the actual reading in a suitable form (e.g. a table) to the nearest half, quarter or tenth of 1km, 1kg or 1 litre (e.g. record 2300ml as 2.3 litres and 300m as 0.3km).

Children should also be able to add or subtract amounts from a reading on a scale and give the distance between two measurements on a scale.

Measuring to the nearest millimetre

Use a ruler to measure these lines to the nearest millimetre.

Write the answers in centimetres (e.g. 5.0cm or 9.4cm)

Eg **a.** _____ line **a** is 4.9cm long

1. _____

2. _____

3.



4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

Measuring to the nearest millimetre

Use a ruler to measure these lines to the nearest millimetre.

Write the answers in centimetres (e.g. 5.0cm or 9.4cm)

Eg **a.** _____ line **a** is 4.8cm long

1. _____

2. _____

3.



4. _____

5.

6. _____

7. _____

8.

9. _____

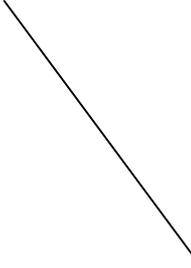
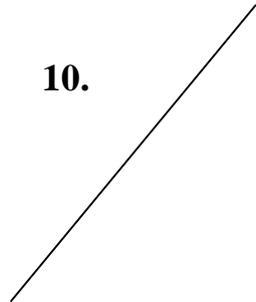
10. _____

Measuring to the nearest millimetre

Use a ruler to measure these lines to the nearest millimetre.

Write the answers in centimetres (e.g. 4.0cm or 9.4cm)

Eg **a.**  line **a** is 5.0cm long

- 1. 
- 2. 
- 3. 
- 4. 
- 5. 
- 6. 
- 7. 
- 8. 
- 9. 
- 10. 

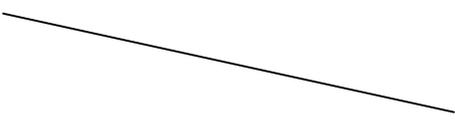
Measuring to the nearest millimetre

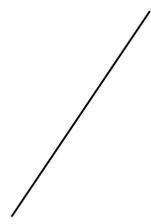
Use a ruler to measure these lines to the nearest millimetre.

Write the answers in centimetres (e.g. 3.0cm or 7.8 cm)

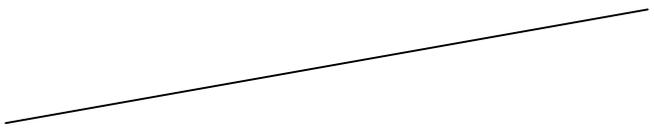
Eg **a.**  line **a** is 4.4 cm long

1. 

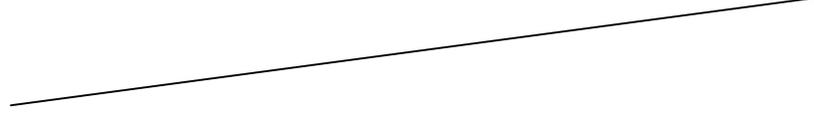
2. 

3. 

4. 

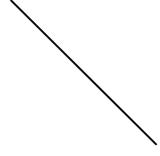
5. 

6. 

7. 

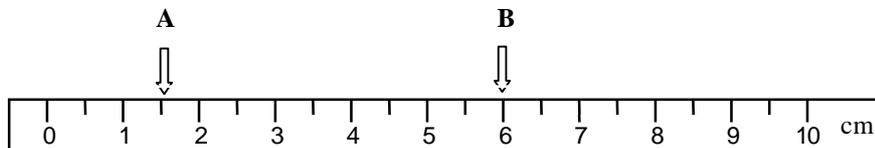
8. 

9. 

10. 

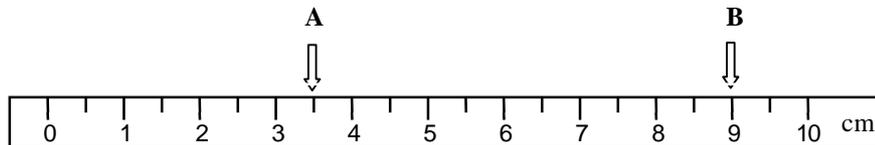
Finding the distance between two measurements

1.



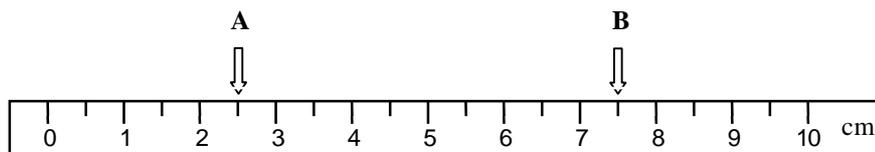
- What is the reading on arrow A ?
- What is the reading on arrow B ?
- What is the distance between arrow A and arrow B ?

