

MYP TECHNOLOGY YEAR 1.

"Skill Game" PROJECT

[Information] [Materials] [Systems]

Guiding question:

"How do Designers make something new?"

Context:

The Skill Game project will introduce Technology students to the design process and the Design Cycle. The properties of material such as softwoods and thermoforming plastics will be explored, as will workshop procedures. The product that will be made is designed, manufactured and packaged for sale with a specific market in mind.

Task:

There is a need for a new hand held skill game that could be used to keep young children entertained during long car journeys.

Information:

- Technical research and analysis of data.
- Communication of ideas through sketching and design concepts.

Materials:

- Introduction to softwoods and thermoplastics
- Use of appropriate tools and equipment

Systems:

- The Design Cycle as a graphic organiser and design process

Areas of Interaction:



Design Cycle, Study habits, Communication, Information, Reflection, Connecting Ideas.



Design Cycle, market research, and properties of materials.

AIMS

- Use of the design cycle.
- Undertake meaningful and relevant research.
- Gain experience using tools & equipment.
- Manage time & resources
- Critically evaluate own work.

OBJECTIVES

- 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?



Describe the **Design Cycle** and how we use it to help us in Technology

Write your **Design Brief**.

Investigate



Product Analysis

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 ergonomic pens and other ergonomic products 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?

Indicate how it might be constructed? (*HI*)



A good survey helps guide your project, especially when designing.

We need a survey or interviews to assess our market's likes and dislikes.

Write a questionnaire that can be used to assess what your chosen market would like from a new product.

Can you identify the groups of people you should talk to?

What kind of questions should you ask them?

Make your questions multiple choice so we can fill in the results in tally form.

Question	Options	Results

CONCLUSION:

What did you learn from your survey?



<u>TOOL</u>	<u>PICTURE</u>	<u>USES</u>	<u>TIPS & TRICKS</u>
FILE			
TIMBER SAW			
COPING SAW			
PILLAR DRILL			



<u>MATERIAL</u>	<u>PICTURE</u>	<u>PROPERTIES</u>	<u>USES</u>
SOFTWOOD			
ACRYLIC			
PLYWOOD			
CARDBOARD			



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.....

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:



Produce 3 - 5 designs for your game. Show clearly the dimensions, 'playability' and how you will make it. Evaluate each design against the Specification.

Annotation guide for Game Design - Notes around Designs

Indicate the how to play the game. *(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



Production Plan

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

Create



Process Journal

During the Create phase of the Design Cycle, you must keep a Process Journal. You should record what you have done each lesson and what you will do the next lesson.

Take **photographs** of your project as it is being built to show each step of production. Indicate problems you have encountered and how you overcame them.

Justify 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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**MYP TECHNOLOGY
“Ergonomic Pen” PROJECT
Photographs of 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**.

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 effectively test your solution?

Self Assessment /6

Evaluation of **Design Cycle:**
DESIGN

Did you produce several feasible designs?
Can you justify your 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 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 chosen market? Effects on society as a whole?

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 “Ergonomic Pen” PROJECT ASSESSMENT RUBRIC

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