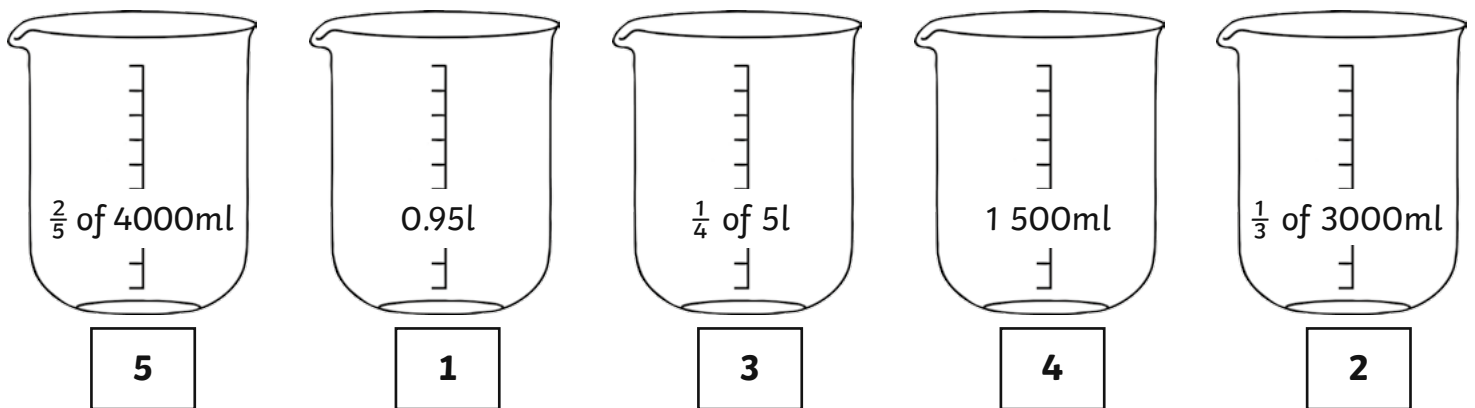# Reading Scales Answers

How Heavy?

Pupils will have a range of items to weigh in the table of results.
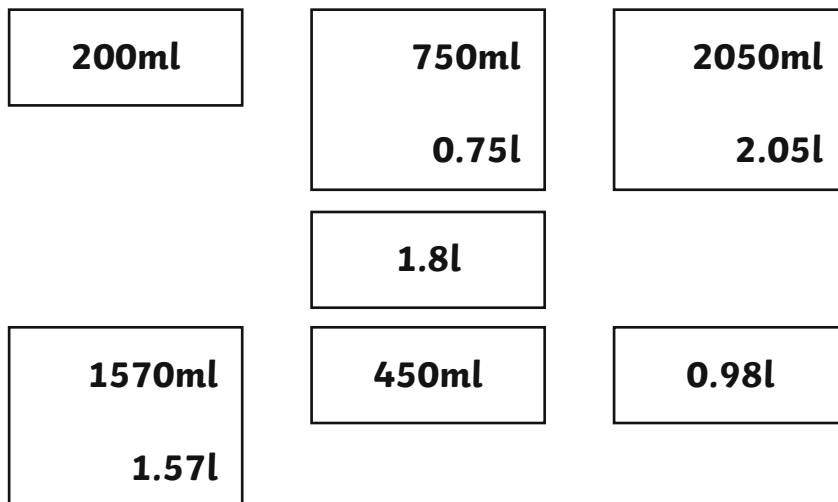
How Long?

1.   **4.5cm**

2.   **Difference is 2cm**

3.   **You need to take 3.5cm away from anything that is measured as that is the number at the start of the ruler, not 0.**

4.   **There are 10 shorter skipping ropes now with 1m left from each 4m length, leaving 5m in total.**

5.   **There will be a range of measurements recorded in this table.**

How Much Capacity?

1.

$\frac{2}{5}$ of 4000ml	0.95l	$\frac{1}{4}$ of 5l	1 500ml	$\frac{1}{3}$ of 3000ml
5	**1**	**3**	**4**	**2**

2.

