MYP TECHNOLOGY YEAR 3.

"Clock Project" PROJECT

[Information] [Materials] [Systems]

Guiding questions:
How do we design for a certain demographic? (***HF***)
How to trends effect design? (***HF***)

Context:
The pace of life is increasing and with so many demands placed upon us it is very important that we manage our time well. Teenagers are notoriously poor at time management. Therefore, there Is a need for a new style of clock that would be appealing to the teen market.

Task:
You are to design an analogue clock suitable for the teenage demographic. You need to highlight your demographic clearly and design accordingly. The clock should be contemporary, innovative and original in its design.

Information:
- Communication of information through graphic communication.
- Design using CAD and/or appropriate design software.
- Conducting and interpreting surveys.

Systems:
- Computer Aided Design
- Analogue quartz clock movements.

Materials:
- Manufactured boards
- Thermoplastics

Areas of Interaction:	
ATL	Study habits, Communication, Information, Reflection, Connecting Ideas.
HI	Demographics, aesthetics, market research, properties of materials.

AIMS	**OBJECTIVES**
- Use of the design cycle. - Undertake meaningful and relevant research. - Gain experience using tools & equipment. - Manage time & resources - Critically evaluate own work.	- Create a Design Folio following the Design Cycle. - Provide several possible solutions and justify final choice. - Create solution to appropriate standard. - Test & evaluate solution. - Justify any changes. - Evaluate learning in terms of AOI.

Investigate

Guiding Questions

Explain in your own words the **task** that you have been asked to solve.

Write 2 – 3 guiding questions that might help you with your research.

What are the **AREAS OF INTERACTION** that have been highlighted by your teacher for this design task? How might they been interpreted to help you understand the problem and help you with your research?

Investigate

The Design Cycle

Describe the Design Cycle and how we use it in Design Technology.
Write your **Design Brief**. (A short open ended statement that indicates **what** you are going to make, **why** you are going to make it and **who** you are going to make it for.)

Investigate **Product**

Looking at similar products is a useful form of research. You can learn quickly about the different methods and techniques used to solve a problem similar to your own. This leaves you in a good starting point to think about your own solution.
Find pictures of clocks, both wall and and **annotate thoroughly**. Use the internet, magazines, books or photograph real items.

Annotation guide for Product Analysis
Describe in terms of Form, Function and Aesthetics? (***HI***)
What features do you like/dislike about the design? (**ATL**)
What design ideas could you possibly use?
Would your demographic find it appealing? (***HI***)

Investigate

Quartz Movements

You clock will be using a quartz analogue movement. Explain how a quartz movement works.

Sketch the movement in either isometric or oblique.
Your sketch should be dimensioned and be to scale.

Investigate

Market Research

In order to design you clock, you need to decide on your user group and find out what their needs are.

My chosen demographic is: _____.

Conduct a multiple choice **survey** to find information about the **likes** and **dislikes** of your chosen demographic.

Question	Options	Results

CONCLUSUION:
What did you learn from your survey?

MATERIAL	PICTURE	PROPERITIES	USES
PLYWOOD			
ACRYLIC			
SOFTWOOD			
CARDBOARD			

Investigate

Design Specification

A Specification is a list of key points and/or constraints that designs must take account of. The specification can be written using different headings as a guide. This is a list of "must haves" for your project.

All your designs need to be checked against this list…..

	1	2	3	4	5
Use (What's it for):					
Market (Who it is for):					
Size (Max and Min):					
Materials Available:					
Components Required:					
Time to make:					
Aesthetics (The looks):					
Ergonomics (Design for use):					
Safety:					
Other:					

Design

Designs for Clock

Produce 3 – 5 designs for your clock. Show clearly the **dimensions**, **ergonomics**, **aesthetic appeal** and how you will make it.
Evaluate each design against the Specification.

Annotation guide for Game Design – Notes around Designs
Indicate the aesthetic design features. ***(HI)***
What features do you like/dislike about the design? **(ATL)**
How does each design meet the Specification?
Indicate materials, colours, size and specific tools if needed. ***(HI)***

Plan

Gantt Chart

One of the key skills in Technology is the ability to **plan** and to use time and resources effectively.
You need to create a **Gantt chart** (s) to help with your time management. You should make note of the due dates for each section and plan accordingly.

INVESTIGATE DUE:

DESIGN DUE:

PLAN DUE:

CREATE DUE:

EVALUATE DUE:

Plan

Materials List

You will need to create a **comprehensive** list of all the **materials** and **components** that you will need if you are to create an actual product. You need to indicate:

- Materials
- Sizes (length x width x height)
- Components (screws, nails etc)
- Consumables 8Glues, paints etc)

A production plan is a step by step guide of how you are going to make your product/solution. In the Investigate phase of the Design Cycle, you should have researched into the materials and construction processes that could be used.

Step	Materials/Tools needed	Process (What I will do)	Time

Creat

Process Journal

)ur ng the Create phase of the Design Cycle, you must keep a Process Journal.
'ou should record what you have done each lesson and what you will do the next lesson.

ake **photographs** of you project as it is being built to show each step of production.
ndi cate problems you have encountered and how you overcame them.

us fy any changes to your design.

