

<b>Title:</b>	Exploring Game Engines
<b>Level:</b>	Entry Level 3
<b>Credit value:</b>	3
<b>GLH:</b>	27
<b>Unique Reference Number:</b>	K/651/8480
<b>Sector Subject Area:</b>	14.1: Foundations for Learning and Life.
<b>Aim:</b>	This unit introduces learners to the basic functions of a game engine and how it can be used to create simple digital scenes. Learners will explore what game engines do, use their main tools and features, and build a simple visual environment using digital assets.
<b>Assessment Type:</b>	Assessment of this unit will be through an internally set and internally assessed portfolio of evidence.
<b>Assessment Guidance:</b>	Assessment decisions for skills-based learning outcomes must be made during the learner's normal work activity. Skills-based assessment must include direct observation as the main source of evidence and must be carried out over an appropriate period of time.

### Learning outcomes

*The learner will:*

1. Understand what a game engine is and what it can be used for.

#### **Delivery content:**

The aim of this learning outcome is to provide the learners with the knowledge and skills to understand what a game engine is and how it supports the creation of digital games or interactive scenes.

The learner must:

- 1.1 Identify what is meant by the term **game engine**.
- 1.2 Give examples of different types of game engine used to create games or interactive content.
- 1.3 Describe one use of a game engine in producing a digital experience.

2. Know how to explore basic tools and features within a game engine.

#### **Delivery content:**

The aim of this learning outcome is to provide the learners with the knowledge and skills to use the main tools and features of a game engine through guided exploration and practice.

The learner must demonstrate that they can:

- 2.1 Identify key **tools and features** used to create or edit a scene.
- 2.2 Add or move simple objects within a scene using given instructions.
- 2.3 Save or export their work in an appropriate format.

3 Understand how to create a simple visual environment using a game engine.

**Delivery content:**

The aim of this learning outcome is to provide the learners with the knowledge and skills to use digital assets to build and arrange a basic visual environment that shows awareness of layout and design.

The learner must demonstrate that they can:

- 3.1 Combine or create simple **digital assets** to build a basic scene.
- 3.2 Arrange and adjust assets within the scene to produce a clear **visual layout**.
- 3.3 Save and present the completed **visual environment** appropriately.

**Scope of Training**

The Scope of Training identifies areas that must be covered during the delivery of this unit. This is the minimum that is expected but tutors are expected to include other areas, knowledge of which will benefit their learners, based on location, types of work available and from the tutors own professional experience.

**Requirements**

**Game engine:**

**Definition:**

A digital software environment used to create, edit, or display interactive scenes or games. Examples include, for example, Unity, Unreal, or Godot.

**Teaching must include:**

- The purpose of a game engine in developing digital games or simulations.

	<ul style="list-style-type: none"> <li>• Recognising that a game engine provides tools to manage graphics, sound, and interaction.</li> <li>• Awareness of different types of engines and their accessibility for education use.</li> </ul> <p><b>Teaching could include:</b></p> <ul style="list-style-type: none"> <li>• Discussing how game engines are used in other industries (for example, design, film, or education).</li> <li>• Exploring open-source or free educational versions of engines.</li> <li>• Comparing similarities between different <b>game engines</b>.</li> </ul>
<p><b>Tools and features:</b></p>	<p><b>Definition:</b> Elements within a game engine interface used to view, edit, and manage content (for example: Scene View, Hierarchy, Asset Manager, or Inspector).</p> <p><b>Teaching must include:</b></p> <ul style="list-style-type: none"> <li>• Demonstrating how to navigate the workspace and locate core panels or menus.</li> <li>• Using tools to add, move, or adjust objects within a scene.</li> <li>• Understanding the importance of saving and naming files correctly.</li> </ul> <p><b>Teaching could include:</b></p> <ul style="list-style-type: none"> <li>• Exploring basic camera or lighting settings.</li> <li>• Viewing simple animations or effects added through default tools.</li> <li>• Comparing how different engines display their editing interfaces.</li> </ul>
<p><b>Digital assets:</b></p>	<p><b>Definition:</b> Pre-made or learner-created media items such as images, sounds, textures, or 3D models used to construct a digital scene.</p> <p><b>Teaching must include:</b></p> <ul style="list-style-type: none"> <li>• Identifying examples of assets (for example: textures, models, or sounds).</li> <li>• Importing and placing assets into a scene using guided steps.</li> </ul>

	<ul style="list-style-type: none"> <li>• Recognising the difference between pre-made and self-created assets.</li> </ul> <p><b>Teaching could include:</b></p> <ul style="list-style-type: none"> <li>• Editing or customising assets using simple tools.</li> <li>• Creating new digital assets using drawing or modelling software.</li> <li>• Discussing copyright and safe use of free or open resources.</li> </ul>
<p><b>Visual layout:</b></p>	<p><b>Definition:</b></p> <p>The arrangement and positioning of objects, assets, and elements within a digital scene to produce a clear, balanced, and visually engaging composition.</p> <p><b>Teaching must include:</b></p> <ul style="list-style-type: none"> <li>• Using positioning tools to adjust where items appear in a scene.</li> <li>• Recognising balance, spacing, and proportion in simple design layouts.</li> <li>• Evaluating the clarity or readability of the scene design.</li> </ul> <p><b>Teaching could include:</b></p> <ul style="list-style-type: none"> <li>• Applying colour or contrast to highlight important elements.</li> <li>• Comparing examples of effective and ineffective layout choices.</li> </ul> <p>Exploring how visual layout contributes to user experience or gameplay.</p>
<p><b>Visual environment:</b></p>	<p><b>Definition:</b></p> <p>A digital space or scene created using assets within a game engine that shows a coherent setting or design.</p> <p><b>Teaching must include:</b></p> <ul style="list-style-type: none"> <li>• Building a simple scene from selected objects or assets.</li> <li>• Adjusting object placement, scale, or colour to improve presentation.</li> <li>• Understanding that environments can be 2D or 3D depending on the engine.</li> </ul> <p><b>Teaching could include:</b></p>

	<ul style="list-style-type: none"><li>• Exploring the effect of light, texture, or sound within a scene.</li><li>• Comparing how visual style affects mood or gameplay atmosphere.</li><li>• Sharing completed scenes with peers for feedback.</li></ul>
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