

Grades 9-12 (S)

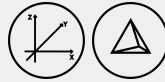
Duration: 20 min

Tools: one Logifaces Set / class,
Geogebra

Individual work

Keywords: GeoGebra, Coordinates,
Polygons, 3D coordinate system

527 - Coordinates in GeoGebra



MATHS / COORDINATE GEOMETRY



LOGIFACES
METHODOLOGY
Erasmus+

TEACHER

Logifaces

2019-1-HU01-KA201-0612722019-1

DESCRIPTION

Students draw the Logifaces blocks in GeoGebra so that one vertex of the base is at the origin and another vertex of the base is at $(4, 0, 0)$.

LEVEL 1 Students calculate the coordinates of the vertices, plot them and connect the endpoints of the edges by a segment in GeoGebra.

LEVEL 2 Students calculate the coordinates of the vertices, then connect the vertices of each face using the polygon command in GeoGebra.

This step allows us to determine the areas of the polygons or the surface area of the polyhedron easily, see exercise [528 - Read the Results in GeoGebra](#).

LEVEL 3 Students calculate the coordinates of the vertices, then connect the vertices of the polyhedron.

HINT For the blocks of truncated prism shape, create a prism and a pyramid, these are built-in commands in GeoGebra.

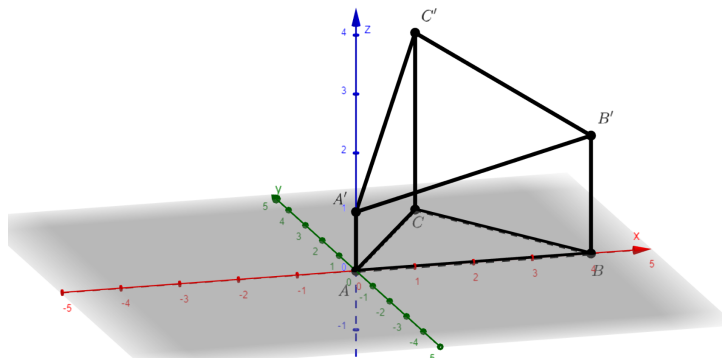
This step allows us to calculate the volume of the polyhedron easily, see exercise [528 - Read the Results in GeoGebra](#).

SOLUTIONS / EXAMPLES

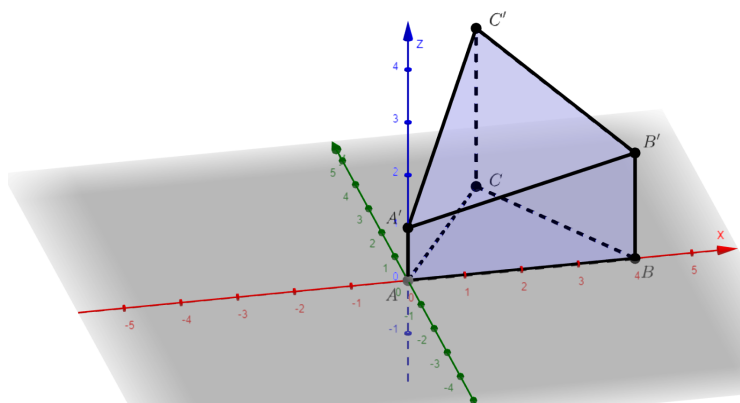
To calculate the vertex coordinates of each block, see exercise [526 - Calculate the Coordinates](#).

We show below the solutions for block 123.

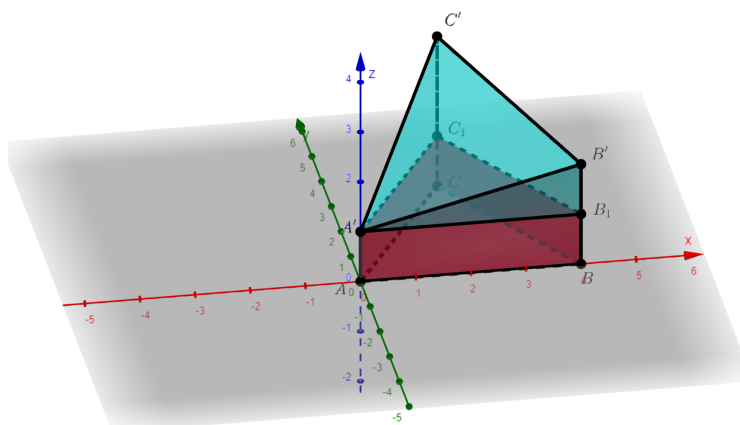
LEVEL 1 Use the Point and Segment commands to represent vertices and edges.



LEVEL 2 Use the Polygons command to represent the faces as polygons.



LEVEL 3 Use the Prism and Pyramid commands to represent the block.



PRIOR KNOWLEDGE

Coordinates of points in the 3 dimensional coordinate system, Basic GeoGebra skills

RECOMMENDATIONS / COMMENTS