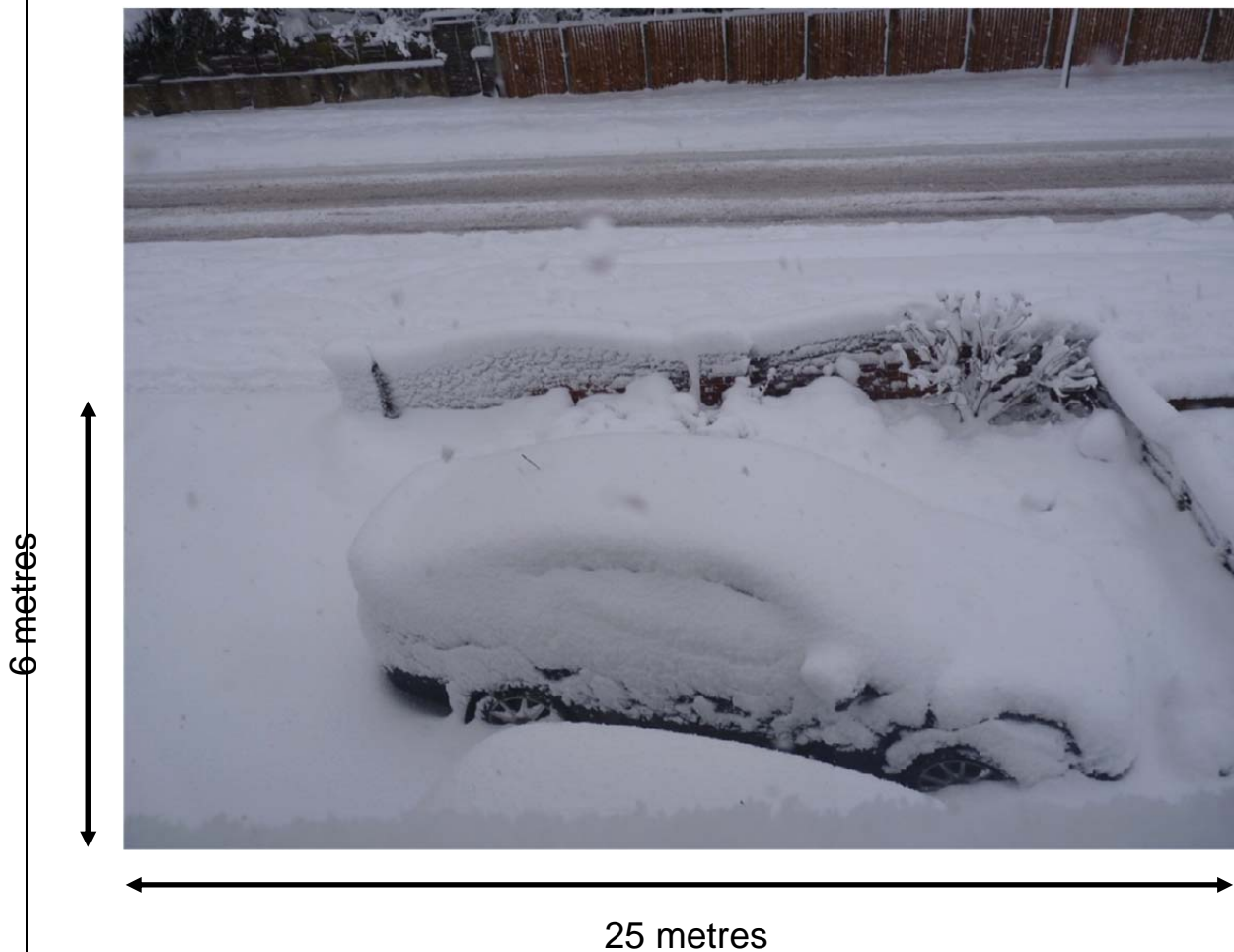# Volume of snow

Show all your working out clearly.

Name _____ Date _____

6 metres

25 metres

My drive way is approximately triangular in shape; its dimensions are shown in the picture above. Recently it was covered by snow. The snow had covered the drive way to a depth of 40 centimetres.

1) What was the volume of the snow on the drive way that I had to clear – in cubic metres?

2) Assuming snow weighs 70kg per cubic metre, what is the total weight of the snow that I need to clear? Give your answer in kilograms and in metric tonnes.

Volume of snow

Answers and curriculum mapping

Adult Numeracy

MSS1/L2.5 Calculate with units of measure within the same system

(a) know the relationship between metric units

(b) know the relationship between common imperial units, where appropriate

MSS1/L2.7 Understand and use given formulae for finding areas and perimeters of regular shapes (e.g. rectangular and circular surfaces) (a) know what is meant by perimeter, radius, diameter, circumference (b) recognise the symbol for pi, and know its approximate value (c) know how to make substitutions in a formula and work out the result

MSS1/L2.9 Understand and use given formulae for finding volumes of regular shapes (e.g. a cuboid or cylinder)

(a) know that measurements must be in the same units before calculating volume

(b) recognise the symbol for pi, and know its approximate value

(c) know how to make substitutions in a formula and work out the result

http://www.excellencegateway.org.uk/page.aspx?o=sflcurriculum

Functional Maths

Ideal for underpinning the following Coverage and Range statements.
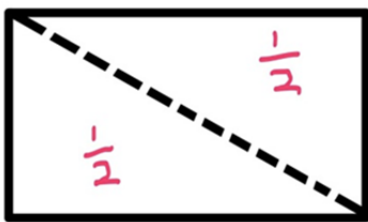
Level 2

Carry out calculations with numbers of any size in practical contexts, to a given number of decimal places

Find area, perimeter and volume of common shapes

Use, convert and calculate using metric and, where appropriate, imperial measures

http://www.ofqual.gov.uk/qualification-and-assessment-framework/89-articles/238-functional-skills-criteria

Answers

Note: area of a triangle is ½ x b x h

Where b = length of the base, and h = perpendicular height

(Alternatively, think of it as half the area of rectangle - in this case the front garden – see diagram)

Graphic adapted from http://blogs.saschina.org/emily02pd2017/category/math/

Step 1

Area of driveway = 6m x 25m x 0.5 = 75 m^2

Step 2

Multiply the area of the driveway by the height of snow to find the volume of snow. Make sure all your measurement are in the same units first (40cm snow = 0.4m)

75m^2 x 0.4m = **30m^3 snow**

Step 3

Multiply the volume of snow by 70kg to find total weight: 30 x 70 = 2100kg

Divide your answer by 1000 to convert it from kilograms to metric tonnes

2100/1000 = **2.1 tonnes snow**