**BTEC Assignment Brief**

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| **Qualification** | **Edexcel BTEC Level 3 Extended Diploma in Computing (RQF)** |
| **Unit or Component number and title** | **Unit 11:** **Digital Graphics and Animation** |
| **Learning aim(s)** (For NQF/RQF only) | A Investigate the purpose and principles of digital graphics and animation  B Design digital graphics and animation products to meet client requirements  C Develop digital graphics and animation products to meet client requirements. |
| **Assignment title** | **Digital Graphics and Animation** |
| **Assessor** | Paul Mather |
| **Hand out date** | 15/9/22 |
| **Hand in deadline** | 15/12/22 |
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| **Vocational Scenario or Context** | You are employed by Tametown Digital Media, and you will be designing and creating some 3D promotional material for a new science fiction web series.  ***Pathfinder.***  In the year 2161, the gallant crew of the explorer ship ‘UNS Pathfinder’ are on a mission to locate new habitable worlds for future colonisation. On their voyages they will encounter strange new worlds, alien life and mysterious artefacts from ancient civilisations. |

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| **Task 1** | | **Task 1 - Principles of Digital Imagery (P1, P2, M1, D1)**  1a. Explain how digital data can be used to represent images.  You need to explain in some detail how 2D images can be stored digitally. You should discuss the following:   * Raster images   + Resolution   + Sampling   + Colour modes   + Bit depth   + Compression methods   + File types * Vector images   + Primitives   + Paths   + Nodes   + Voxels   1b. Explain in some detail how 3D images are stored digitally. You should discuss the following:   * Coordinate Systems   + Left/right hand   + Local   + 3D world   + 3D Viewport   + Cameras   + Geometrical perspectives   1c. Explain the basic principles of animation. You should include:   * Key frames * Tweening * Motion Capture * Wire framing * Coordinate systems * Environmental physics * Behavioural animation   + Autonomous actors   + Crowds and flocks   1.d Evaluate the factors than can impact on the quality and usability of digital images.   * Explain how a range of factors can affect the final quality of a digital image.   + Platform   + Medium   + File format   + Tools used * How does the target audience impact on what the final images should look like in terms of quality and usability? * How would the purpose of the image impact on choices in creating a digital image?   + e.g. education, entertainment, illustration * What are the legal and ethical considerations one should be aware of when creating digital images?   *Evidence format: A report, or power point, vlog or audio file or similar.* |
| **Checklist of evidence required** | | A concise document in a suitable format. |
| **Criteria covered by this task:** | | |
| Unit/Criteria reference | To achieve the criteria you must show that you are able to: | |
| P1 | Explain the characteristics of digital graphics and animation and methods of processing them in digital format. | |
| P2 | Explain the impact of using different tools and techniques to process and manipulate digital graphics and animation in digital formats. | |
| M1 | Analyse how the representation of digital graphics and animation in digital format impact on their usability and accuracy | |
| D1 | Evaluate how the representation of digital graphics and animation in digital format impact on their usability and accuracy. | |

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| **Task 2** | | **Design digital graphics and animation products to meet client requirements (P3, P4, M2, D2)**  You will now design a series of digital assets in order to design part of the opening sequence for the Pathfinder show.  **The Brief:**  ***“We want a fifteen to twenty second sequence showing the Starship Pathfinder. Slow fly-past shots, the ship orbiting a planet. Flying through space... zooming off into deep space... maybe even firing weapons on another ship, docking at a space station.“***  The assets you will need to design are:   1. Potential designs for the UNS Pathfinder. 2. A series logo and text banner. 3. A space station 4. A planet that the ship can be flying past 5. An enemy ship they can fight   **What you need to do:**   1. **UNS Pathfinder – 3D model** Draw a design for the main ‘hero’ Starship. It is described as follows:   UNS Pathfinder is a large deep space exploration ship. It has a crew of 600, and has advanced faster than light drive systems and is able to defend itself with particle beams, mass drivers and energy shields. 2. **Series Logo - 2D image** A logo and banner title for the show in a suitable typeface. Examples below:  |  |  | | --- | --- | |  |  | |  |  |  1. **The Space Station – 3D model**  You need to design the look of a space station for the Pathfinder to be flying past. 2. **The Planet – 3D model with 2D texture map**  A cool alien planet to be orbiting. 3. **The Enemy Ship – 3D model**   You will need to design a mean looking alien ship to fight.  Your design work should include:   * An introduction to the design work * Platform * Hardware needed * Software to be used * A time plan showing the timescales from design to completed video file. * An overview of the design brief including:   + Target audience   + What you have been asked to design   + Any legal or ethical considerations   + Proposed filenames   + File formats   + Sources of any external assets (textures etc)   + Designs for the images/models   + Texture designs for 3D models   + Animation storyboards   + Dope sheets/Long sheets * Test plans for how you will check you have met the brief.       **Task 2a – Get feedback**  Get some feedback from your peers, supervisors to inform you on any suggestions for amendments or improvements.  Get evidence of the feedback in the form of feedback sheets, screenshots of online feedback etc.  **Task 2b. Review your design**  Using your feedback and your own thoughts, write a full evaluation of how well you think your design work has met the brief. Justify your design decisions showing how the design will fulfil its purpose and client requirements.  ---------------------  **Useful resources**  Examples of science fiction opening sequences.  Star Trek Openings.  <https://www.youtube.com/watch?v=d1Li5YTBe-4>  Battlestar Galactica  <https://youtu.be/8hrd767Xzfk?t=32>  The Orville <https://www.youtube.com/watch?v=EIsSeKUkaIs> |
| **Checklist of evidence required** | |  |
| **Criteria covered by this task:** | | |
| Unit/Criteria reference | To achieve the criteria you must show that you are able to: | |
| P3 | Produce designs for digital graphics and animation products that meet client requirements. | |
| P4 | Review the designs with others to identify and inform refinements. | |
| M2 | Justify decisions made, showing how the design will fulfil its purpose and client requirements. | |
| D2 | Evaluate the design and optimised digital graphics and animation products against client requirements. | |

