RICH MATHEMATICAL TASK BOOKLET

MEASUREMENT

YEAR 4

Copy Masters

Task 1

Estimate the length of your hand and length of your arm.

Work with a partner to measure these with a piece of string cutting the string to length.

Measure both pieces of string with a tape measure.

Use the different lengths of string (measurement tool) to estimate and measure items around the classroom. Complete the table below.

	First measurement	Second measurement
Doorway (across)		
Book		
Table		

Now measure the same items again with a tape measure and see how accurate you were.

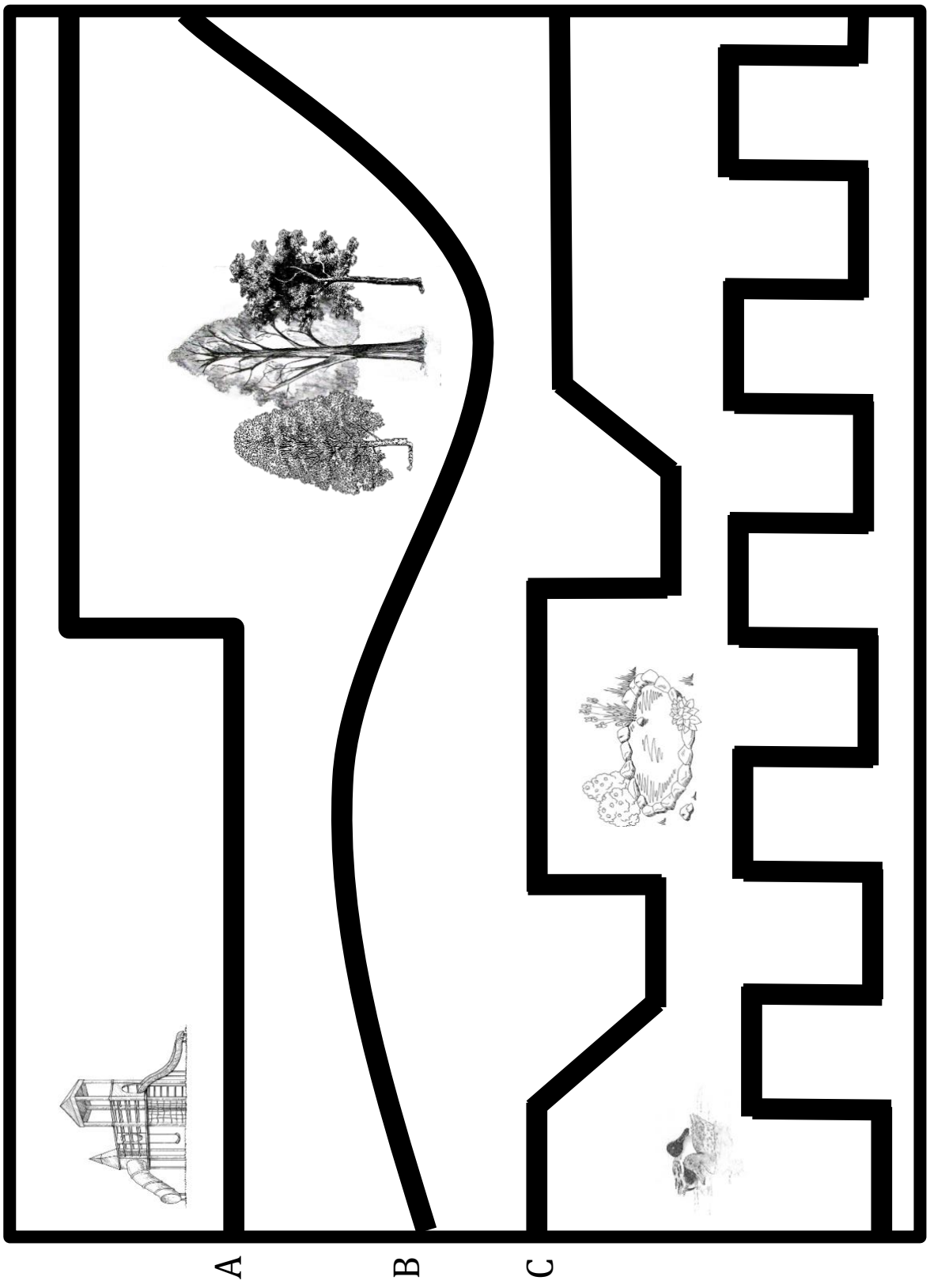
Task 1 -Independent Tasks

Use your string measurement tool to measure the following paths in a park.

Record your results next to each line.

