**3D Digital Game Art**

Core Competencies

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| **Core competencies and standards for WorldSkills UK Skills Competitions activities** | **Qualifier** | **UK Final** | **Team UK** |
| **Competency** | 3D Modelling | **x** | **x** | **x** |
| **Standards** | Select an appropriate piece of 3D modelling software to begin the model. E.g. 3DS Max or Maya for hard surface modelling, or a sculpting tool like ZBrush for organic sculpts.Utilise skills in sculpting, edge modelling, and box modelling to produce the basic form of the modelUse tools and modifiers to create further details on the modelConstantly review the model from all angles to determine refinements, improvements, and additional detail |
| **Competency** | UV Unwrapping | **x** | **x** | **x** |
| **Standards** | Use UV unwrapping tools to project maps on to all the surfaces of the 3D assetSeparate the surface into appropriate shells to flatten over the UV space.Organize the shells to make the most of spaceGroup shells with similar colours togetherExport the UV coordinates to a texture tool or painting software |
| **Competency** | Texturing | **x** | **x** | **x** |
| **Standards** | * Select an appropriate piece of software to produce textures and materials e.g. PhotoShop and Substance Designer.
* Paint a variety of physical materials and adapt to the art style set out in the brief.
* Paint or engineer a specular map for controlling shine and glossiness of a surface
* Paint an opacity map (if required) to handle complex objects or sections of an asset
* Export a normal map from an appropriate piece of software
* Render an ambient occlusion map to emphasize shadows.
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| **Competency** | Idea Creation and Concept Art |  | **x** | **x** |
| **Standards** | * Digitally paint demonstrating form, line, shading, perspective, proportion, light, and shadow.
* Create customised brushes to produce appropriate effects and make efficient use of time.
* Choose appropriate software to paint the concept art pieces in with maximum production in the swiftest time
* Review and select each piece of concept art to inform the look of the finished 3D models
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| **Competency** | Rigging and Animation |  |  | **x** |
| **Standards** | * Create and link bones together to form the structure of the asset.
* Set up a parent child structure for FK or IK.
* Skin the mesh and paint how the bones influence the 3D model.
* Set simple animation keys to test the motion of the asset in an engine.
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| **Competency** | Export to Engine |  |  | **x** |
| **Standards** | * Choose and use a renderer, pose the object and select appropriate lighting and settings to highlight the best qualities of the asset.
* Export 3D models and animation into a games engine.
* Select an appropriate game engine and test the asset for model, UV, and deformation errors.
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