Inquiring and Analyzing

Explains the problem	What is the problem?
(Explain - Give a detailed	
account including reasons	
or causes.)	
	who is it a problem for?
	Where is the problem occurring?
	where is the problem occurring:
	What is the cause of the problem?
	What effect is the problem creating?
	Why do I need to design something?
	what are the problems that i see arise that could be helped with design?

Justifies the need for a	Brainstorm different ideas for a design
solution to a problem for	
a client/target audience	
(Justify - Give Valla	
support an answer or	
conclusion)	
 Identify a target user by 	
applying brainstorming	
or mind-mapping	
techniques	

Justifies the need for a	If you choose to do an interview OR to collect data from experts, what will your questions be?
solution to a problem for	Our article 1
a client/target audience	
You could do some of	How will the answers inform your project?
the following:	The answer to this question will tell or help me:
 Interview, survey 	
and/or poll potential	Question2:
clients	The ensures to this superior will tell as help may
Collect data from	
experts to confirm	
there is a real need for	Question3:
a solution to the problem	The answer to this guestion will tell or help me:
P	
OR	Question4
GO TO NEXT PAGE	Question4.
	The answer to this question will tell or help me:
	Question5:
	The answer to this question will tell or help me:
	Who will you interview?
	Why have you chosen them?
	Who else will you interview?
	Why have you chosen them?
	Summarize what sources say about the problem? (Citations needed)
	What do you think of what this source says about the problem?

-	
Justifies the need for a solution to a problem for a client/target audience	Put your observation notes, photos, videos, or video links here:
You could also do either of these:	
 Observe, film and/or photograph users interacting with a product 	
 See the situation from the user's/client's point of view 	
(as an example, refer to "Paul Bennett finds design in the detail" at www.ted.com).	
	Summarize what these observations tell you about how you can help the problem? If you have talked with a client (Citations needed)
	What do you think of what this source says about the problem?

Constructs a

detailed research plan (Construct - Display information in a diagrammatic or logical form.)

You need to be able to identify:

- the relevant data that needs to be collected
- where the data will be sourced from
- whether sources are primary or secondary

You might do any of the following for product analysis:

- identification of and interaction with similar products when out shopping
- attribute listing of existing products
- SWOT analysis (strengths, weaknesses, opportunities and threats)
- functional analysis
- aesthetic analysis
- graphical disassembly analysis
- performance testing of products
- evaluation of past student projects
- secondary research through product reviews on consumer websites, buying guides or magazines
- summary of customer reviews on commercial websites.

You need to be able to identify the questions that need to be answered to solve the problem:

Which sources on the following pages are essential and which are desirable?

Identifies the primary research needed to develop a solution to the problem independently (<i>Identify - Provide an</i> <i>answer from a number of</i> <i>possibilities. Recognize</i> <i>and state briefly a</i> <i>distinguishing fact or</i> <i>feature.</i>)	Primary Research (You did this research yourself)	Rank
Prioritizes the primary research – Which is best? You can rank it (Prioritize - Give relative importance to, or put in an order of preference.)	Primary Research (You did this research yourself)	
 This could include: conducting interviews, surveys and polls with a target audience and/or client interviewing experts over the telephone writing letters or emails asking for specific information about a product from a client observing users interacting within the 		
situation and making notes analysing products that have things in common with the problem investigating the work of other designers of existing products conducting market research such as surveys, questionnaires and interviews through focus groups experimenting with materials, tools and processes.	Primary Research (You did this research yourself)	
	Primary Research (You did this research yourself)	

Identifies the	Secondary Research (You found someone else's research) – (Citation needed)	Rank
secondary research		
needed to develop a		
solution to the problem		
independently		
Prioritizes the		
secondary research –		
Bank it		
hankie		
Examples of secondary		
research include:		
• analysing data from a		
website or book		
 reading accounts of a 		
problem written by		
another person	Secondary Research (You found someone else's research) – (Citation needed)	
 analysing articles in 		
magazines, journals		
and newspapers		
downloading data from		
a marketing website		
viewing videos about		
how to use materials,		
tools and processes.		
	Constant Descende (Vers Constant sector sector) (Citer Constant)	-
	Secondary Research (You found someone else's research) – (Citation needed)	
	Secondary Research (You found someone else's research) – (Citation needed)	