200ml	**750ml** **0.75l**	**2050ml** **2.05l**
	1.8l	
1570ml **1.57l**	**450ml**	**0.98l**

How Much Does it Cost?

The order costs **£1.80.**

Reading Scales

I can practise measuring, adding and subtracting; lengths (mm, cm, m), mass (g, kg) and volume (ml, l). I can estimate, compare and calculate different measures, convert between units of measure and to solve problems using measure.

How Heavy?

You will need a 25g and 50g weight and scales (or a balance) and a range of weights for this activity.
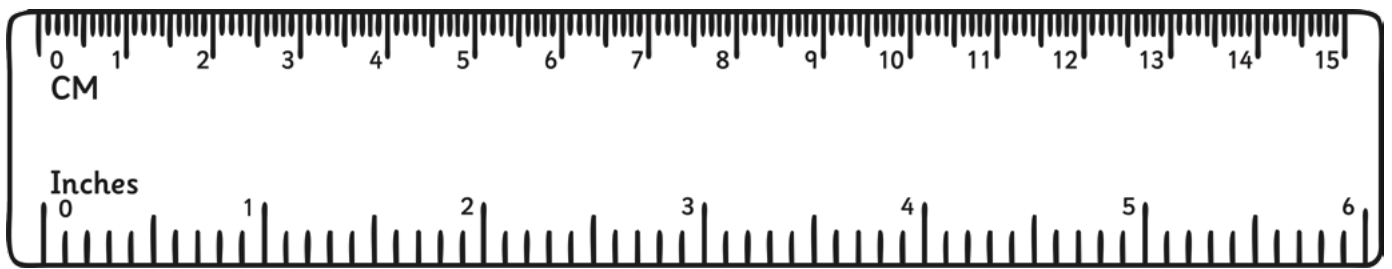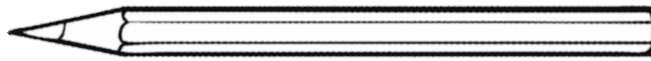
1. Find 6 things in the room that you estimate are lighter than 25g.

2. Find 6 things in the room that you estimate are between 25g and 50g.

Record them in the table.

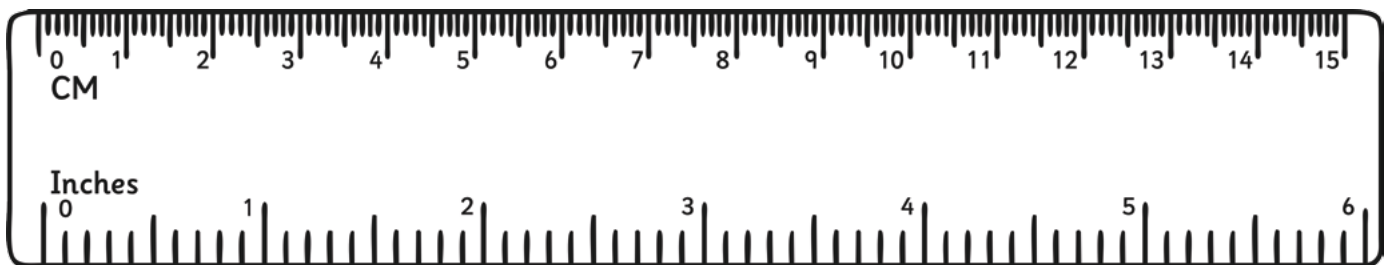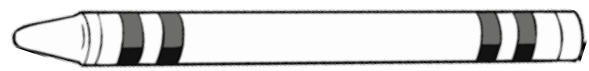| Object	Lighter than 25g	Between 25g and 50g	Actual mass	Difference

Next, weigh each item. Record the actual mass of each object. Calculate the difference between your estimation and the measured mass.

How Long?

1. How long is the pencil?
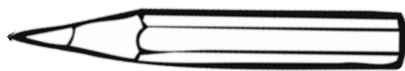
2. What is the difference between the length of the pencil and the crayon?

3. Carole's ruler is broken at both ends. Can she still measure with it? Explain why you think that.

4.   There are some new skipping ropes in the playground, but they are far too long. There are five 4m ropes in all. If each rope is cut into 150cm lengths, how many shorter skipping ropes are there now? How much rope is left from each 4m length? How much is left over altogether?