Now using a measuring tape or ruler, measure the lines to see how accurate you were.

Task 1 – Independent



Task 2

Estimate how long the _____ is in metres.
Estimate -
Use the metre strip to measure the length and record the measurement count and measurement unit. Measurement –

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Estimate how long the _____ is in metres.
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Find some objects in the classroom that are one centimetre in length.

How long is your metre strip in centimetres?

Task 2 -Independent Tasks

Estimate the length of each object in centimetres. Check your estimation with your centimetre strip. Make sure you record the measurement unit.

Estimate –
Measurement –

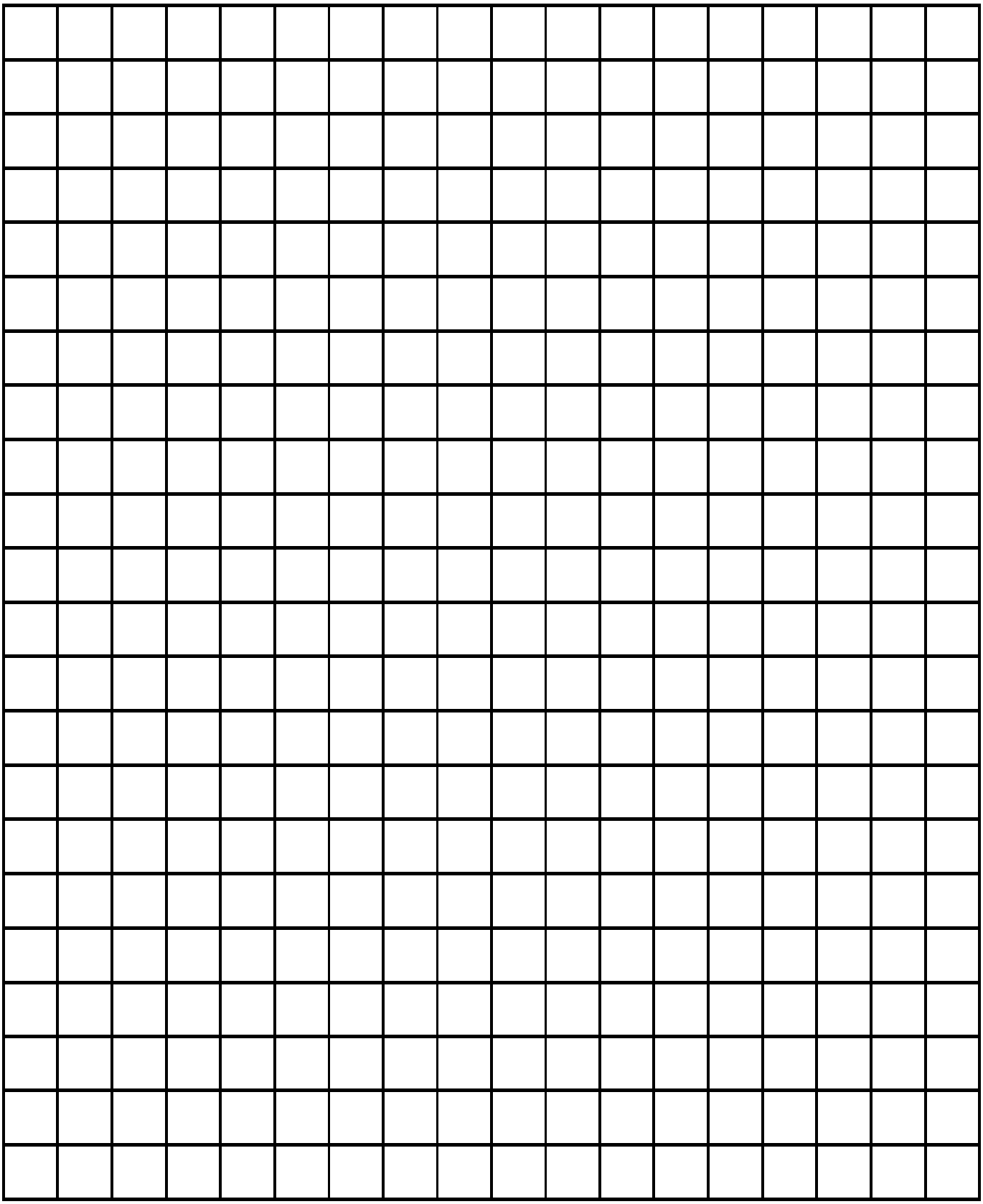
Estimate –
Measurement –

Estimate –
Measurement –

Estimate –
Measurement –

Estimate –
Measurement –

1-CENTIMETRE GRID PAPER



Task 3

Make a tape measure from the ribbon and mark this in metres, three-quarter metres, half metres, and quarter metres.