Analyses a range of	Similar Product 1 (Citation needed)
existing products that	
inspire a solution to the	
problem in detail	
problem in detail	
(Analyza Proak down in	
(Analyze - break down in	
order to bring out the	
essential elements or	
structure. To identify parts	
and relationships, and to	
interpret information to	
reach conclusions.)	
	Similar Product 2 (Citation needed)
	Similar Product 3 (Citation needed)
	Similar routers (chator needed)
	Similar Product 4 (Citation peeded)
	Similar Froduct 4 (citation needed)
	Similar Product 5 (Citation peoded)
	Similar Fourier S (criation needed)

Develops a detailed	You should present information concisely (point form is okay)		
design brief,			
(Develop - To improve			
incrementally, elaborate			
or expand in detail. Evolve			
to a more advanced or			
effective state)			
chective state,			
• You should cite all			
sources of information			
using appropriate			
conventions.			
	You should explain how and why the information is relevant to solving the problem		
	You should evaluate the validity of the data		
	······································		
	You should present their research in an appendix (if you did not insert it in the tables above)		
Summarized the			
analysis of relevant			
rosoarch			
research			

Developing Ideas

Develops detailed design specifications, which explain the success criteria for the design of a solution based on the analysis of the research	Overall design idea 1	
incrementally, elaborate or expand in detail. Evolve to a more advanced or effective state)	Every aspect of a specification must be: Specific & Realistic specification 1	How will you test this Specification?
Develops a range of feasible design ideas, using an appropriate medium(s) and detailed annotation	Specific & Realistic specification 2	How will you test this Specification?
A range is more than 3. To reach a level 7, you should have at least 5. You may want to add your drawing as extra pages to this template	Specific & Realistic specification 3	How will you test this Specification?
 because the space provided is not enough. You might include: The exact size and shape of individual components The required and/or available materials How the components fit together to create the whole The required and/or available tools and 	Specific & Realistic specification 4	How will you test this Specification?
	Specific & Realistic specification 5	How will you test this Specification?
 equipment Aesthetics (colour, texture, shape, form, line, balance, finish) How the user will interact with the solution 	Specific & Realistic specification 6	How will you test this Specification?
 Aspects relating to safety and accessibility. Font types used Length of the movie Types of music Components that make up its elements 	Specific & Realistic specification 7	How will you test this Specification?
 Links to it Social interactivity Durability 	Specific & Realistic specification 8	How will you test this Specification?

Г		
Can be correctly interpreted by others. (Have a classmate look at	What questions did your classmates have about the design?	
this design)		
	What changes did they recommend to you?	
Drawing of design 1 (Make	sure to label everything)	
If you are doing a movie, yo	ou need to create a storyboard	

Develops detailed design specifications, which explain the success criteria for the design of a solution based on the analysis of the research	Overall design idea 2	
incrementally, elaborate or expand in detail. Evolve to a more advanced or effective state)	Every aspect of a specification must be: Specific & Realistic specification 1	How will you test this Specification?
Develops a range of feasible design ideas, using an appropriate medium(s) and detailed annotation	Specific & Realistic specification 2	How will you test this Specification?
A range is more than 3. To reach a level 7, you should have at least 5. You may want to add your drawing as extra pages to this template	Specific & Realistic specification 3	How will you test this Specification?
 because the space provided is not enough. You might include: The exact size and shape of individual components 	Specific & Realistic specification 4	How will you test this Specification?
 The required and/or available materials How the components fit together to create the whole The required and/or available tools and 	Specific & Realistic specification 5	How will you test this Specification?
equipment • Aesthetics (colour, texture, shape, form, line, balance, finish) • How the user will interact with the solution	Specific & Realistic specification 6	How will you test this Specification?
 Aspects relating to safety and accessibility. Font types used Length of the movie Types of music Components that make up its elements 	Specific & Realistic specification 7	How will you test this Specification?
 Links to it Social interactivity Durability 	Specific & Realistic specification 8	How will you test this Specification?