5.   The school secretary wants to order some new school uniform, but she can't remember what size will fit Y3 and Y4 pupils. Help her out by taking some measurements from 6 pupils from your class. Record them in the table.

| Name	Under arm to waist	Chest	Back of neck to waist

What is the difference between the longest and shortest arm to waist measurement?

Add all of the chest measurements and calculate a mean (average) value.

Which method of measuring is the easiest? Using a metre stick, a 30cm ruler, a tape measure? Explain why.

How Much Capacity?

1. You have five containers, each with a different capacity. Order the containers from least volume to most volume of liquid by numbering them 1-5.

| $\frac{2}{5}$ of 4000ml | 0.95l | $\frac{1}{4}$ of 5l | 1500ml | $\frac{1}{3}$ of 3000ml |
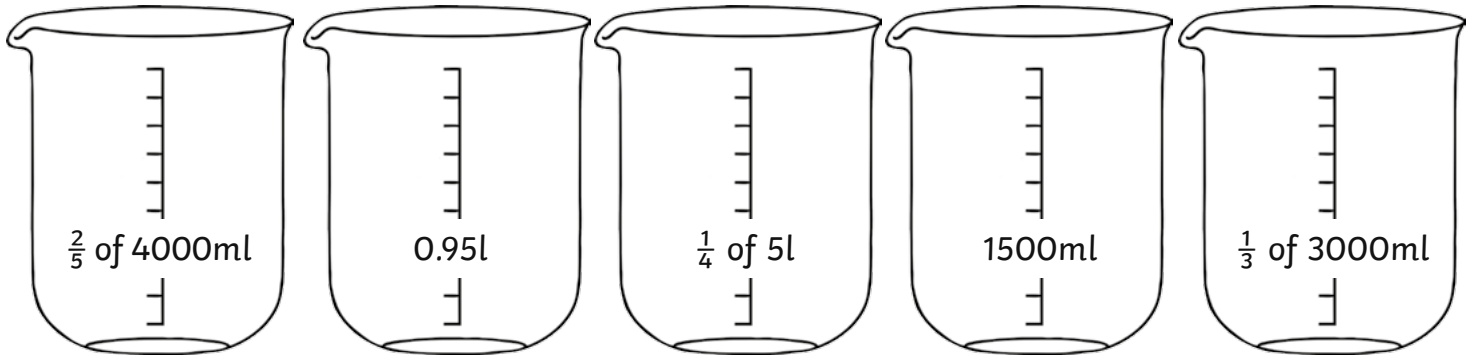
Make each of the lines equal a total of 3l by completing the missing volumes. Record your answers in ml and l.

| 200ml | | ml

l |

| | 1.8l | |

| ml

l | 450ml | 0.98l |

How Much Does it Cost?

Alf chose an apple and a fruit smoothie from the healthy food snack bar. The total cost of his order is somewhere in the table below.
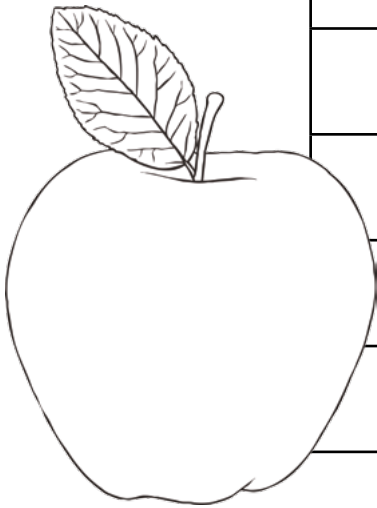
£1.96	67p	£1.31
£1.52	£2.56	£3.10
£1.31	70p	£1.00
£1.40	£3.16	73p
92p	£1.15	£1.80
£1.35	£1.70	£1.43

Use the clues to work out how much Alf paid.

1. Alf needed more than three coins to pay.

2. The apple cost more than 50p and less than 70p.

3. Alf didn't need any copper coins to pay.

4. The apple was half the cost of the smoothie.

Reading Scales Answers

How Heavy?

