



Teacher Notes

3D Modelling

Introduction

A lesson designed to help children understand and appreciate 3D modelling, with a focus on how it is being used within FIFA Gaming and the World Cup. The lesson begins with an exploratory task, helping children understand how 3D shapes are created. It then allows the children to study the history and importance of 3D modelling in real life. The children are then tasked with creating 3D model football boots using the programme 3DCAD. It ends by exploring career options within this sector, with useful videos from real-life digital artists, discussing their careers and the journeys they had getting there. This lesson covers multiple cross-curricular aims, including: Computing, Maths, D&T History and Careers. We advise the lesson to be completed over an hour and a half, for example during an afternoon or two separate lessons.

Suggested Learning Outcomes

- To recognise the varied uses of 3D modelling
- To apply skills to create a 3D model for a given criteria
- To design a product considering the functionality of the object

Curriculum Aims Covered

Careers:

- All young people to understand the full range of opportunities available to them, to learn from employers about work and the skills
- Encourage people of all ages and backgrounds to consider the value of STEM qualifications and careers
- Find out about a wide range of jobs and understand how the subjects they learn at school connect to their future

Maths

- identify 3-D shapes, including cubes and other cuboids, from 2-D representations
- recognise, describe and build simple 3-D shapes, including making nets
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Computing

- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals
- use technology purposefully to create, organise, store, manipulate and retrieve digital content

D&T

- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

History

- a significant turning point in British history
- changes in an aspect of social history



Lesson Plan

Starter: From 2D to 3D

Ask the children to make a 3D shape from the 2D paper. Discuss nets. There are some provided if needed, however, try and let the children complete this task without the nets, if possible.

Teach: 3D Modelling Changing the Game

Go through the slides to learn more about the importance of 3D modelling and watch the videos to see how FIFA are using it in the 2022 World Cup and in their game FIFA 22.

Go through the slides to show the children where the concept of 3D modelling came from and how it has changed and evolved over time.

Teach: 3D CAD

The children are going to be using a programme called 3D CAD <https://3dc.io/app/> This works on PCs and on tablets by following the link.

Let the children have some time to explore the programme before giving them instructions.

Practise: Ask the children to watch the video and follow along to see if they can make a 3D model of a tower. Stop the video in parts if needed.

Design:

Ask the children to design their own football boot for FIFA. Go through the slides to get them thinking about functionality. Then get them to design their products on paper first, thinking about shape and colour. It may be worth having some real 3D shapes available for them to explore but remind them they can manipulate the shapes on the programme.

Model:

It is now time for the children to model their design using 3DCAD. There is a video demonstrating how this can be achieved. However we advise having this on in the background and stopping it at the talking points to give the children some extra understanding of how to use the programme.

Plenary: Present/ Careers

Present

Present their work to the rest of the class to demonstrate what they have learnt. Don't forget to send us your work so we can display it for other students and your parents to see too.

education@archivesit.org.uk

Careers

Watch the videos from a professional digital artist, and discuss the different jobs they could do in this sector if they enjoyed it.

Resources:

Powerpoint
Design Sheets
Net Sheets
Tablets/ Computers

Health and Safety:

- Ensure the children are careful when using devices, explain the value of the equipment and how to be safe with it.
- Ensure waterbottles are removed from tables