What is the length and width of the school hall?

Estimate:

Measurement:

What is the length and width of the court?

Estimate:

Measurement:

Task 3 -Independent Tasks

Choose objects around the classroom to measure using your 10 m ribbon, centimetre ruler, or a metre ruler.

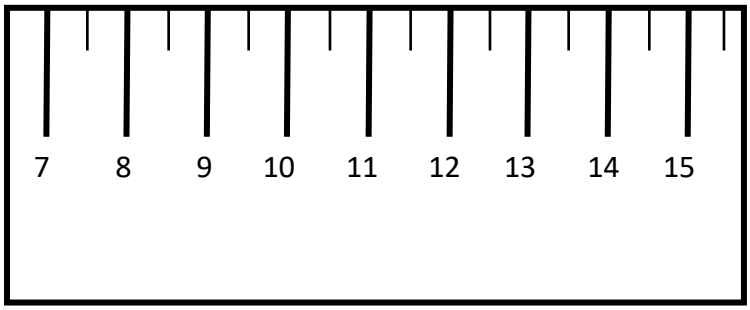
For each object, record the measurement estimation with the correct unit.

Now measure the object with one of the measuring tools and record the measurement with the correct unit.

Convert:
1m = ____ cm =_____ mm

Task 4

We need to measure these books to see if they will fit into the envelopes. However are rulers are broken. Use the broken ruler to find out if the book will fit in the envelope.



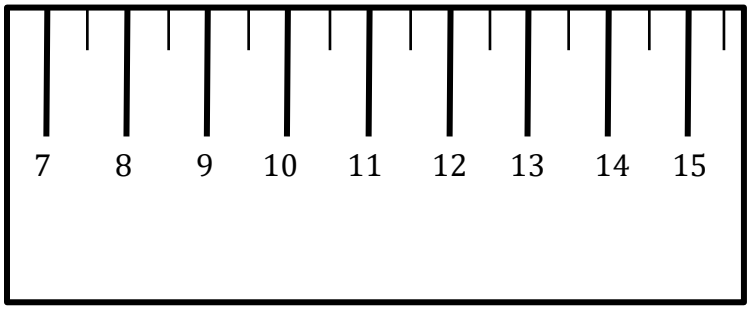
Estimate the length of each side of the book first in centimetres.
Estimate –
Perimeter –

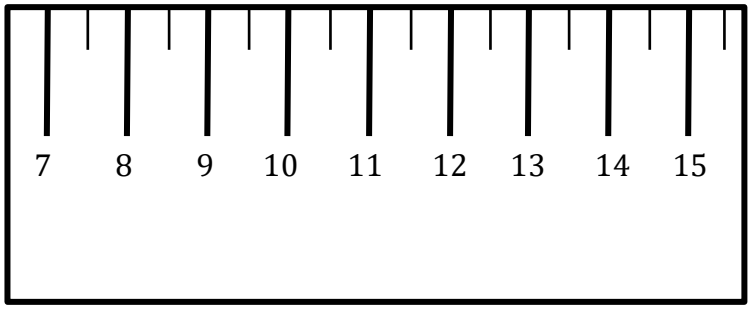
Use the broken ruler to find the perimeter of the book. Record the measurement for each side in centimetres.
Measurement –
Perimeter –

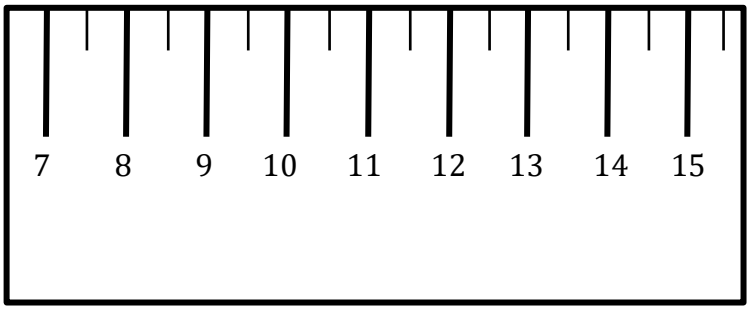
Estimate the length of each side of the envelope first in centimetres.
Estimate –
Perimeter –

