

MASS – CUBIC METRES.

INVESTIGATIONS OVERVIEW PAGE

THIS PAGE IS A SUMMARY OF THE INVESTIGATIONS THAT STUDENTS MAY ENGAGE IN TO DEEPEN THEIR RELATIONAL UNDERSTANDING. INVESTIGATIONS WITH INSTRUCTIONS TO STUDENTS FOLLOW ON SUBSEQUENT PAGES.

- In pairs or small groups, children construct a cubic metre from chenille sticks and straws. *Reflection: How large is a cubic metre?*
- Children investigate the Imperial measurement system, including the history and cubic and liquid units of measurement used to measure volume and capacity. *Reflection: What is the Imperial measurement system?*
- In pairs or small groups, children use their model of a cubic metre, or a commercially available cubic metre, to estimate, measure and calculate the volume and capacity of the room. They draw plans and diagrams of the room, labelling the lengths of the three dimensions. *Reflection: How can we estimate and measure volume and capacity using cubic metres?*
- In pairs or small groups, children use their models of cubic metres, or commercially available cubic metres, to make models. Children compare the volumes of the models, and order them by their volumes. *Reflection: How can we estimate, measure and compare volume and capacity using cubic metres?*
- In pairs, children investigate how many MAB blocks made from 1000 shorts, bricks or loaves of bread can be packed into 1 cubic metre. Children measure the MAB block made from 1000 shorts, brick or loaf of bread and make a scale drawing of one layer. Children then work out the number of layers. *Reflection: How large is a cubic metre?*
- In pairs, children roll a die thrice to determine the length of adjacent edges of a rectangular prism in cubic centimetres or cubic metres. They explain they calculated the volume of the rectangular prism by multiplying the number of cubes in one layer by the number of layers. Children explain they are multiplying 'length' by 'width' by 'height'. *Reflection: How can we calculate volume in cubic centimetres or cubic metres?*

Mass – Cubic Metres.

Sit with some friends.

Construct a cubic metre from chenille sticks and straws.

Reflection: How large is a cubic metre?

Mass – Cubic Metres.

Investigate the Imperial measurement system, including:

- the history,
- cubic units of measurement used to measure volume and capacity,
- liquid units of measurement used to measure volume and capacity.

Reflection: What is the Imperial measurement system?

Mass – Cubic Metres.

Sit with some friends.

Use your model of a cubic metre, or a commercially available cubic metre, to estimate, measure and calculate the volume and capacity of the room.

Draw plans and diagrams of the room, labelling the lengths of the three dimensions.

Reflection: How can we estimate and measure volume and capacity using cubic metres?

Mass – Cubic Metres.

Sit with some friends.

Use your models of cubic metres, or commercially available cubic metres, to make models.

Compare the volumes of the models.

Order the models by their volumes.

Reflection: How can we estimate, measure and compare volume and capacity using cubic metres?

Mass – Cubic Metres.

Sit with some friends.

Investigate how many

- MAB blocks made from 1000 shorts or
- bricks or
- loaves of bread

can be packed into 1 cubic metre.

Measure the MAB block made from 1000 shorts, brick or loaf of bread and make a scale drawing of one layer.

Work out the number of layers.

Reflection: How large is a cubic metre?

Mass – Cubic Metres.

Roll a die three times to determine the lengths of adjacent edges of a rectangular prism.

Decide on a unit of measurement for volume, for example, cubic centimetre or cubic metre.

Calculate the volume by multiplying the number of cubic centimetres or cubic metres in each layer with the number of layers.

Calculate the volume by multiplying the lengths of the adjacent edges.

Explain that you multiplied the 'length' of the rectangular prism by the 'width' of the rectangular prism by the 'height' of the rectangular prism to calculate the volume.

Reflection: How can we calculate volume in cubic centimetres or cubic metres?