2.



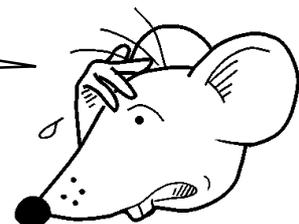
- What is the reading on arrow A ?
- What is the reading on arrow B ?
- What is the distance between arrow A and arrow B ?

3.



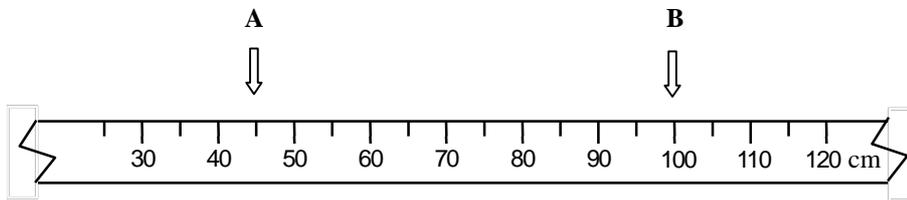
- What is the reading on arrow A ?
- What is the reading on arrow B ?
- What is the distance between arrow A and arrow B ?

All these arrows everywhere.
Things are getting hairy
round here!!!!!!



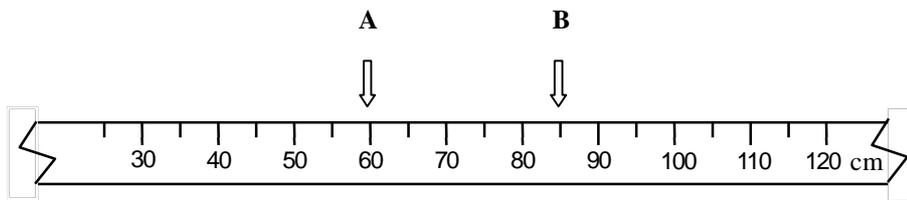
Finding the distance between two measurements

1.



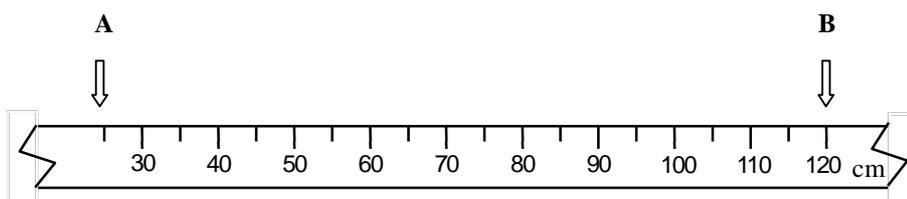
- What is the reading on the two arrows ?
- What is the distance between them in centimetres ?
- What is the distance between them in millimetres ?

2.



- What is the reading on the two arrows ?
- What is the distance between them in centimetres ?
- What is the distance between them in millimetres ?

3.



- What is the reading on the two arrows ?
- What is the distance between them in centimetres ?
- What is the distance between them in millimetres ?

Don't forget, there are ten millimetres in a centimetre.

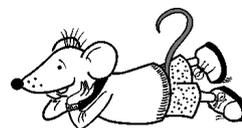


Estimate and measure mass

Estimate the mass of some objects. Then use scales to find their masses to the nearest **tenth** of a kilogram. Remember **one tenth of a kilogram is 100 grams**. Record your results in this table.

Object	Estimate	Measurement
E.g. Bucket of sand	6 kg	8.4 kg

It might be easier to work
with a friend. Cosier too!

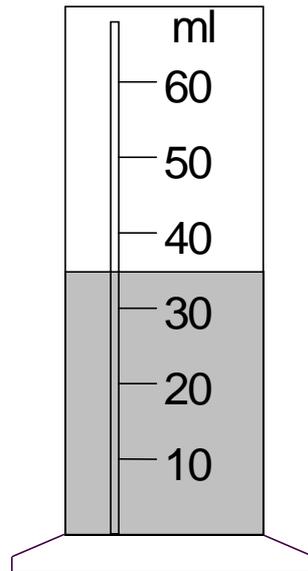


Reading measuring scales

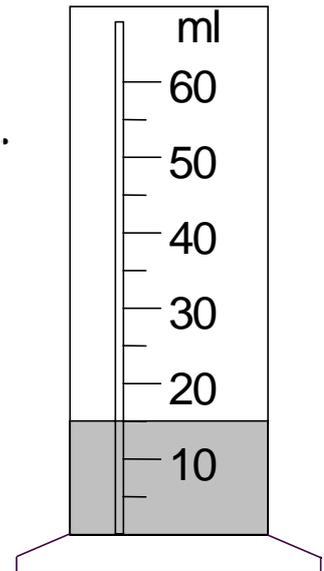
Add the amounts written under each measuring cylinder to the liquid already in the cylinder. E.g. in question one, $35 \text{ ml} + 25 \text{ ml} = 60 \text{ ml}$.



