DEVELOPING MATHEMATICAL INQUIRY COMMUNITIES

Level 1 (Year 1-2) Copy Masters, Measurement: Mass, volume, and capacity

Task 1

Mereana is preparing a chilly bin full of banana poke to sell at the Pasifika festival. She would like to know which chilly bin will fit the most containers of poke. How many can she fit in each chilly bin and still shut the top?

Task 1 – Independent Tasks

Use the different material to measure the volume of each container.

Record the measurement count for each different measurement unit that you used.

Draw a picture to show how you measured the different containers and write the numbers to match.

Task 2

Talia is making herself a jewellery box. She is wondering which box has the largest volume. Can you help her by measuring the volume of the boxes?

Task 2 - 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 3

How many children would fit in the one metre cube?

Can you work out the volume of these big boxes and work out which has the greatest volume, the smallest volume and similar volume?

Task 3 - Independent Tasks

Look at the cubic metre and use this to estimate the volume of the spaces in the pictures. Record your estimations in cubic metres and make sure you use m^3.

What has the largest volume?

What has the smallest volume?

Which have similar volumes?

Task 4

Use the cubes to build different cuboids.

Draw a representation of the cuboid and record the volume.

Task 4 - Independent Tasks

Three cuboids have the same volume but different shapes. Build these cuboids out of 1cm cubes and then draw representations of your models showing how different shaped cuboids can have the same volume.

Task 5

Look at the containers.

Sort them into groups which have about the same volume.

Estimate in litres the volume of the different containers.

Use the litre measure to check whether your estimation was close.

Task 5 - Independent Tasks

Estimate which container would hold the largest volume.

Write down the order from biggest to smallest.

Use the water to measure the volume of each container.

Write down the order from biggest to smallest and compare with your estimate.

Task 6

Make different number lines to match the measurement markings on the measuring jug.

Task 6 - Independent Tasks

Estimate how many millilitres would fit in each container. Write your estimate down.

Use one of the measuring jugs to compare how much liquid in millilitres the container would hold.

Make a number line which shows the scale for each container.

Task 7

Measure the containers using the measuring jug and record the measure in millilitres (mL).

Now measure the container using the cubes and record the measure in cm^3.

What do you notice?

Task 7 - Independent Tasks

Can you find some containers that have the same capacity but a different shape?

Task 8

The post office needs your help to work out the mass of the parcels.

Can you use the cubes to work out the mass of each parcel?

Task 8 - Independent Tasks

These objects will be put into a parcel to send from the post office.

Can you use the cubes to work out the mass of each parcel?

Task 9

Here are some bags. Fill them up with different materials or objects.

Use the balance scale to weigh the sets of objects with the one kilo mass.

Can you find some objects that have the same mass?

Can you find some objects that have less mass?

Can you find some objects that have more mass?

What mass in kilograms do the different sets of objects have?

Task 9 - Independent Tasks

Predict the mass of each object and put them in order from lightest to heaviest.

Check the mass of each object using the balance scale and record the results.

Was your prediction correct?

Task 10

Sose is helping her mother buy some fruit at the supermarket. She needs to know the mass of the fruit to work out the cost.

Can you measure the mass of the fruit and record this on a number-line and using grams?

Task 10 - Independent Tasks

What objects do you think will have a mass of 50g?

What objects do you think will have a mass of 75g?

What objects do you think will have a mass of one kilogram?

Use the scales to find the mass. Represent the measurement using a number line and record the measurement in grams.

Task 11

What is the mass of each object?

Record your results in a table including the object and mass in grams.

Task 11 - Independent Tasks

Can you find two objects that have the same size but different mass?

Can you find two objects that have the same mass but different size?

Task 12

In most ball games, the rules are that balls should have the same mass.

Use the scales to find out the mass of each ball in the set.

Record what you notice.

Task 12 - Independent Tasks

Select one or more of the following assessment tasks (attached at the end of the document) as the independent activity:

M3: Find the volume of boxes.

M3A: Find the mass of books in grams.

M3B: Find objects which have a combined mass of 1 kilogram.