



Colin and Coco's Deliberate Practice

Year 2 Unit 9

Measurement: Length and Mass

Answers





Contents

This pack of deliberate practice is designed to be used flexibly to secure the manageable steps of this unit.

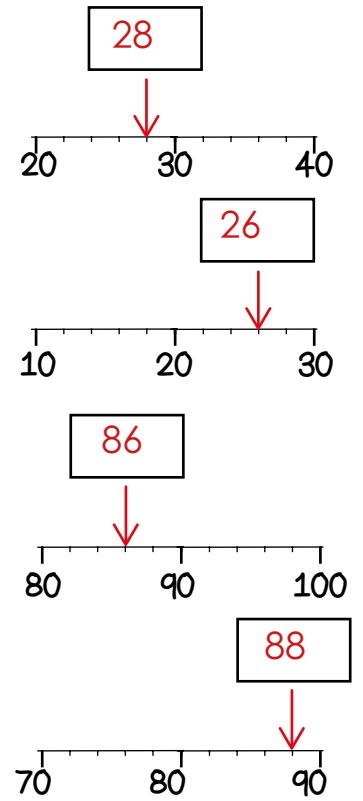
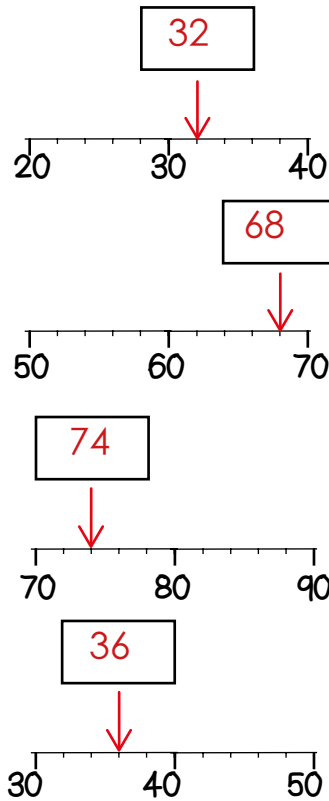
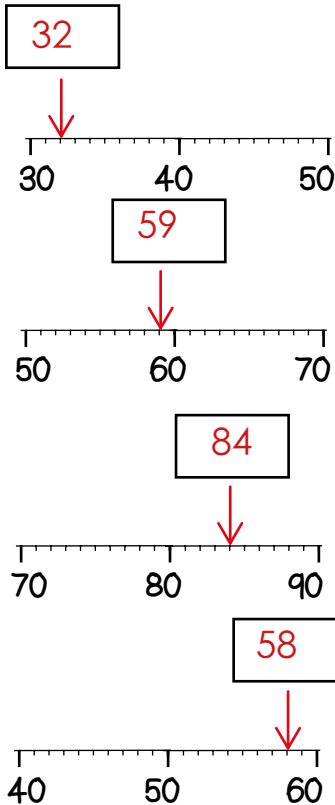
The table below indicates which activities are linked to which manageable steps.

	Do It	Challenge It	Play It
Read scales in divisions of ones and twos	1	1	1
Read scales in divisions of fives and tens	1	1	1
Measure the mass of objects (kg)	2		
Measure the mass of objects (g)	2		2
Estimate the mass of objects		2	2
Compare the mass of objects using $>$, $<$ and $=$	3		3
Order the mass of objects		3	3
Measure lengths (m)		4	
Measure lengths (cm)	4		
Estimate lengths		4	4
Compare lengths using $>$, $<$ and $=$	5		5
Order lengths		5	
Measure heights (cm)	6		
Estimate heights			6
Compare heights using $>$, $<$ and $=$		6	