DATE	What was accomplished this lesson, tools used, problems encountered and how they were overcome.	What I hope to achieve next lesson, what tools I will need, what materials I will need, any changes to my design.

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Evaluation

Final Product

Evaluation is perhaps the most important part of the Design Cycle. You need to evaluate the **final product**, evaluate each stage of the **Design Cycle** and evaluate against the **Areas of Interaction**. The questions given should be used as a guide only.

Evaluation of: **FINAL PRODUCT**	Have you solved the problem? How did you test the product? How could you improve your design?

Design Improvement Sketch	Design Improvement Sketch

Evaluation of **Design Cycle:** ***INVESTIGATION***	Have you explained the problem clearly in the Design Brief and Specification? Have you investigated the problem thoroughly using several different sources/methods of gathering information? Have you described how to effective test you solution?
	Self Assessment /6
Evaluation of **Design Cycle:** ***DESIGN***	Did you produce several feasible designs? Can you justify you chosen final design? Are your designs fully annotated? Are they of good quality?
	Self Assessment /6

Evaluation of **Design Cycle:** ***PLAN***	Did you produce a detailed and logical plan? Did you follow your plan exactly? Why not? Did you evaluate your plan? How could you improve your plan?

Self Assessment /6

Evaluation of **Design Cycle:** ***CREATE***	Did you use the tools and equipment effectively? What problems to you have? How did you solve them? Did you change your design? Can you justify your changes? Did you create a solution of appropriate quality?

Self Assessment /6

Evaluation

Areas of Interaction

Evaluation of: ***ATTITUDES IN TECHNOLOGY***	Did you work to the best of your ability? Were you self motivated? Could you solve problems and work independently? Did you always work in a safe and appropriate manner?

Self Assessment /6

Learner Profile:

What Learner Profile attributes have you demonstrated during this project?
Can you give examples?

Evaluation of **Areas of Interaction:** ***HUMAN INGENUITY*** 	*Human Ingenuity* refers to man the maker. What are the possible effects of your solution on your demographic? Are there any effects on the broader community?
Evaluation of **Areas of Interaction:** ***APPROACHES TO LEARNING*** 	What ATL skills did you employ during this project? Were they effective/relevant? How could you improve? E.g.: Study Skills, Thinking Skills, Researching, Communicating…

MYP TECHNOLOGY
CLOCK PROJECT
ASSESSMENT RUBRIC

	Level 5 - 6	Level 3 - 4	Level 1- 2
INVESTIGATE	I have **clearly** re-written the Design Brief in my **own words** with mention of the intended market. I have a complete a **thorough** analysis of materials highlighting features and **explaining** their suitability. I completed a **detailed** Product Analysis, examining many clock designs and have demonstrated an **excellent understanding** of aesthetics and demographics. I have written a Specification with **clear** and **relevant** points that demonstrate an **excellent understanding** of the problem.	I have **clearly** re-written the Design Brief in my own words. I have written **relevant** guiding questions. I have examined materials explaining their properties and uses. I completed a Product Analysis, examining aesthetic appeal and demographics . I have written a Specification with **clear** and **relevant** points that demonstrate a **good understanding** of the problem.	I have written a Design brief. I have written a guiding question. I have attempted **some** analysis materials. I completed **little** or no Product Analysis I have written a Specification.
DESIGN	I completed **4-5** designs of good **quality** with annotation, each **evaluated** against the specification. I **justified** the chosen design and **critically evaluated** all designs against the design specification.	I completed **3-4** designs of good quality with annotation and justified my chosen one. I **somewhat** evaluated my designs against the design specification.	I completed **less** than **3** designs and with some attempt to justify against the specification.
PLAN	I produced a plan containing a number of **detailed**, **logical** steps that could be followed by **others**. I produced a **detailed** Gantt chart indicating time, equipment, and resources needed. I **critically** evaluated and justified any modifications to my plan.	I produced a plan containing a **number** of **logical** steps that include tools and time. I created a useful Gantt chart. I made **some attempt** to evaluate the plan.	I produced a plan with **some details** of steps and/or resources required. I created a Gantt chart.
CREATE	I **highly competently** used tools, equipment and appropriate construction techniques. I followed my plan and **justified** any modifications. I used photographs; diagrams clear descriptions to highlight the making of the clock in my **detailed** Process Journal. I created a clock of **appropriate** quality with innovation. (New workshop skills and original design)	I followed my plan and created a clock of **satisfactory** quality. I competently used tools and equipment as shown. I kept a **regular** process journal with some photographs and explanations.	I considered my plan and created a clock. I followed the teacher's instructions. I **occasionally** kept a process journal.
EVALUATE	I gauged the success of my clock and evaluated **objectively** based on the results of **testing** and views of intended users. I produced an evaluation at **each stage** of design cycle, suggesting improvements. I insightfully evaluated the **AOI** and **Learner Profile** clearly demonstrated an understanding of their relevance.	I evaluated my clock and own performance, suggesting what could be improved. I tested my clock on my chosen demographic and **evaluated** against the design specification. I evaluated my use of the design cycle with insight. I evaluated my use of the **AOI** and **Learner Profile**.	I evaluated my clock or my own performance. I made some attempt to test my clock.

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Photographs of Final Product