

Creating 3D Shapes

MATHEMATICS Age 9-10



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Learning Aims:

- To identify 3D shapes from 2D representations.
- To draw shapes using given dimensions and angles.
- To create content using a range of programs.

CONTEXT

Before I started working for Avantis I was a Year Five teacher for three years and I was always looking for new ways to embed computing across the curriculum. One really exciting way to do this is using Paint 3D to create 3D models of shapes that can then be viewed and checked using ClassVR headsets. Giving students the ability to actually create their own shapes using simple computer software deepens both their understanding of the properties of shape and their digital literacy skills.

PRACTICAL SESSION



Paint 3D

To start this session I talk with students about the differences between 2D and 3D shapes and how they relate to one another. We then look at how a net relates to its 3D counterpart using a printed cube net – I like to use the ARCube net for this, as it can then be used with the resultant 3D models! After introducing the basics of using Paint 3D I then challenge students to create 3D models of some pre-prepared nets. These can be grouped to differentiate for varying abilities or completed in mixed ability pairs. As the students complete their shapes, I can upload them to My Cloud on the ClassVR portal and upload the model directly to them for evaluation. Does it look correct? Is it symmetrical? Do you need to edit it? The students can then use their ARCube to manipulate their creation and study it from all angles before deciding if they need to do any further editing.

IMPACT ON LEARNING

Exploring shape in a new and exciting way using Augmented Reality gives students a broader depth of experience and a greater frame of reference when facing challenges in the future. When it comes to solving problems relating to 3D shape they will have a tangible first-hand memory of creating shapes from nets. Even more importantly, they are experiencing and using new technologies to help them understand the world and simultaneously improve their overall digital literacy. While Paint 3D is a relatively simple modelling program it can lead into all sorts of other digital forms of expression and allows for creativity in an exciting and innovative new medium.