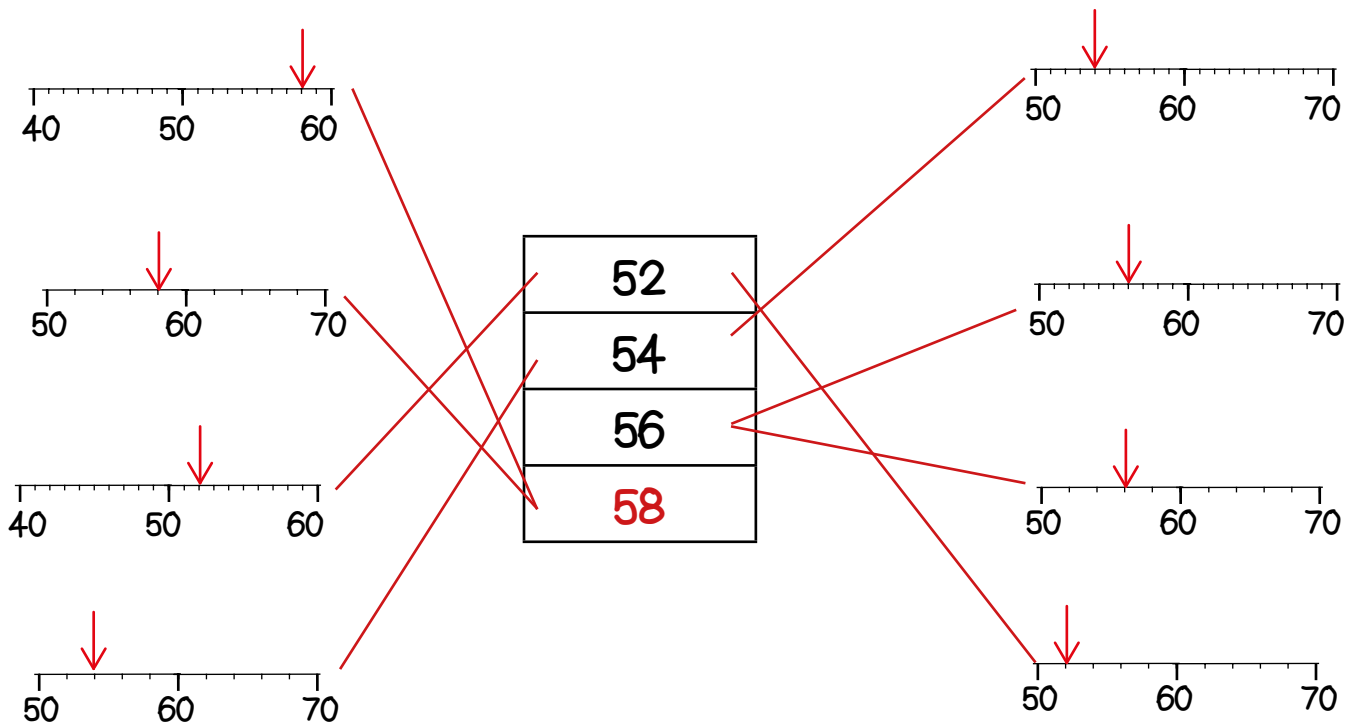
Do It 1

What number is the arrow pointing to?



Challenge It 1

Match the number line to the answer.
Find the missing number.





Reading Scales Game

Play It 1

You need:

0 - 9 Dice

Number line (at the bottom of this page.) In 2s or 5s

To play:

Take it in turns to throw the dice twice, to make a two-digit number.

Choose which digit represents the tens and which represents the ones.

Plot your number on the number line, convincing your opponent that you are plotting it in the correct place.

For example on the 2s line:

Player 1: I have thrown a 3 and a 7

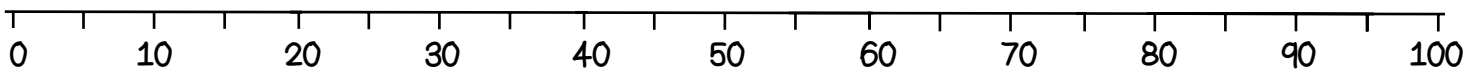
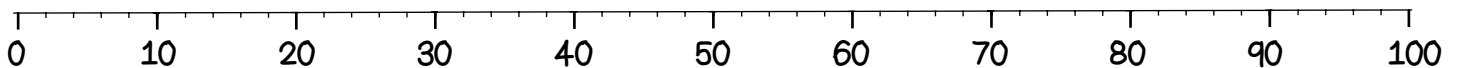
If I have 3 tens and 7 ones the number is thirty-seven.

