

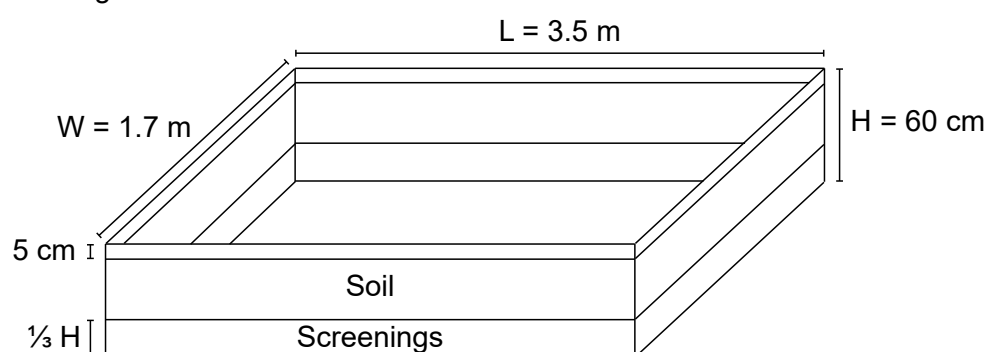
Numeracy in Construction

Calculating Volume

Soil and Screenings: Extension

In landscaping and construction, many different materials are used to cover areas of ground, such as soil, sand, screenings, mulch and crushed concrete. Typically, these materials are measured by volume, a three-dimensional measurement calculated using the formula $V = L \times W \times H$.

You have been contracted to construct two vegetable-growing boxes for a community garden. The internal measurements of the boxes are length = 3.5 m, width = 1.8 m and height = 60 cm. The boxes are to be filled to one-third of their total height with screenings, to allow for drainage, then filled with soil to a height 5 cm below the top of the box. This is shown in the diagram below.



1. a) Calculate the volume of screenings you will need to complete the job. Show your working and give your answer in m^3 . Remember that there are two boxes.

b) Calculate the volume of soil you will need to complete the job. Show your working and give your answer in m^3 . Remember that there are two boxes.

2. The supplier sells soil and screenings in 0.5 m^3 increments.

a) What quantities of screenings will you actually need to order and how much will be left over? Show your working.

b) What quantities of soil will you actually need to order and how much will be left over? Show your working.