

Investigating the maths inside:

Maths in 3D

Activity 1

Be a Zebedee



How does a Zebedee work?

This activity is designed to simulate how the Zebedee works in two dimensions. Instead of light, this simulation activity uses sound to identify the positions.

# Laying out the course

Your teacher has prepared a theoretical ‘course’. You will receive a diagram of the course with the lengths marked on it.

Your group’s first job is to lay out the course on the ground as accurately as possible.

First, lay out the transversal (or base line) and mark with either chalk or tape. You could use an existing straight line from a netball court or similar. Measure accurately.

Next, measure off the boundary points, which are perpendicular to the transversal. You will need to consider how your group can accurately identify a right angle. Label the boundary points A, B C etc. according to the diagram.

# Activity

You will need one group member at each of the boundary points. They each need to know how far away from the transversal their point is.

One student is the Zebedee and is blindfolded. Another student is the Zebedee Helper.

The Zebedee is helped to walk along the transversal. As the Zebedee moves closer to a boundary point, the student standing on that point calls out the distance they are away (e.g. “three metres!”). When the Zebedee has decided the student calling out is on a line perpendicular to the transversal, the Helper records the position on the transversal, by marking it with the appropriate letter.

The Zebedee continues along the transversal, stopping when closest to the next student and so on.

When the Zebedee has finished, the blindfold is removed and the information recorded on a sketch diagram.

# Mathematical follow-up activity

Each member of the group now has to draw an accurate scale diagram using the information that has been gathered. You may be given the scale or asked to work it out yourselves.

Do all of your group’s drawings look the same? If not, how do they differ?

Do your drawings look like the original one your teacher produced? What can you say about the accuracy of the ‘sound’ method? Why might there be differences? How could you improve the accuracy?