



7 Technology A

Task 4: Design Project Stage 2

Due Date: 04/06/2021

Distributed: 19/05/2021

Weighting: 40%

Task Type: Folio and Project

Syllabus Outcome/s: TE4-1DP, TE4-2DP, TE4-4DP

Unit: Design Thinking - House of the Future

Task Description

In groups of 2-3, you are to design and construct a 3D model of a 'house of the future' for a family of three or more people. This task is comprised of three parts as outlined below -

PART A - Design Folio - GROUP

You are to produce a design folio which addresses the following components:

- **Empathy:** Investigate your target audience (eg: a family of 3). What challenges and issues does each member of the family face? What are their needs?
- **Define:** Develop a clear problem statement outlining specific features that will need to be included in the 'house of the future'. Features of the house will need to be future driven and inspired by emerging technologies such as robot chefs, compact homes with moving walls, auto doors, sensors etc.
- **Ideate:** Work on solution ideas by presenting a mind map and house sketches including:
 - a house sketch by each member of the group *PLUS* a final sketch in collaboration with all members.
 - sketches should include details such as furnishings, doors / windows, special features annotated etc.
- **Produce:** Turn your solution ideas into a 3D model house using a 3D modelling tool.
- **Test:** See whether your solution will work for your chosen target audience (original family). This will be completed through a questionnaire / survey by sample family members. Summary of your results presented.
- Your teacher will provide you with a [Folio Scaffold](#) for all PART A components.

PART B - 'House of the Future' Model - GROUP

You will create a 3D model of your 'House of the Future' tailored to your target audience using MineCraftEdu or a 3D platform of choice. Your model must include the following:

- At least 5 different purpose built spaces eg: bathroom, bedroom. Spaces can be adjustable / automated
- Furnishings, doors / windows
- Automated features/inventions such as robots, automated doors etc.
- Floor coverings to suit the need of specific spaces / rooms

PART C - Final Evaluation - INDIVIDUAL

At the completion of your project, you will need to complete a short individual evaluation of your entire project, addressing the following components:

- How well have you managed your time throughout the project?
- Are there any changes or improvements you would make to both the project and your project management for future projects?
- How have you worked in your team? Were there any challenges? If so, were you able to overcome them?
- What have you learnt from this group project that you could apply next time?

Glossary of Key Words

These verbs will provide an understanding of the detail needed to successfully complete this task:

Construct: Make; build; put together items or arguments

Describe: Provide characteristics and features

Demonstrate: Show by example

Evaluate: Make a judgement based on criteria; determine the value of

Details of Submission

PART A - Design Folio - GROUP

To be submitted on Google Classroom using scaffold provided.

PART B - 'House of the Future' Model - GROUP

All projects using Minecraft Edu will create and save their houses in a shared world developed by their classroom teacher. Submission using other 3D modelling tools should be negotiated with the classroom teacher either as a shared link or 3D model export.

PART C - Evaluation - INDIVIDUAL

Each member of your group will need to complete their own evaluation and submit this to Google Classroom as either a Word Doc or Google Doc link (shared with the teacher).

Teacher Feedback and Student Self-Reflection

The task will be returned to students within **14 days** of the due date. Information on how to improve will be provided through written teacher feedback and the marking criteria. Students can clarify or seek further feedback by speaking with their teacher.

Upon return of the task and teacher feedback, students will also be expected to complete the following self-reflection form, to provide them with the opportunity to reflect on the strength of their performance, as well as areas that have been identified to strengthen in future tasks - <https://forms.gle/Y9GaD7kxfnrrdHLg6>

How does this link to my learning?

This task will allow students to:

- Demonstrates knowledge and skills in competent use of a variety of software as part of their design projects
- Ability to apply the Design Process to help plan, research, develop and evaluate their design projects
- Ability to communicate and work effectively as part of a team

Assessment Procedures

Students should be fully aware of the School Assessment Procedures for their year group. These were provided at the beginning of the school year and are available off the school website under the Learning menu for each year group.

Marking Criteria

| PART A - Design Folio - GROUP | | | | | |
|--------------------------------------|---|---|--|--|--|
| CRITERIA | 1 | 2 | 3 | 4 | 5 |
| Empathy | Limited features displayed | Demonstrates little evidence of understanding the target audience OR outlines general needs of target audience based on everyday tasks | Demonstrates some evidence of understanding the target audience AND/OR highlights general challenges for members of the family AND/OR outlines individual needs of target audience based on everyday tasks | Demonstrates good research evidence of understanding the target audience AND highlights main challenges and issues for members of the family AND/OR Examines individual needs of target audience based on everyday tasks | Demonstrates extensive research findings and evidence of understanding the target audience AND highlights in detail challenges and issues for each member of the family AND Examines individual needs of target audience based on everyday tasks |
| Define | Limited features displayed | Demonstrates a basic problem statement OR some reference to future driven technologies. | Demonstrates a general problem statement outlining some features that need to be included in the 'house of the future' OR some reference to future driven technologies. | Demonstrates a general problem statement outlining some features that need to be included in the 'house of the future' AND/OR good reference to future driven technologies. | Articulates a clear problem statement outlining specific features that needs to be included in the 'house of the future' AND descriptive features of the house highlighting futuristic & emerging technologies. |
| Ideate | Limited features displayed | Basic mind map AND/OR basic sketches by some members of the group OR a final sketch in collaboration with all members. | General mind map AND/OR detailed sketches by few members of the group AND/OR a final sketch in collaboration with all members. | Detailed mind map AND detailed sketches by most members of the group PLUS a final sketch in collaboration with all members. | Detailed mind map AND detailed sketches by each member of the group PLUS a final sketch in collaboration with all members. |
| Produce | Actual 3D Model Marked using Part B Marking Criteria | | | | |
| Test | Limited features displayed | Basic testing results OR summary | Some testing results OR general summary displayed | Detailed testing results AND/OR general analysis of results displayed. | Detailed testing results AND detailed analysis of results displayed. |