Pupils will have a range of items to weigh in the table of results.

How Long?

Hands and feet	Total	Hands and feet	Total
2 hands add 2 feet	**66cm**	4 feet minus 2 hands	**48cm**
3 hands plus 1 foot	**61cm**	5 feet take away 3 hands	**53cm**
1 hand and 3 feet	**71cm**	The difference between 3 hands and 2 feet	**4cm**
4 hands + 4 feet	**132cm**	6 feet – 1 hand	**100cm**

How Much?

How much is left from every money box: **10p   41p   18p   26p**

How Much Time?

There will be a range of responses to this activity.

How much is Equal to…?

500ml		500mm
50cm		0.5l
50cl		5000g
5kg		500ml
5000m		5km
5000mm		5m

Reading Scales

I can practise measuring, adding and subtracting; lengths (mm, cm, m), mass (g, kg) and volume (ml, l). I can estimate, compare and calculate different measures, convert between units of measure and to solve problems using measure.

How Heavy?

You will need a 1kg weight and scales (or a balance) and a range of weights for this activity.

1. Find 6 things in the room that you estimate are lighter than 1kg.

2. Find 6 things in the room that you estimate are heavier than 1kg.

Record them in the table.

Object	Lighter than / Heavier than 1 kg	Actual mass

Next, weigh each item and tick the box if your estimation was correct. In the final column, record the actual mass of each object.

How accurate were your estimations? Were you more accurate at estimating the mass of the lighter or heavier objects?

How Long?

You may need to use a number line, or other ways to record your calculations here.

Joel's hand is 14cm long.   Amal's foot is 19cm long.
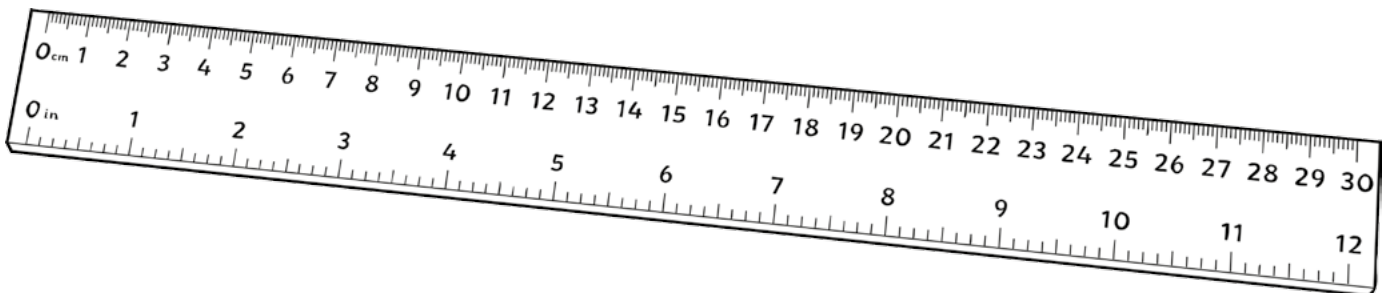
Calculate the different totals for the following combinations of hands and feet.

Hands and feet	Total	Hands and feet	Total
2 hands add 2 feet		4 feet minus 2 hands	
3 hands plus 1 foot		5 feet take away 3 hands	
1 hand and 3 feet		The difference between 3 hands and 2 feet	
4 hands + 4 feet		6 feet – 1 hand	

How Much?
You may want to use coins or a number line for this activity.

Look at the coins below. Count how much there is and record the total. You spend some of your money. Calculate how much is left and write the new total in the answer box.

You spend 65p. How much is left?

You spend 47p How much is left?

You spend 31p. How much is left?

You spend 38p. How much is left?

How Much Time?
Work with a buddy. You will need a seconds timer for this activity or get your buddy to count in seconds for you.

Tick the activities that you think you could do in 20 seconds. Then do the activities and get your buddy to time you. Record how long it took to complete each activity. How close were your estimations?

Activity	Can I do this in 20 seconds?	Actual time taken:
Write the days of the week	Yes No	
Count up to fifty	Yes No	
Write your first and last name 5 times	Yes No	
Count the chairs in the room	Yes No	

How Much is Equal to...?
Match the amounts that are equal in the table below.

