

Numeracy Year 9 – Week 8: Measurement; Chance and Data

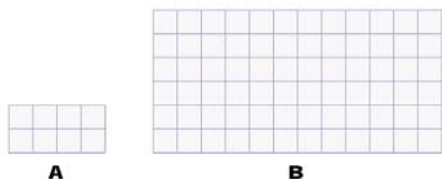
STUDENT WORKSHEET

Focus of the week

Applying links between scale, area and volume

Question 1

Shape A has been enlarged to make Shape B.



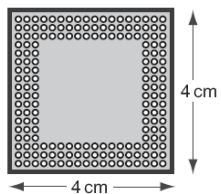
How many times did the area increase?

_____ times

Question 2

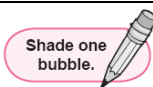
A computer chip has dimensions 8 mm × 8 mm.

A scale drawing is shown below.



What scale is used in the drawing?

- 1 cm represents 5 mm
- 1 cm represents 2 mm
- 2 cm represents 1 mm
- 5 cm represents 1 mm



Question 3

Con built this model using four cubes.



How many **more** cubes would he need to make a model twice the height, twice the length and twice the width of this one?

- 8
- 12
- 16
- 28



Challenge Question

The rate at which objects cool depends in part on the ratio of *the surface area* to *the volume* of the object.

A cube with side length of 2 cm is enlarged by a scale factor of 4.

- a) Calculate the ratio of the surface area to the volume for each object;
- b) How many times faster will the smaller cube lose heat than the larger cube?