

Module 7: Developing the personal maths skills of teachers and assessors

Developmental task

Space and shape

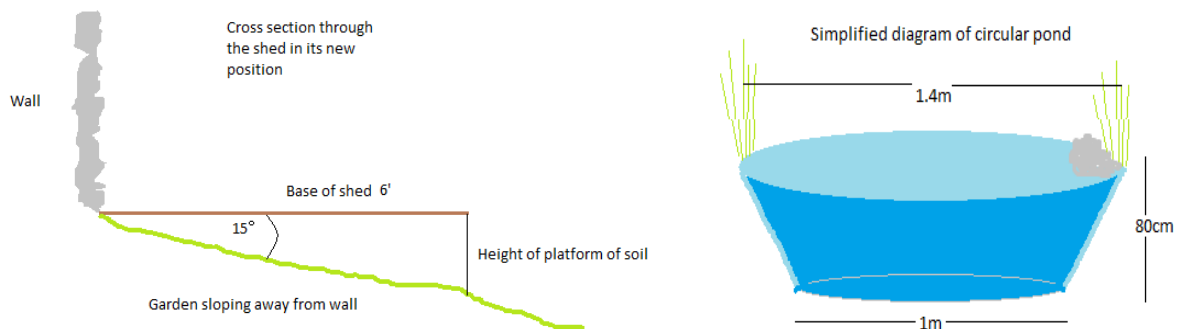
Personal and public life context

You are redesigning your garden and two important elements of this are moving the shed from its current position and creating a circular pond.

The shed is on the level where it stands at the moment but you want it in the shady part of the garden which is on a uniform downward slope from the back wall of the garden. The angle of slope here is 15° to the horizontal. The dimensions of the base of the shed are 3' by 6'.

You have decided to use the soil you dig out for the pond to build up a level platform for the shed to sit on.

Your maximum dimensions for the pond are a diameter of 1.4m at the surface and 1m at the bottom. You want a constant depth of no more than 80cm.



Will there be enough soil from the pond to make the level platform for the shed?

When you've carried out your calculations consider the options you have open to you; these could include selling your old shed and buying a larger one.

Explore the relationship between the length and breadth of the shed and the volume of soil required for the platform. Is it a linear relationship? Illustrate your answer with further examples.

What other factors will you need to take into consideration for this project?