SYMBIOSIS INTERNATIONAL SCHOOL
Digital Design E-Journal – MYP 2 (2024-25)

DIGITAL DESIGN – 3D Modelling with Sketchup





MYP 2 (2024-25)

Statement of Inquiry :

Development is the act or process of growth, progress or evolution, sometimes through iterative improvements.

Key Concept : Development

Related Concepts : Adaptations

Global Context : Globalization and Sustainability

A short note about Design Folder:

As you progress through the different stages of the design cycle, all relevant activities and outcomes should be recorded, and dated, in the design folder.

The design folder is a compilation of evidence that accompanies the final product/solution for a unit of work. You should formally record the results of your research, various plans and designs and the evaluation of your finished products/solutions in the design folder.

Name:	Grade: MYP2
Project Title:	Date:

Levels of Achievement:

Inquiring and Analysing (8)	Developing ideas (8)	Creating the solution (8)	Evaluating (8)

Facilitator : Puja Kundu

Plan Of Work

Criterion	What will you do?	Dated
Inquiring and Analyzing		
Developing ideas		
Creating the solution		
Evaluating		

Task

In today's growing technological world almost every aspect of the global economy uses computers and technology for the design and delivery of products and services. Software tools used in design phase can automate repetitive calculation and drawing tasks, help find new design solutions and provide a high degree of precision. This optimization makes the design process faster clearer and more effective.

Your job is to evaluate your clients needs and expectations and then develop a design of their dream house with a 3D design model of the structure in Google Sketchup.

Introduction

3D modeling is a technique used in computer graphics that produces a digital object which can be fully animated and given special effects. 3D models are used for a variety of mediums including video games, movies, architecture, illustration, engineering, and commercial advertising.

Design Cycle



Criterion A: Inquiring and analysing

1. Explain and justify the need for creating the project.

1.1. Design a mind map identifying the areas of priority for your project. Examples: subject, materials, self, functionality, style, etc.

1.2 Identify inquiry questions, (some examples are provided). You may identify additional questions.

- What do you want to create?
- What you will need to find out?
- Who is the target audience of your project?
- Why is it important to create the 3D Model?
- How are you going to use the materials and tools?
- How are you going to learn all the required tools?

2.1. Identify what you have to research:

Prioritize which research is the most important. Number from 1 to 3 in order of priority.

How and where are you going to gather the necessary information or data?

Is it primary or secondary data? Quantitative or qualitative data?

Explain or justify why you feel this research will help you solve the problem you have identified?

Organize the investigation by dates.

What information is needed?	**How will I gather this information?**	**Primary or Secondary**	**Why will I need this information?**

2.2. Bibliography must be in alphabetical order and in the proper format.

3. Analyze a range of existing products (images / screenshots) that inspire a solution to the problem. Justify each sample work selected

4. Develop a detailed design brief, which summarizes the analysis of the relevant. Consider the following points as you write the design brief.

Introduction to the task

Description about the client

Research plan

Required materials

Analysis of existing 3D model of a house

Description of the solution

Product design specification

Conclusion

Criterion B: Developing Ideas

1. List the requirements (design specifications) that are needed to design the solution

Design Specification	**Design 1 (Exterior)**	**Design 2 (Exterior/interio**

- Sketch two different designs and provide proper annotations

Design 1:

Design 2:

Choose the design you like the best and explain your choice.

Criterion C: Creating the Solution

➢ Keeping your design ideas in mind, Develop a detailed design plan.

Explanation	Date & Time	Resources/Tools

 Discuss the changes made while creating the solution.

Criterion D: Evaluating

➢ Outline a few testing methods to measure the success of the solution.

➢ Test your solution against the design specifications.

➢ Discuss the improvements needed in the designed solution.

➢ What have you learned about your performance and how would you improve your performance on the next project? (Be specific)

Task D: Personalized ATL Reflection Table

In this table you will record meaningful learning experiences that you underwent in your classes. Write details and examples of your learning experience.

ATL Category	ATL Cluster	Describe your learning with an example, how you reflected, demonstrated these ATL skills.
Creative Thinking:		
Self-management skills:		
Research Skills		
Learner profile -		

Feedback from the client and 3 or more peers.

Criterion A – Inquiring and analysing

1. Explain and justify the need for a solution to a problem.
2. How will you do your research? Primary and secondary
3. Analyse a range of existing products.
4. Develop a detailed design brief:
5. Concisely summarize the useful and relevant information in your own words.

