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| **Assignment** | |
| Qualification | BTEC Extended Diploma in Computer Games Design |
| Unit number and title | Unit 66: 3D Modelling  Unit 67: 3D Animation  Unit 68: 3D Environments |
| Start date | 28/09/2018 |
| Deadline | 26/10/2018 |
| Assessor name | James Tedder |
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| Assignment title | Understanding theory and applications of 3D |
| As a junior games designer working for a small games developer in the East Midlands, your manager has you to explain the theory and applications of 3D Modelling, Animation and Environments using detailed illustrative examples.  **Learning Outcomes for Unit 66/67/68:**  **P1** Summarise accurately theory and applications of 3D with some appropriate use of subject terminology.  **M1** Explain theory and applications of 3D with reference to detailed illustrative examples and with generally correct use of subject terminology.  **D1** Comprehensively explain theory and applications of 3D with elucidated examples and consistently using subject terminology correctly.   |  | | --- | | **The work for this assignment must be submitted in accordance with the instructions given at** **the end of each task within the assignment**  **Students are reminded that late work will not be accepted for assessment. Student Declaration**  I declare that all the work submitted for this assignment is my own work, or in the case of group work, the work is **my work** I completed as part of the group, and that no part of it has been copied from any source (other than for referencing).  I understand that if **any** part of the work submitted for this assignment is found to be plagiarised  **none** of the work submitted will be allowed to count towards the assessment of the assignment.  Signed: Date:\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| **Task 1**  Create an on-line presentation (blog), written report, video or other form of presentation which shows your understanding of theory and applications of 3D.  Analyse 3D Models, Animations and Environments, using clear and relevant illustrative examples.  Your analysis must include Applications of 3D, Displaying 3D Polygons animations, Geometric  Theory, Mesh Construction, 3D Development Software and Constraints.  Min 750 words for Word report.  **Include:**  Applications of 3D: eg models, product design, animations, TV, film, web, games, education, architectural walk-through  Displaying 3D polygon animations: application programming interface, eg Direct3D, OpenGL; graphics  pipeline, eg modelling, lighting, viewing, projection, clipping, scan conversion(rasterization), texturing and shading,  display; rendering techniques (radiosity, ray tracing); rendering engines; distributed(parallel) rendering techniques;  lighting; textures; fogging; shadowing; vertex and pixel shaders; level of detail  Geometric theory: vertices; lines; curves; edge; polygons; element; face; primitives; meshes, eg wireframe;  coordinate geometry (two-dimensional, three-dimensional); surfaces  Mesh construction: box modelling; extrusion modelling; using common primitives, eg cubes, pyramids,  cylinders, spheres  3D development software: software, eg 3D Studio Max, Maya, Lightwave, AutoCAD, Cinema 4D,  Blender, Mudbox; file formats, eg 3ds, .mb, .lwo, .C4d, .dxf, .obj; plug-ins  Constraints: polygon count; file size; rendering time  **Indicative characteristics:**  **Merit** learners will correctly explain the use of 3D within the interactive media industry and how 3D graphics are displayed including explanation of geometric theory and mesh construction. These must be explained clearly, using generally appropriate subject terminology. For this grade the evidence will include detailed illustrative examples but you will not have elaborated to show how they illustrate the points being made. You will use technical vocabulary for the most part correctly, but may make mistakes or be unsure about usage at times.  **Distinction** learners will explain fully and clearly the use of 3D within the interactive media industry and the ways in which 3D graphics are displayed, including consideration of geometric theory and mesh construction, using explicit examples of particular 3D objects to provide a clear explanation of the points being made. They will justify points made using supporting arguments or evidence and draw out of an example precisely what it is about it that exemplifies the point it illustrates. Fuller and more extensive explanation, the better application of examples and provision of argument to support points made will discriminate between this grade and the merit. Technical vocabulary will be secure and used correctly and confidently at all times. | |

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| This brief has been verified as being fit for purpose | | | |
| Assessor | James Tedder | | |
| Signature |  | Date |  |
| Internal verifier | Wayne Gallear | | |
| Signature |  | Date |  |