If I have 7 tens and 3 ones the number is seventy-three.

I will plot 73 between 72 and 74

To win:

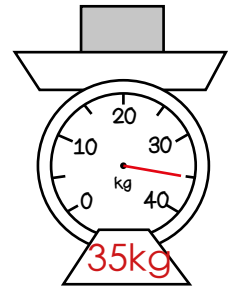
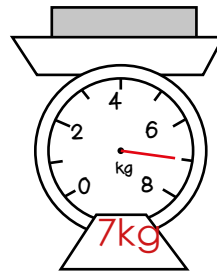
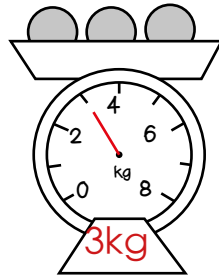
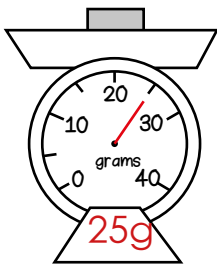
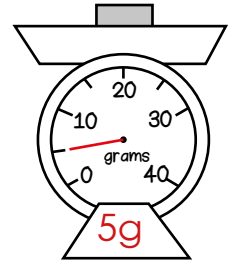
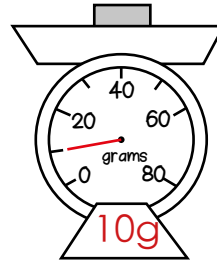
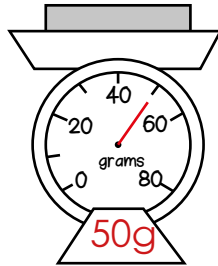
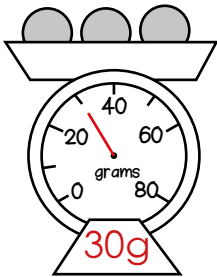
The winner is the first player to get 4 of their points plotted without any of their opponent's points in between.





How heavy are the items?

Do It 2



Match the mass to the sensible estimate.
Suggest other possibilities.

Challenge It 2

Other suggestions

5g	apple	
3kg	pen	
100g	pig	
25kg	pumpkin	
100kg	Year 2 child	



Estimate and Weigh Game

Play It 2

You need:

Weighing scales

Small items to weigh (less than 100g)

To play:

Player A chooses an item and weighs it. They tell player B what it weighs.

Player B tries to find an item similar in weight to player A's item.

Score a point if the item is within ten grams.

Swap roles.

To win:

The winner is the first player to score 5 points.



Do It 3

Insert $<$ or $>$ to make the statements true.

$6\text{kg} < 11\text{kg}$

$74\text{kg} > 44\text{kg}$

$10\text{g} < 1\text{kg}$

$14\text{g} > 8\text{g}$

$35\text{g} < 53\text{g}$

$64\text{g} > 62\text{g}$

$7\text{g} < 6\text{kg}$

$81\text{kg} > 41\text{kg}$

$83\text{g} < 3\text{kg}$

$18\text{kg} > 13\text{kg}$

$46\text{kg} < 66\text{kg}$

$73\text{g} > 37\text{g}$

Challenge It 3

Find the missing digits so that each list is in order from lightest to heaviest.
Complete them in several different ways.

$\boxed{5}\text{g}, 1\boxed{4}\text{g}, \boxed{1}8\text{g}, \boxed{2}\boxed{0}\text{g}, 2\boxed{3}\text{g}$

$\boxed{6}7\text{kg}, 6\boxed{9}\text{kg}, \boxed{7}4\text{kg}, \boxed{8}8\text{kg}$

Solve them together using the digits 0 - 9 once each.