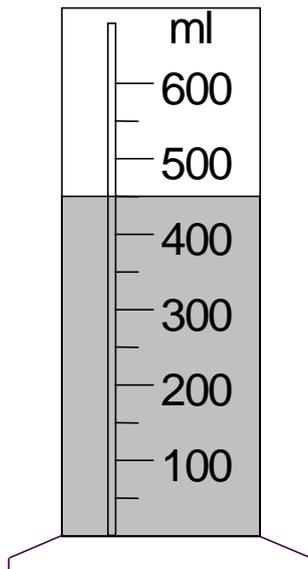
1.

**25 ml**

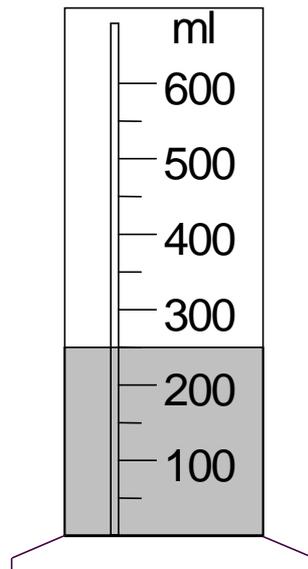
2.

**40 ml**

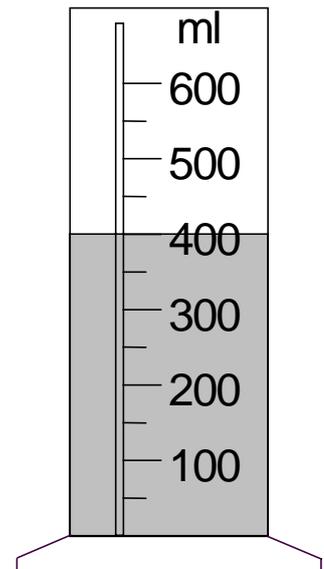
3.

**100 ml**

4.

**150 ml**

5.

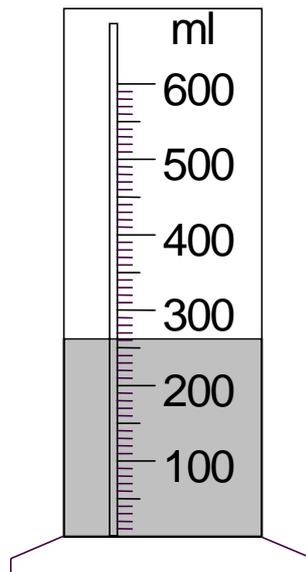
**150 ml**

Reading measuring scales

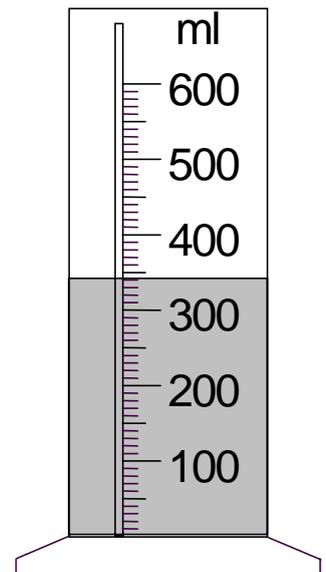
Add the amounts written under each measuring cylinder to the liquid already in the cylinder.



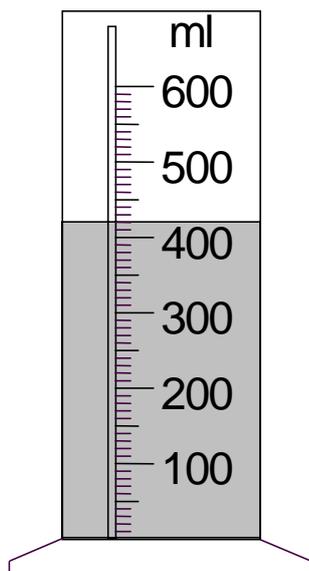
1.