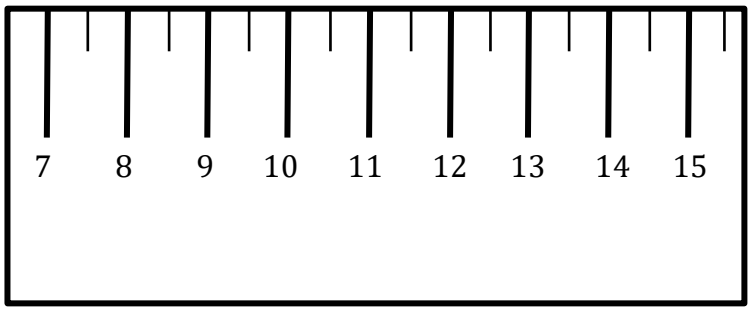
Use your broken ruler to find the perimeter of the envelope. Record the measurement for each side in centimetres.
Measurement –
Perimeter –

Task 4 – Broken rulers









Task 4 -Independent Tasks

Measure these items with the broken rulers.
Estimate the length of each side of the _____ first in centimetres.
Estimate –
Perimeter –

Use your ruler to find the perimeter of the _____. Record the measurement for each side in centimetres.
Measurement –
Perimeter –

Estimate the length of each side of the _____ first in centimetres.
Estimate –
Perimeter –

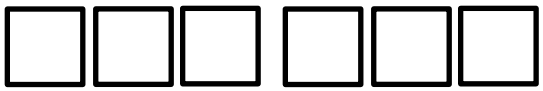
Use your ruler to find the perimeter of the _____. Record the measurement for each side in centimetres.
Measurement –
Perimeter –

Task 5

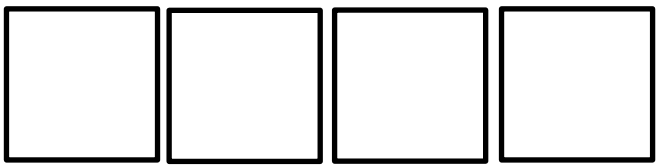
Ayaan is helping his father prepare to put new tiles in the bathroom.
Here is a model of the floor that they need to tile.

They have to pay $1 for each of the smaller tiles and $2 for the larger tiles.
Which is the better deal?

1 cm² tiles



2 cm² tiles



Task 5 -Independent Tasks

Marama is making tivaevae pillowcases for her pillows. She needs to measure the area of the pillow so that she can get the right amount of fabric.

How large is the pillow?

Use one square to find the area of the pillow.

Is the second pillow larger? Find the area and check.

Task 6

How big are our shoes?

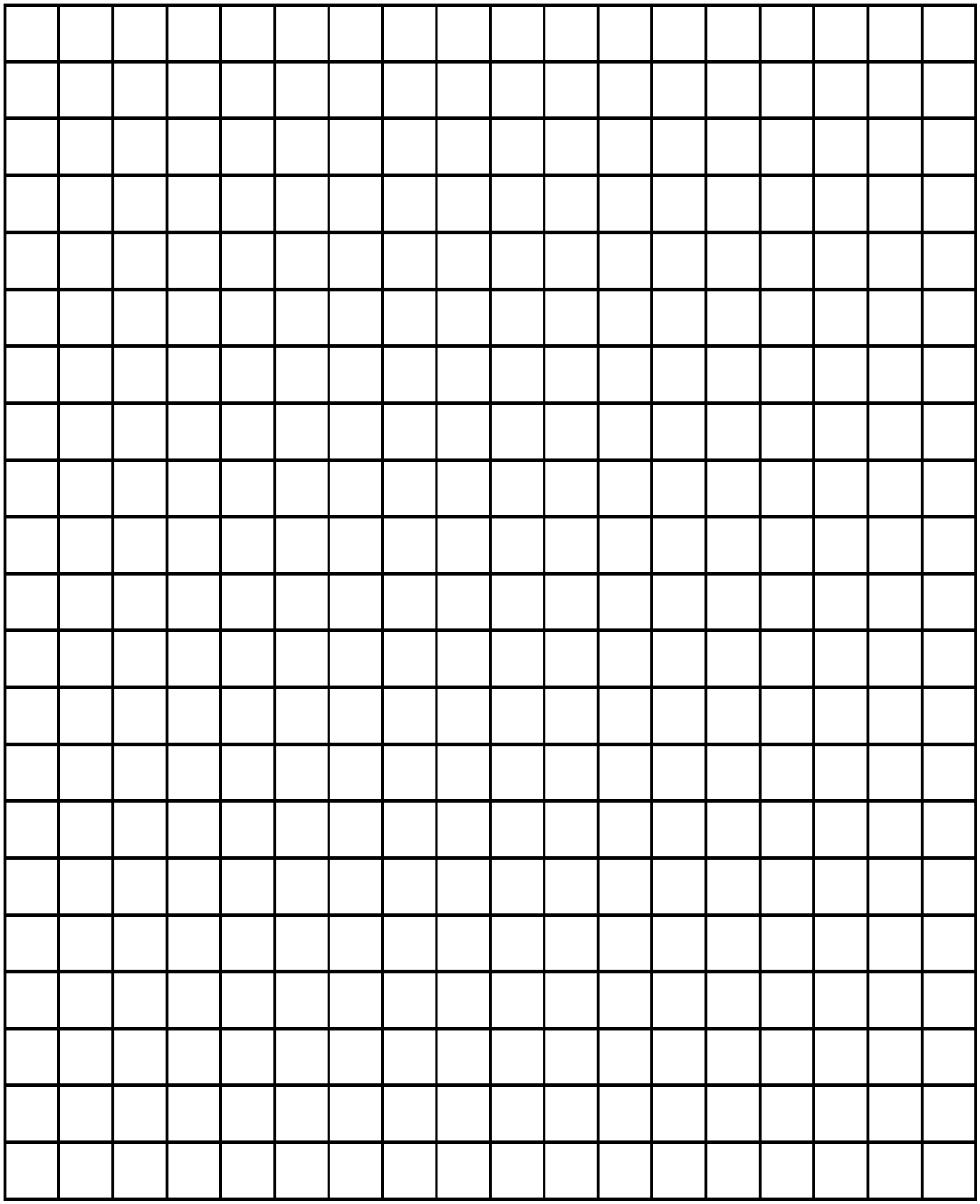
Use the 1 cm grid paper and draw around the left shoe for each person in your group.