Heavier or Lighter Game

Play It 3

You need:

0 - 100 benchmarked number line (at the bottom of this page.)

0 - 9 dice

To play:

Take it in turns to throw the dice twice, to make a two-digit mass.

Choose which digit represents the tens and which represents the ones.

Plot your mass on the number line, convincing your opponent that you are plotting it in the correct place.

For example:

Player 1: I have thrown a 3 and a 7

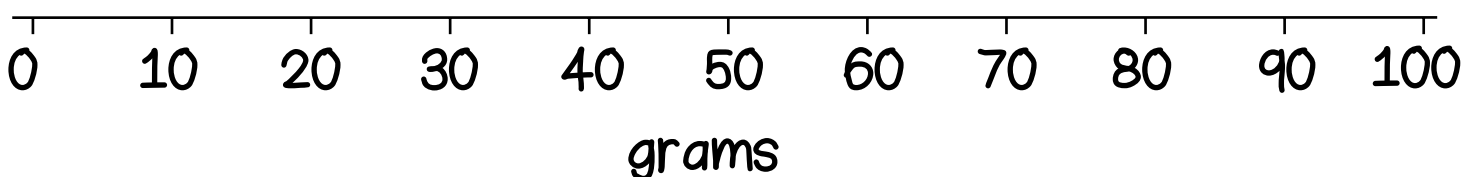
If I have 3 tens and 7 ones it is thirty-seven grams.

If I have 7 tens and 3 ones it is seventy-three grams.

73g is heavier than 70g but lighter than 80g

To win:

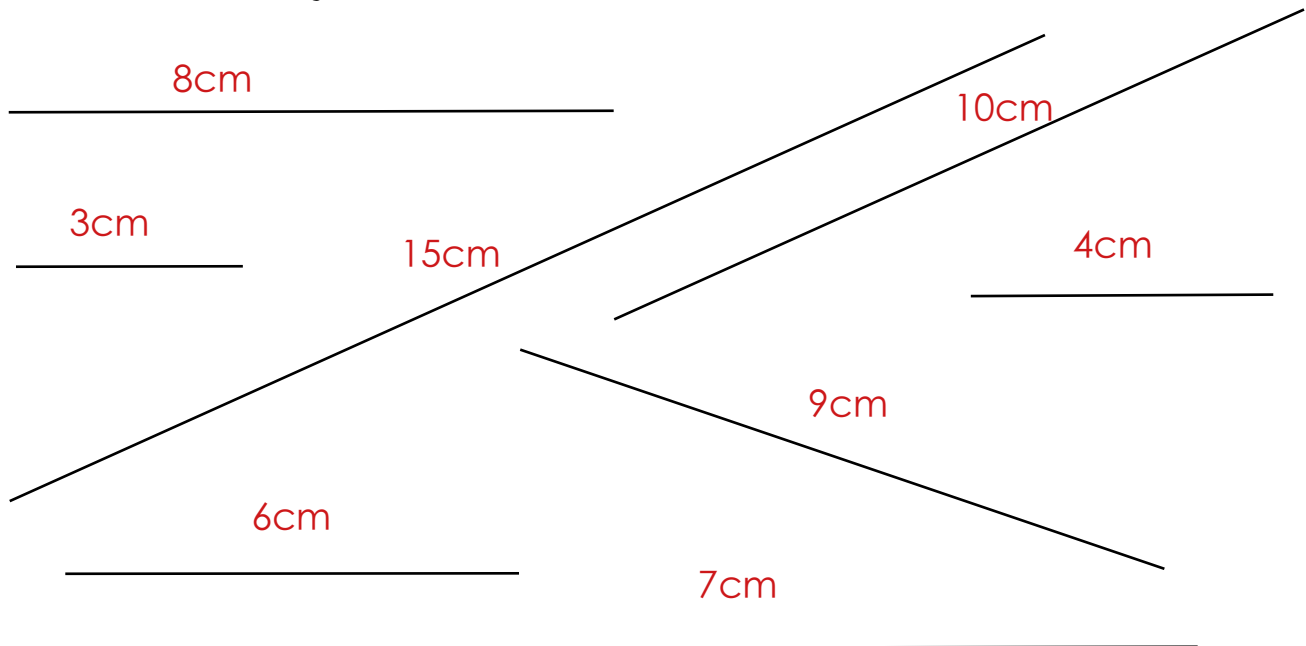
The winner is the first player to get 4 of their points plotted without any of their opponent's points in between.