Can be correctly interpreted by others. (Have a classmate look at	What questions did your classmates have about the design?
this design)	
	What changes did they recommend to you?
Drawing of design 2 (Make If you are doing a movie, yo	sure to label everything) ou need to create a storyboard

Develops detailed design specifications, which explain the success criteria for the design of a solution based on the analysis of the research	Overall design idea 3	
incrementally, elaborate or expand in detail. Evolve to a more advanced or effective state)	Every aspect of a specification must be: Specific & Realistic specification 1	How will you test this Specification?
Develops a range of feasible design ideas, using an appropriate medium(s) and detailed annotation	Specific & Realistic specification 2	How will you test this Specification?
A range is more than 3. To reach a level 7, you should have at least 5. You may want to add your drawing as extra pages to this template	Specific & Realistic specification 3	How will you test this Specification?
because the space provided is not enough. You might include: • The exact size and shape of individual components	Specific & Realistic specification 4	How will you test this Specification?
 The required and/or available materials How the components fit together to create the whole The required and/or available tools and 	Specific & Realistic specification 5	How will you test this Specification?
equipment • Aesthetics (colour, texture, shape, form, line, balance, finish) • How the user will interact with the solution	Specific & Realistic specification 6	How will you test this Specification?
 Aspects relating to safety and accessibility. Font types used Length of the movie Types of music Components that make up its elements 	Specific & Realistic specification 7	How will you test this Specification?
 Links to it Social interactivity Durability 	Specific & Realistic specification 8	How will you test this Specification?

Can be correctly interpreted by others. (Have a classmate look at this design)	What questions did your classmates have about the design?
	What changes did they recommend to you?
Drawing of design 3 (Make If you are doing a movie, yo	sure to label everything) ou need to create a storyboard

Develops detailed design specifications, which explain the success criteria for the design of a solution based on the analysis of the research	Overall design idea 4	
incrementally, elaborate or expand in detail. Evolve to a more advanced or effective state)	Every aspect of a specification must be: Specific & Realistic specification 1	How will you test this Specification?
Develops a range of feasible design ideas, using an appropriate medium(s) and detailed annotation	Specific & Realistic specification 2	How will you test this Specification?
A range is more than 3. To reach a level 7, you should have at least 5. You may want to add your drawing as extra pages to this template	Specific & Realistic specification 3	How will you test this Specification?
because the space provided is not enough. You might include: • The exact size and shape of individual components	Specific & Realistic specification 4	How will you test this Specification?
 The required and/or available materials How the components fit together to create the whole The required and/or available tools and 	Specific & Realistic specification 5	How will you test this Specification?
equipment • Aesthetics (colour, texture, shape, form, line, balance, finish) • How the user will interact with the solution	Specific & Realistic specification 6	How will you test this Specification?
 Aspects relating to safety and accessibility. Font types used Length of the movie Types of music Components that make up its elements 	Specific & Realistic specification 7	How will you test this Specification?
 Links to it Social interactivity Durability 	Specific & Realistic specification 8	How will you test this Specification?

· · ·	
Can be correctly interpreted by others. (Have a classmate look at	What questions did your classmates have about the design?
this design)	
	What changes did they recommend to you?
Drawing of design 4 (Make If you are doing a movie, yo	sure to label everything) ou need to create a storyboard