What is the area of each shoe?
Record using the correct area unit.

Who has the biggest shoe?

Who has the smallest shoe?

1-CENTIMETRE GRID PAPER



Task 6 -Independent Tasks

Draw around the shape blocks on the 1 cm grid paper and work out the area.

Record the area measurement including the area unit.

Task 7

Look at the net of the box and estimate how many cubes you will need to fill the box.

Check your estimate by making the box and filling it with 1 cm^3 cubes.

Draw a representation which shows the volume of the box.

Task 7 -Independent Tasks

What box has the most volume?

What box has the least volume?

Which boxes have the same volume?

Represent how you found the volume for each box and label which one has the most volume, the least volume, and same volume.

Task 8

What is the volume of the classroom using the unit measure of cubic metres?

Draw a representation to use to explain and justify your solution

Task 8 -Independent Tasks

Estimate the volume of the space using cubic metres. Record your estimate using m^3 and draw a 3D representation to justify this.

Choose 5 spaces around your home and community and write the place. Estimate the volume of the space using cubic metres. Record your estimate using m^3 and draw a 3D representation to justify this.

Task 9

Find the containers that have the same capacity but are a different shape.

Prove that they have the same or almost the same capacity.

Make sure that you explain and justify your reasoning using a range of representations including a number-line.

Task 9 -Independent Tasks

Tasi is making juice for a party. He would like to know how much liquid each container will hold.

Predict the millilitres and litres for each container.

Test your prediction with the measuring jug. Use a number line to represent the measurement.

Task 10

Find the mass of each bag of objects.

Record the mass in grams and represent this on a number-line.

Find the difference in grams between for the bags of objects and put them in order from most massive to least massive.

Task 10 -Independent Tasks

Find the difference in mass between each pair of measures. Represent your solution on an empty number-line.

19 grams and 67 grams
26 grams and 75 grams
183 grams and 57 grams
43 grams and 118 grams
312 grams and 99 grams
708 grams and 409 grams
687 grams and 1 kilogram
1 kilogram and 446 grams

Task 11

Find three things which would have a total mass of one kilogram.

Draw a number line to represent the mass measure of each item and show how altogether their estimated mass is one kilogram.

Now use the scales to check the mass of each object against your estimation.

Draw another number line to represent the mass measure of each item from the scale and show the individual and combined mass.

How close to one kilogram was your estimation?

Task 11 -Independent Tasks

Fill in the missing values:

1000 mL = ___l
1500 mL = ___l and ___mL
1340 mL = ___l and ___mL
1750 mL = ___l and ____mL
2 l = ___mL
1000 g = _____kg
1250 g = _____kg and _____g
1500 g = _____kg and ____g
2000 g = _____kg

Task 12

The yoghurt container label shows a mass of 125 g, but the container is empty.

How can you measure whether the mass would be 125 g when it is full?

Be ready to explain and justify how a unit of measure could prove that the mass of the full container would be 125 g.

Test your solution and unit of measure with other empty containers of different sizes and justify whether their mass when full is correctly recorded.