**230 ml**

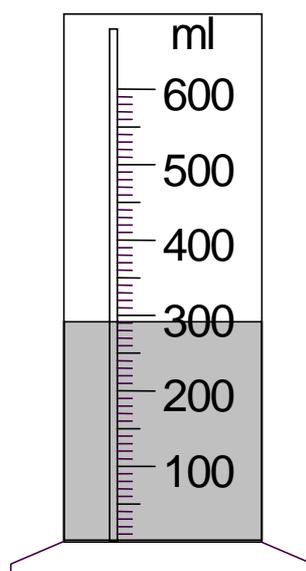
2.

**80 ml**

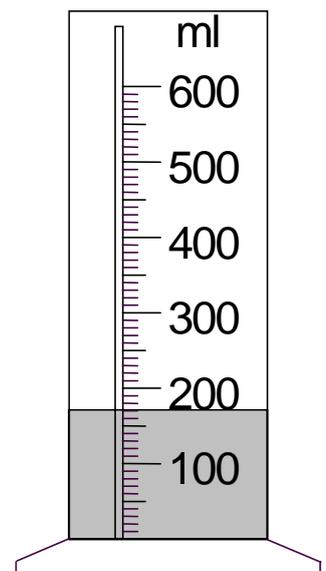
3.

**120 ml**

4.

**310 ml**

5.

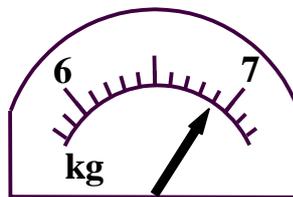
**280 ml**

Adding to, or subtracting from, scale readings

Read these scales, then **add** or **subtract** the amounts shown under the scales. Write your answers in kilograms (e.g. 6.700 kg).

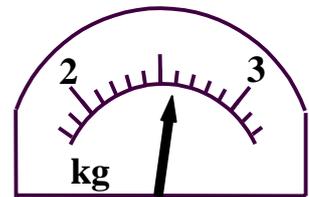


1.



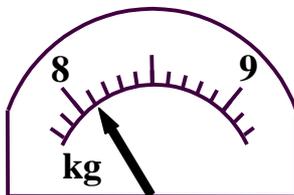
Add 200 g

2.



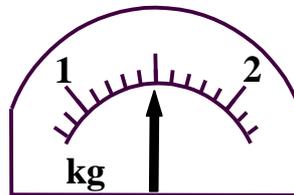
Add 400 g

3.



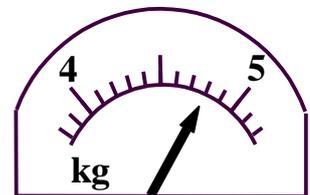
Subtract 100 g

4.



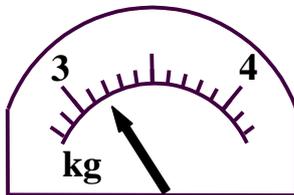
Add 600 g

5.



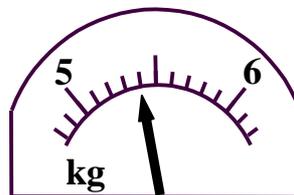
Subtract 500 g

6.



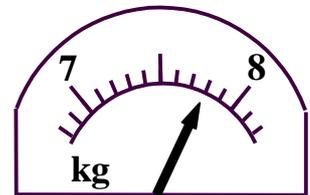
Subtract 300 g

7.



Subtract 500 g

8.



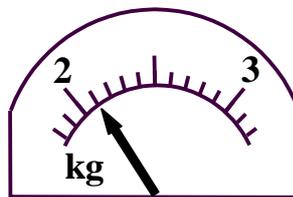
Add 400 g

Adding to, or subtracting from, scale readings

Read these scales, then **add** or **subtract** the amounts shown under the scales. Write your answers in kilograms (e.g. 4.900 kg).

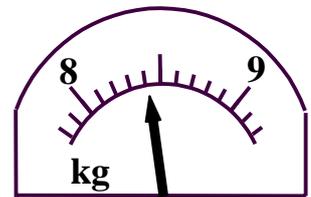


1.



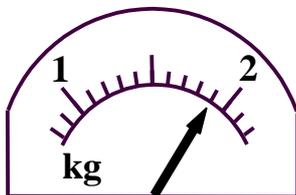
Add 800 g

2.



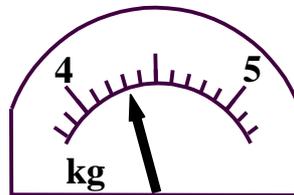
Add 500 g

3.