Develops detailed design specifications, which explain the success criteria for the design of a solution based on the analysis of the research	Overall design idea 5	
incrementally, elaborate or expand in detail. Evolve to a more advanced or effective state)	Every aspect of a specification must be: Specific & Realistic specification 1	How will you test this Specification?
Develops a range of feasible design ideas, using an appropriate medium(s) and detailed annotation	Specific & Realistic specification 2	How will you test this Specification?
A range is more than 3. To reach a level 7, you should have at least 5. You may want to add your drawing as extra pages to this template	Specific & Realistic specification 3	How will you test this Specification?
because the space provided is not enough. You might include: • The exact size and shape of individual components	Specific & Realistic specification 4	How will you test this Specification?
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equipment • Aesthetics (colour, texture, shape, form, line, balance, finish) • How the user will interact with the solution	Specific & Realistic specification 6	How will you test this Specification?
 Aspects relating to safety and accessibility. Font types used Length of the movie Types of music Components that make up its elements 	Specific & Realistic specification 7	How will you test this Specification?
 Links to it Social interactivity Durability 	Specific & Realistic specification 8	How will you test this Specification?

Can be correctly interpreted by others. (Have a classmate look at this design)	What questions did your classmates have about the design?
	What changes did they recommend to you?
Drowing of docign E (Make	cure to label eventhing)
If you are doing a movie, yo	bu need to create a storyboard

Presents the chosen	Which design was chosen?							
design and justifies								
selection with	Why did yo	u choose this	design?					
detailed reference	eference							
to the design								
(Justify - Give valid								
reasons or evidence to								
support an answer or conclusion.)								
,								
	Explain hov	v will this desi	ign solve the _l	oroblem.				
	What quest	ions may the	designer ask t	to be able to	design the pro	oduct?		
	What other	things might	enhance the	effectiveness	of the produ	ct?		
	Which desig	gn specificatio	ons were met	? (Put an X in t	he box below)		_	
	Spec 1	Spec 2	Spec 3	Spec 4	Spec 5	Spec 6	Spec 7	Spec 8
	The above	l design specifi	 cations could	not be met b	ecause:			
		5						
	Changes th	at I made to t	he design inc	lude:				

Feasibility	Ask Yourself: Do I need to do more research to complete my design? For example, how do I join one part of my design to another? (If I go to do more research, I should include this in my Primary or Secondary research)
	What materials do you think should be used, and why?
	Are the materials available?
	(Circle one) YES or NO
	What resources do I need to make the design?
	Does the school have the resources (tools, machinery, hardware, software or materials) to make the design?
	(Circle one) YES or NO
	If not, what can I do to make the design?
	Will I have to get any resources myself? If so, where and when?
	List the skills or processes I need to make this design.
	Do I have the skills to make this design?
	(Circle one) YES or NO
	Can I gain the skills to make this design?
	(Circle one) YES or NO
	How much time do I have to make the design?
	How many classes is this?
	Will I be able to make this design in the time available?
	(Circle one) YES or NO
	What will the costs be for the design?
	Would it cost too much?
	(Circle one) YES or NO
	List any safety concerns.
	ls it safe?
	(Circle one) YES or NO

Feasibility	Why do you think your client will like the idea?	

Develops accurate and detailed planning drawings/diagrams (*This should not be a sketch*. It should be precisely drawn using rulers and compasses where applicable, computer drafted, or storyboarded)

Outlines requirements for the creation of the chosen solution. (Outlines - Give a brief account)

Creating the Solution Constructs a detailed and logical plan, which describes the efficient use of time and resources, sufficient for

intended and is presented appropriately				
Resources examples: Product materials- hardwood, pylop or cornstarch:				
Product tools - hand tools, machinery, CAD software and CAM hardware.				
Digital materials - text, fonts, ima	ges, audio, video, animation, sprites	and icons.		
Digital tools -software and haraw	are (input, processing and output de	evices).		
Task	Tools / Equipment	Materials	Time or Date	Completed (Checkmark)

peers to be able to follow to create the solution. Follows the plan to create the solution, which functions as

Which steps might take more or less time that you expect?

Does your plan contain a sequence of logical steps?

(Circle one) YES or NO

What resources did a friend explain needed explaining? (Ask a friend what other resources might be needed or clarified)

When does your product need to be completed by?

Have you made sure you have enough time to complete your product?

(Circle one) YES or NO

How much time did you allot for practicing a new skill?

Have you given time for practicing or learning a new skill?

(Circle one) YES or NO

How much extra time do you have built into the plan?