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| **Task 3** | | **Develop your digital products (P5, P6, P7, M3, D3)**  You will now create the required 2D and 3D assets and produce your animation.  **What you need to do:**  **Part 1: Create the assets**  Demonstrate the development of your digital images. You should show:   * Clear evidence of the tools and techniques used to create your assets. * Evidence of stages of development showing that you refined and improved your assets over time. * Evidence of saving your work I nthe correct file formats with the correct asset names.   **Part 2: Create the animation**  Show the development of the animated sequence, show how:   * How you incorporated the digital assets * Tools and animation techniques used. * How you optimised the animation. * Evidence of the final developed animation * Evidence of exporting the animation in a suitable format and with the correct filenames.   **Part 3: Testing the products**  Get some feedback on your images and animated sequence in terms of:   * Image clarity * Stability * Effectiveness * Suitability     **Part 4: Optimise and produce the video sequence.**  Make any final changes you need to make based on your feedback and review. Show what changes were made and why.  Combine your animated sequences and images final sequence including the animated sequence(s) and banner combined into a video segment.  The evidence could be in the form of screenshots, or preferably, a copy of the files.  You can choose to include a music soundtrack with your video file so long as it is free of copyright.  *Example of a source of copyright free music.*  [*https://incompetech.com/music/royalty-free/music.html*](https://incompetech.com/music/royalty-free/music.html)  **Part 5: Evaluation**  Write a thorough evaluation of your performance in this unit. You should consider:   * Your planning * Target setting and how you met those targets * Your review process including getting feedback * Your professionalism * Your creativity * Your responsibility and ability to manage your workload * Communication skills * The overall quality of your product.   . |
| **Checklist of evidence required** | | Individual strategic career development plan  Research evidence |
| **Criteria covered by this task:** | | |
| Unit/Criteria reference | To achieve the criteria you must show that you are able to: | |
| P5 | Produce digital graphics and animation products to meet client requirements. | |
| P6 | Test digital graphics and animation products for accuracy, functionality, compatibility and stability. | |
| P7 | Review the extent to which the digital graphics and animation products meets client requirements. | |
| M3 | Optimise digital graphics and animation products to meet client requirements. | |
| D3 | Demonstrate individual responsibility, creativity, and effective self-management in the design, development and review of digital graphics and animation products. | |

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| **Sources of information to support you with this Assignment** | MS Teams will be your main source of additional help and guidance along with the set of links provided which will guide you to extension material and further learning.  <https://britishesports.org/>  <https://esportsobserver.com/>  <https://esportsinsider.com/>  <https://www.dotabuff.com/blog> <https://blog.toornament.com/>  <https://estnn.com/>  <https://esports-news.co.uk/>  <https://esportsjunkie.com/>  <https://esports-marketing-blog.com/>  <https://www.esportsinlasvegas.com/blog/>  <https://www.reddit.com/r/esports/> <https://www.overbuff.com/blog> <https://blog.challengermode.com/> <https://thegamehaus.com/overwatch/> <https://www.dailycal.org/section/blogs/bearbytes/esports/> <https://www.talkesport.com/>  <https://f1esports.com/news/> |