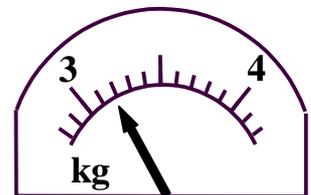
Subtract 900 g

4.



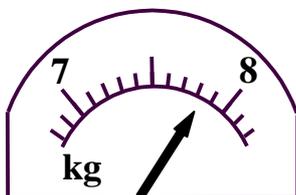
Add 700 g

5.



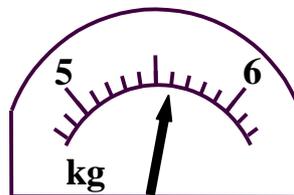
Subtract 600 g

6.



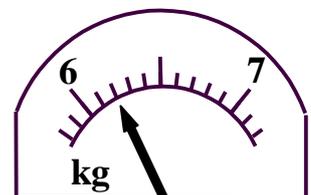
Subtract 800 g

7.



Add 700 g

8.



Subtract 600 g

1.



Okay, Guys. Try rounding these masses to the nearest kilogram.

Hint: The answer to the first one is 3 kg !

- a. 3 400 g b. 8 900 g c. 6 200 g d. 7 500 g e. 900 g
f. 5 735 g g. 3 955 g h. 7 892 g i. 6 393 g j. 3 827 g
k. 1 111 g l. 2 284 g m. 9 372 g n. 9 999 g

2.

Well done! Now try rounding these volumes to the nearest litre.

Hint: The answer to the first one is 2 litres!



- a. 2 045 ml b. 4 539 ml c. 8 349 ml d. 9 473 ml e. 6 666 ml
f. 8 522 ml g. 4 466 ml h. 7 473 ml i. 8 734 ml j. 8 053 ml
k. 8 466 ml l. 16 784 ml m. 23 734 ml n. 87 342 ml

Answers**Page 3** (Allow 1mm error either side for pages 3 to 6)

1. 7.6cm 2. 4.6cm 3. 2.1cm 4. 2.6cm 5. 5.8cm
 6. 8.2cm 7. 11.5cm 8. 3.2cm 9. 5.8cm 10. 11.7cm

Page 4

1. 12.2cm 2. 6.4cm 3. 2.6cm 4. 4.3cm 5. 7.3cm
 6. 7.6cm 7. 9.4cm 8. 6.5cm 9. 7.4cm 10. 10.5cm

Page 5

1. 8.4cm 2. 8.3cm 3. 4.3 cm 4. 3.8 cm 5. 7.9 cm
 6. 13.6 cm 7. 11.3 cm 8. 5.5 cm 9. 9.1cm 10. 5.1cm

Page 6

1. 6.2cm 2. 6.1cm 3. 3.3 cm 4. 4.3 cm 5. 8.6 cm
 6. 11.8 cm 7. 10.7 cm 8. 5.6 cm 9. 14.8cm 10. 2.7cm

Page 7

1. a. 1.5cm b. 6.0 cm c. 4.5 cm 2. a. 3.5cm b. 9.0 cm c. 5.5 cm
 3. a. 2.5cm b. 7.5 cm c. 5.0 cm

Page 8

1. a. A: 45 cm B: 100 cm b. 55 cm c. 550 mm
 2. a. A: 60 cm B: 85 cm b. 25 cm c. 250 mm
 3. a. A: 25 cm B: 120 cm b. 95 cm c. 950 mm

Page 15

1. 60ml 2. 55ml 3. 550ml 4. 400ml 5. 550ml

Page 16

1. 490ml 2. 420ml 3. 540ml 4. 600ml 5. 450ml

Page 17

1. 7.100 kg 2. 3.000 kg 3. 8.000 kg 4. 2.100 kg
 5. 4.300 kg 6. 2.900 kg 7. 4.900 kg 8. 8.200 kg

Page 18

1. 2.900 kg 2. 8.900 kg 3. 1.000 kg 4. 5.000 kg
 5. 2.600 kg 6. 7.000 kg 7. 6.300 kg 8. 5.600 kg

Page 19

1. a. 3 kg b. 9 kg c. 6 kg d. 8 kg e. 1 kg f. 6 kg
 g. 4 kg h. 8 kg i. 6 kg j. 4 kg k. 1 kg l. 2 kg
 m. 9 kg n. 10 kg
2. a. 21 b. 51 c. 81 d. 91 e. 71 f. 91
 g. 41 h. 71 i. 91 j. 81 k. 81 l. 171
 m. 241 n. 871