Achievement level	Level descriptor
1-2	The student: · states the need for a solution to a problem for a specified client/target audience; · develops a basic design brief, which states the findings of relevant research.
3-4	The student: · outlines the need for a solution to a problem for a specified client/target audience; · outlines a research plan, which identifies primary and secondary research needed to develop a solution to the problem, with some guidance; · analyses one existing product that inspires a solution to the problem; · develops a design brief, which outlines the analysis of relevant research.
	The student: · explains the need for a solution to a problem for a specified client/target audience;

5-6	· constructs a research plan, which identifies and prioritizes primary and secondary research needed to develop a solution to the problem, with some guidance; · analyses a range of existing products that inspire a solution to the problem; · develops a design brief, which explains the analysis of relevant research.
7-8	The student: · explains and justifies the need for a solution to a problem for a client/target audience; · constructs a detailed research plan, which identifies and prioritizes the primary and secondary research needed to develop a solution to the problem independently; · develops a detailed design brief, which summarizes the analysis of relevant research.

Criterion B – Developing ideas

1. Develop design specifications.
2. Develop a range of feasible design ideas.
3. Present the chosen design and justify its selection.
4. Develop accurate and detailed planning drawings/diagrams.

Achievement level	Level descriptor
1-2	The student: · lists some basic design specifications for the design of a solution; · presents one design, which can be interpreted by others;

	· creates incomplete planning drawings/diagrams.
3-4	The student: · lists some design specifications, which relate to the success criteria for the design of a solution; · presents a few feasible designs, using an appropriate medium(s) or annotation, which can be interpreted by others; · justifies the selection of the chosen design with reference to the design specification; · creates planning drawings/diagrams or lists requirements for the creation of the chosen solution.
5-6	The student: · develops design specifications, which outline the success criteria for the design of a solution; · develops a range of feasible design ideas, using an appropriate medium(s) and annotation, which can be interpreted by others; · presents the chosen design and justifies its selection with reference to the design specification;
7-8	The student: · develops detailed design specifications, which explain the success criteria for the design of a solution based on the analysis of the research; · develops a range of feasible design ideas, using an appropriate medium(s) and detailed annotation, which can be correctly interpreted by others; · presents the chosen design and justifies fully and critically its selection with detailed reference to the design specification; · develops accurate and detailed planning drawings/diagrams and outlines

requirements for the creation of the chosen solution.

Criterion C – Creating the Solution

1. Construct a logical plan: efficient use of time and resources!
2. Demonstrate excellent technical skills when making the solution.
3. You must follow the plan.
4. You fully justify changes.
5. You present the solution as a whole.

Achievement level	Level descriptor
1-2	The student: · designs a testing method, which is used to measure the success of the solution; · states the success of the solution.
3-4	The student: · designs a relevant testing method, which generates data, to measure the success of the solution; · outlines the success of the solution against the design specification based on relevant product testing; · outlines how the solution could be improved; · outlines the impact of the solution on the client/target audience.
5-6	The student: · designs relevant testing methods, which generate data, to measure the success of the solution; · explains the success of the solution against the design specification based on relevant product testing; · describes how the solution could be improved; · explains the impact of the solution on the client/target audience, with guidance.

7-8	The student: · designs detailed and relevant testing methods, which generate data, to measure the success of the solution; · critically evaluates the success of the solution against the design specification based on authentic product testing; · explains how the solution could be improved; · explains the impact of the product on the client/target audience.

Criterion D - Evaluating

1. Design detailed and relevant testing methods, which generate data.
2. Evaluate the success of the solution against the design specifications.
3. Explain how the solution could be improved.
4. Explain the impact of the solution on the client/target audience.

Achievement level	Level descriptor
1-2	The student: · designs a testing method, which is used to measure the success of the solution; · states the success of the solution.
3-4	The student: · designs a relevant testing method, which generates data, to measure the success of the solution; · outlines the success of the solution against the design specification based on relevant product testing; · outlines how the solution could be improved; · outlines the impact of the solution on the client/target audience.

5-6	The student: · designs relevant testing methods, which generate data, to measure the success of the solution; · explains the success of the solution against the design specification based on relevant product testing; · describes how the solution could be improved; · explains the impact of the solution on the client/target audience, with guidance.
7-8	The student: · designs detailed and relevant testing methods, which generate data, to measure the success of the solution; · critically evaluates the success of the solution against the design specification based on authentic product testing; · explains how the solution could be improved; · explains the impact of the product on the client/target audience.