Topic Sequence:

1	2
Cyber Security	Animations

Topic Overview:

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 and short videos.

Links:
Creative iMedia – Creating a Visual Identity

Lesson Sequence:

Lesson 1: Move, rotate, scale, colour - 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. Links should be made between the naming and reuse of colours, and the computer programming concept of variables.

Lesson 2: Animation, names, parenting - This 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.

Lesson 3: Complex models and colours - This 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.

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.

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.

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.

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

Sequence of Lessons:

1	Lesson 1: Move, rotate, scale, colour
2	Lesson 2: Animation, names, parenting
3	Lesson 3: Complex models and colours
4	Lesson 4: Organic modelling
5	Lesson 5: Lights, camera, render
6	Lesson 6: Project

Topic Resources:

Knowledge Map:	9.2 Animations	Any other Resources:	Blender

Assessment:

Knowledge:	None
Application of Knowledge:	Students are assessed via a rubric on their final project

Supportive Reading:

Blender For Dummies	Blender For Dummies: Amazon.co.uk: van Gumster, Jason: 9781119616962: Books
Blender Tutorials	Tutorials — blender.org