PART B - HOUSE OF THE FUTURE, 3D MODEL - GROUP

| CRITERIA | 1 | 2 | 3 | 4 | 5 |
|-------------------------------------|----------------------------|---|--|--|---|
| Purpose | Limited features displayed | Basic space displayed with few creative elements. | 2 different purpose built spaces AND/OR creativity displayed | 3 - 4 different purpose built spaces AND Shapes and designs are unique and creative. | At least 5 or more different purpose built spaces AND Shapes and designs are unique and creative. |
| Features | Limited features displayed | Furnishings included in a few (1-2) areas of the home. | Furnishings included in some (3) areas of the home. | Detailed and realistic furnishings included throughout most areas of the home. | Detailed and realistic furnishings included throughout all areas of the home. |
| Futuristic design | Limited features displayed | 'Futuristic' features displayed in few (1-2) areas of the home. | 'Futuristic' features/inventions displayed in some (3) areas of the home. | Automated 'futuristic' features/inventions displayed throughout most areas of the home. Elements of coding displayed. | Automated 'futuristic' features/inventions displayed throughout all areas of the home. Elements of coding displayed. |
| Suitability & Aesthetics | Limited features displayed | Aesthetics considered in few areas | Aesthetics (including floor coverings) and design elements work together to achieve purpose in some areas of the home. | Aesthetics (including floor coverings) and design elements work together to achieve purpose in most areas of the home. | Aesthetics (including floor coverings) and design elements work together to achieve purpose throughout the home. |
| Group work | Limited Group work. | Basic Evidence of Group collaboration, communication and production | Evidence of effective Group collaboration, communication and production in some lessons. | Evidence of effective Group collaboration, communication and production in most lessons | Consistent & extensive evidence of effective Group collaboration, communication and production throughout all lessons. |

PART C - Evaluation

| Criteria | 2 | 4 | 6 | 8 | 10 |
|-------------------|---------------------------------------|---|--|---|--|
| Evaluation | Limited attempt at project evaluation | Basic project evaluation, a few aspects of project have been covered addressing FEW component questions | Satisfactory project evaluation, most aspects of project have been covered addressing some component questions | Good project evaluation, all aspects of project have been covered addressing MOST component questions | Excellent project evaluation, all aspects of project have been covered in depth, with detailed discussion addressing ALL component questions |

Literacy Rubric

| LITERACY MARKING CRITERIA | Descriptors | | | | |
|---|--|---|--|--|--|
| | 0 | .25 | .5 | .75 | 1 |
| Vocabulary Uses technical vocabulary to explain concepts and/or range of precise and appropriate words for effect | - Symbols or drawings | - Only simple and nontechnical words are used. | - Some precise and technical words are used. | - Sustained use of precise and technical words. | -Sustained, consistent and fluent use of precise and technical words. |
| Punctuation Use of correct and appropriate punctuation for effect and to aid in reading of the text | - No or minimal evidence of correct sentence punctuation (less than 25%) | - Limited evidence of correct sentence punctuation (at least 25%) | - Some correct sentence level punctuation (at least 50%). | - Mostly correct sentence level punctuation (80%) and <i>at least two</i> examples of other punctuation. | -Writing contains accurate use of all applicable punctuation. |
| Sentences Intentionally constructs a variety of sentences to match purpose and audience | - No evidence of sentences - Drawings, symbols, a list of words OR text fragments | - At least one sentence is used correctly. | - Some correct formation of sentences. (at least 50%) | - Most sentences (80%) are correct but are largely unsophisticated. | - All sentences are correct including sophisticated sentences. |
| Paragraphs Paragraphs are used to effectively structure information and partition events and ideas | - No correct use of paragraphing - may be a block of text or random breaks | - Ideas are separated, provides at least ONE correct break between ideas - Paragraphs may contain some unrelated ideas | - At least ONE paragraph is well structured and develops an idea | - All paragraphs are focused on one idea or a set of like ideas but may not be linked effectively. | - Paragraphing creates flow, connectivity and supports argument. |
| Text Structure Uses features of the appropriate text type | - No evidence of structural components of the appropriate text type | - Minimal evidence of the structural components of the appropriate text type. | - Some evidence of the structural components of the appropriate text type. | - Substantial evidence of the structural components of the appropriate text type. | - Coherent and controlled use of the appropriate structural components of the text type. |

TOTAL: 50 MARKS