Do It 4

Measure the length of each line.



Challenge It 4

You need a tape measure and some beanbags.

Mark a starting point on the playground.

Throw three beanbags so that one travels 2m, one travels 4 metres and one travels 6 metres.

Measure your throws.

Try again with 1 metre 3 metres and 5 metres.



Draw a Line Game

Play It 4

You need:

A tape measure and ruler

To play:

Player 1 challenges player B to draw a line of any chosen two-digit length of centimetres.

Player 2 draws the line.

Player 1 measures it. If the line is within 5 centimetres either way, then Player 2 scores a point.

For example:

Player 1: "Draw me a line 34cm long."

Player 2: Draws a line

Player 1: Measures the line and finds it is 30cm long. (29cm to 39cm would have scored a point.)

Player 2 scores 1 point.

Players swap roles.

To win:

The winner is the first player to score 5 points.



Do It 5

Insert $<$ or $>$ to make the statements true.

7cm	$<$	10cm	74m	$>$	44m	10cm	$<$	1m
14cm	$>$	8cm	38m	$<$	83m	26m	$>$	62cm
17cm	$<$	70cm	51m	$>$	41m	52cm	$<$	2m
81cm	$>$	18cm	49m	$<$	94m	76m	$>$	67cm

Challenge It 5

Find the missing digits so that each list is in order from shortest to longest
Complete them in several different ways.

$\boxed{4}$ m, 1 $\boxed{5}$ m, $\boxed{2}$ $\boxed{9}$ m, 3 $\boxed{0}$ m, $\boxed{3}$ 4m

6 $\boxed{7}$ cm, $\boxed{6}$ $\boxed{8}$ cm, 7 $\boxed{1}$ cm, 74cm

Solve them together using the digits 0 - 9 once each.



Longer or Shorter Game

Play It 5

You need:

0 - 9 dice

To play:

Take it in turns to throw the dice twice, to make a two-digit length.

Choose which digit represents the tens and which represents the ones.

Compare the lengths you have made.

The player with the longer length writes it using $>$ or $<$ and scores a point.

For example:

Player 1: I have thrown a 4 and a 6

If I have 6 tens and 4 ones it is sixty-four centimetres.

Player 2: I have thrown a 4 and a 9

If I have 9 tens and 4 ones it is ninety-four centimetres. Mine is longer than yours, $94\text{cm} > 64\text{cm}$ so I score 1 point.

To win:

The winner is the first player to score 10 points.



Do It 6

Measure the height of each tree.



8cm



3cm



6cm



7cm



10cm



4cm



5cm

c

Challenge It 6

Use the digits 3, 4, 6 and 9 to make the height statement true in as many ways as possible.

How do you know when you have found all the ways?

$$\square \square \text{ m} > \square \square \text{ m}$$

If you had four different digits would you find more possible ways?



Measuring Towers Game

Play It 6

You need:

A tape measure or ruler

Items to build towers - not centimetre cubes!

To play:

Player 1 challenges player B to build a tower of any chosen two-digit height of up to 50 centimetres.

Player 2 builds the tower.

Player 1 measures it. If the tower is within 5 centimetres either way, then Player 2 scores a point.

For example:

Player 1: "Build me a tower 25cm tall."

Player 2: Builds a tower

Player 1: Measures the tower and finds it is 30cm tall. (20cm to 30cm would have scored a point.)

Player 2 scores 1 point.

Players swap roles.

To win:

The winner is the first player to score 10 points.