Reading Scales Answers

How Heavy?

Pupils will have a range of items to weigh in the table of results.

How Much?

1.   How much does it cost to send these letters by 2nd Class post?

Weight	Cost	Weight	Cost	Weight	Cost
450g	**£1.51**	510g	**£2.05**	245g	**£1.19**
840g	**£2.80**	315g	**£1.51**	90g	**74p**

2.   How much do these parcels cost by 1st Class Signed For post?

Weight	Cost	Weight	Cost	Weight	Cost
1.1kg	**£10.00**	2350g	**£16.95**	8.45kg	**£23.00**
6000g	**£23.00**	2.95kg	**£16.95**	751g	**£4.40**

3.   **£34.50 - £28.55 = £5.95**

How Much Capacity?

Volume of liquid	Number of containers needed	Containers used
600ml	**3**	**C,C,C**
320ml	**4**	**C,B,B,B**
465ml	**4**	**C,C,B,A**
90ml	**3**	**B,A,A**
145ml	**4**	**B,B,B,A**
500ml	**6**	**C,C,A,A,A,A**

Reading Scales Answers

2. **C – 200ml**

   B, B, B, B, B, - 200ml

   A, A, A, A, A, A, A, A, - 200ml

3. **Pour out 40ml from container C to container B. That will leave 160ml in container C. Then pour out 25ml from container C to container A and pour it away. That will leave 135ml in container C. Then pour another 25ml into container A, leaving 110ml in container C.**

How Long?

A range of measurements will be recorded on these tables.

Reading Scales

I can practise measuring, adding and subtracting; lengths (mm, cm, m), mass (g, kg) and volume (ml, l). I can estimate, compare and calculate different measures, convert between units of measure and to solve problems using measure.

How Heavy?

You will need a 500g weight and scales (or a balance) and a range of weights for this activity.

1. Find 6 things in the room that you estimate are lighter than 500g.

2. Find 6 things in the room that you estimate are heavier than 500g.

Record them in the table.

Object	Lighter than / Heavier than 1 kg	Actual mass

Next, weigh each item. In the final column, record the actual mass of each object. How accurate were your estimations? Were you more accurate at estimating the lighter or heavier objects?

What is the difference in weight between your heaviest and lightest object?

How Much?

The school secretary has to post lots of letters. Use the information about postal rates to send the parcels

| Size | Royal Mail 1st Class and 2nd Class | | | Royal Mail Signed For | | |
| | | 1st Class | 2nd Class | | 1st Class | 2nd Class |
	Weight up to and including	Price	Price	Weight up to and including	Price	Price
Large Letter	100g	95p	74p	100g	£2.05	£1.84
	250g	£1.26	£1.19	250g	£2.36	£2.29
	500g	£1.68	£1.51	500g	£2.78	£2.61
	750g	£2.42	£2.05	750g	£3.52	£3.15
Small Parcel	1kg	£3.30	£2.80	1kg	£4.40	£3.90
	2kg	£8.90	£4.89	2kg	£10.00	£5.99
Medium Parcel	5kg	£15.85	£13.75	5kg	£16.95	£14.85
	10kg	£21.90	£20.25	10kg	£23.00	£21.35
	20kg	£33.40	£28.55	20kg	£34.50	£29.65

1.   How much does it cost to send these letters by 2nd Class post?

Weight	Cost	Weight	Cost	Weight	Cost
450g		510g		245g	
840g		315g		90g	

2.   How much do these parcels cost by 1st Class Signed For post?

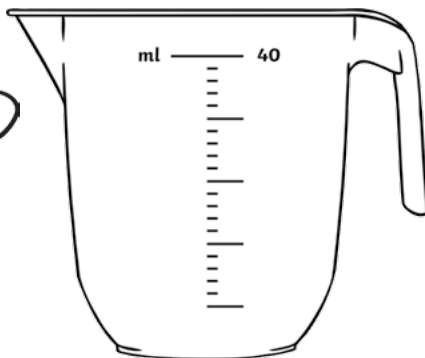| Weight	Cost	Weight	Cost	Weight	Cost
1.1kg		2350g		8.45kg	
6000g		2.95kg		751g	

