

Year 9 - Animations

Unit introduction

Films, television, computer games, advertising, and architecture have been revolutionised by computer-based 3D modelling and animation. In this unit learners will discover how professionals create 3D animations using the industry-standard software package, Blender. By completing this unit learners will gain a greater understanding of how this important creative field is used to make the media products that we consume. Sessions will take learners through the basics of modelling, texturing, and animating; outputs will include 3D models, short videos, and VR. Links are made throughout to computer science, computational thinking, and the world of work. Tools and techniques learnt in this unit can also be used for 3D printing.

Overview of lessons

Lesson	Brief overview	Learning objectives
Lesson 1: Move, rotate, scale, colour	In this introductory lesson to the unit, learners will look at the impact of 3D animation on the wider world, linking to their own experiences. Learners will be introduced to the basics of making models in Blender: deleting and adding objects; moving, rotating, scaling, and colouring. Learners should finish the lesson having made their own 3D model of a snowman — some will have made a simple snow scene. Links should be made between the naming and reuse of colours, and the computer programming concept of variables.	<ul style="list-style-type: none">• Add, delete, and move objects• Scale and rotate objects• Use a material to add colour to objects
Lesson 2: Animation, names, parenting	This second lesson covers the basics of keyframe animation, the technique behind how 3D digital animations are made. Learners will be able to explain the differences between keyframing and stop motion animation, and give reasons for why keyframing might be preferable in computer animation. Learners will gain experience of using the Blender timeline to add, delete, and move keyframes	<ul style="list-style-type: none">• Add, move, and delete keyframes to make basic animations• Play, pause, and move through the animation using the timeline

	while they animate their own winter scene from the last lesson, or use the template winter scene provided. Finally learners will use naming and parenting to organise their animations.	<ul style="list-style-type: none">• Create useful names for objects• Join multiple objects together using parenting
Lesson 3: Complex models and colours	This third lesson covers more complex modelling techniques that can be used to build realistic-looking models. Starting from primitive objects, such as cubes and cylinders, learners will use edit mode and the extrude, loop cut, and face editing commands to make a rocket and a chair. Once they have completed their models, they will look at how they can apply different colours to different parts of the same model.	<ul style="list-style-type: none">• Use edit mode and extrude• Use loop cut and face editing• Apply different colours to different parts of the same model
Lesson 4: Organic modelling	This fourth lesson covers modelling techniques that are used to make organic/natural-looking models. To do this, learners will first see the importance of breaking symmetry in their models to mimic the real world. The lesson then covers several modelling tools that allow for more natural-looking images, including proportional editing, the knife tool, and subdivision.	<ul style="list-style-type: none">• Use proportional editing• Use the knife tool• Use subdivision
Lesson 5: Lights, camera, render	This fifth lesson teaches learners how to set up a film shot for rendering. This includes adding extra lighting, adjusting the camera, picking a render mode, and changing the render settings. Learners will understand the range of lights available in Blender, how to set up a camera for a shot, and the benefits and drawbacks of using ray tracing in their films.	<ul style="list-style-type: none">• Add and edit set lighting• Set up the camera• Compare different render modes
Lesson 6: Project	This sixth and final lesson brings together all the skills that learners have covered so far. Learners will create a 3–10 second video based on the plan they made for homework after the last lesson. They will self-assess against a set of skills, and ask a peer to assess their work when it is completed.	<ul style="list-style-type: none">• Create a 3–10 second animation• Render out the animation

Progression

This unit progresses learners' knowledge and understanding of creating animations using Blender.

Curriculum links

[National curriculum links](#)

- Create, reuse, revise, and repurpose digital artefacts for a given audience, with attention to trustworthiness, design, and usability.