3.   What is the difference in cost between sending a 11.5kg parcel 2nd Class and the same parcel 1st Class Signed For?
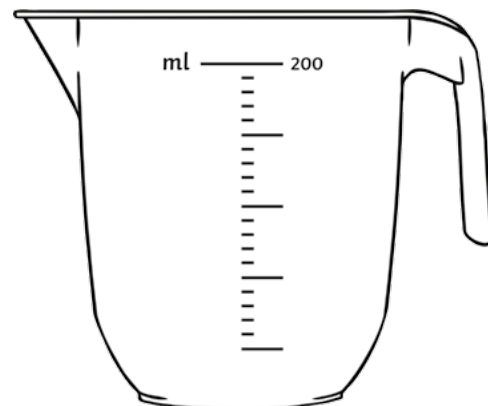
How Much Capacity?

1. You have three containers, each with a different capacity. Complete the table below making the volume of liquid using the fewest containers each time. The first one has been done for you.

A) a 25ml measuring spoon   **B)** a 40ml jug   **C)** a 200ml jug

| Volume of liquid	Number of containers needed	Containers used
600ml	3	C,C,C
320ml		
465ml		
90ml		
145ml		
500ml		

2. What are the possible combinations of containers to make 200ml in volume?

3. If there is 200ml in container C and I want to end up with 110ml. Explain how you can use containers A and B to help.

How Long?

Before rulers and tape measures, people measured things using their hands and feet.

A digit is the width of an index finger, a palm is the distance across the hand from the thumb joint across the palm to the edge of the hand and a span is the distance from thumb tip to little finger tip with the hand stretched as far as possible on a flat surface.

A cubit is the distance from elbow to the tip of the middle finger.
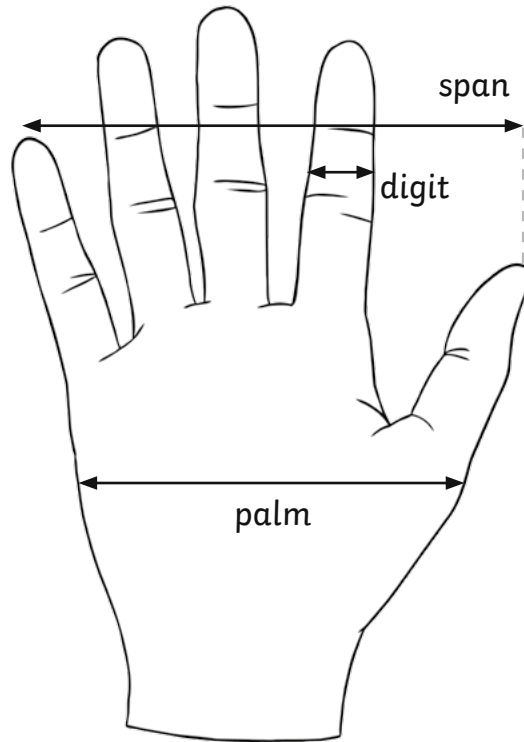
Measure your own hand and cubit. Record the lengths in the table. Your height should be approximately 4 cubits. Is this correct? Measure your height in cm then record as accurately as possible using cubits, spans, palm and digits.

My digit is...	My palm is...	My span is...

My cubit is...	My height is...	My height in cubits, hands, palm and digits is...

Complete the table using your measurements.

4 digits and 2 palms.	2 cubits, 3 spans, 4 palms and 2 digits.
3 cubits – 5 spans.	2 cubits minus 3 spans and 4 digits.
4 spans, a palm and 3 digits.	Your teacher's cubit take away your cubit.
The difference between a cubit and 2 palms.	1 cubit, 1 span, 1 palm, 1 digit.

Measure the length of the classroom using a metre stick. Now measure how many of your paces it is. How many of your feet equal one of your paces? Is your pace longer or shorter than a metre? What is the difference?

Length of classroom.	Length of classroom.	How many feet in one pace?	Is my pace longer or shorter than 1m?	Difference between my pace and 1 metre