Have you allowed extra time in case something goes wrong?

(Circle one) YES or NO

What other ways might you create the solution if you do not have enough time?

What other ways might you create the solution if you do not have the proper resources?

What other ways might you create the solution if you do not know how to make it?

Have you planned for testing at appropriate times in the manufacturing process?

(Circle one) YES or NO

Where is this explained in the plan?

Add Pictures (if it is a 3D product, try to get all important angles) or Screenshots of your project here or as attachments in the Appendix

Demonstrates excellent technical skills when making the solution. (Ask a teacher to examine your product/solution) What feedback have teachers given you about your product?

I	(Ask a classmate to examine your product/solution)
	What feedback has your classmate given you about your product?

(Ask another classmate to examine your product/solution) What feedback has your classmate given you about your product?

(Ask a classmate to examine your product/solution) What feedback has your classmate given you about your product?

Fully **justifies** changes made to the chosen <u>plan</u> when making the solution. (Changes to the plan are usually expected, especially after feedback has been solicited) Which of the following needed to be changed?

Plan Changes	Explanation of WHY change was made
Task changes	
Tool / Equipment changes	
Materials changes	
Time or Date changes	

Evaluating

Designs detailed and relevant testing methods, which generate data, to measure the success of the solution Tests that could be tried include:									
 Qualitative tests can include: using a questionnaire to find out the look of a product surveying students to find out withey found too easy and which with a taste panel to fir likes a food product interviewing an expert after he of solution performing a user trial by giving with and observing reactions. 	rget audiend ts of a video difficult target audie s interacted children to p	 <i>n – User Trials</i> Quantitative tests can include: timing users who are tasked with finding a particular piece of information on a website measuring a product to ensure it is the correct size and within weight limits beta-testing interactive media to find bugs running performance tests to determine the strength of a product checking the capacity of a storage device counting the number of hits on a website over a set period of time. 							
Specification		Testing Method							
Critically evaluates the success of the solution against the design specification based on authentic product testing									
	Degree	to which spo	ecificatior	n met					
	1=not a	t all		5=to	otally met				
Design Specifications	1	2	3	4	5	How are design specifications met?			
Specification1									
Specification2									
Specification3									
Specification4									
Specification5									
Specification6									
Specification7									
Specification8									

Explains how the solution could be improved (*Explain - Give a detailed account including reasons or causes*) You can do this through:

- written text—paragraphs or tables
- diagrams and charts
- annotated photographs/screenshots of the prototype

sketches.

Explains the impact of the product on the client/target audience. (You can present this in written form, a list, or a table) What has your product done to help with the client's or target audience's problem? How does this solution improve the client's or target audience's situation?

Examine the design brief, have you modified anything from the overview?

What negative effects could your solution create?

ENGLISH	KOREAN	FRENCH	GERMAN	LAO	JAPANESE
ACKNOWLEDGED	인정하다	reconnaître	anerkannt	ຊາບ	認める
ANALYSING	해석하다	analyser	auswerten	ການວິເຄາະ	分析する
APPROPRIATE	적당한	approprié	angemessen	ຕາມຄວາມເຫມາະສົມ	恰好
ATTEMPT	시도하다	tentative	versuch	ຄວາມພະຍາຍາມ	企てる
BROAD	넓은	vaste	breit	ວິສານ	幅広い
COLLECTING	수집	collecte	sammeln	ການເກັບກຳ	採取
CONSTRUCT	구성	construire	konstruieren	ໂຄງການກໍ່ສ້າງ	構築する
COMPARE	비교	comparer	vergleichen	ສົມທຽບ	比較する
COMPETENTLY	유능	compétence	kompetent	ສາມາດແຂ່ງຂັນ	有能に
CREATE	작성	créer	schaffen	ສ້າງ	作る
DEFINE	정의	définir	definieren	ກຳນົດ	定義する
DEMONSTRATE	보여	démontrer	zeigen	ສະແດງໃຫ້ເຫັນ	実証する
DESCRIBES	설명	décrit	beschreibt	ອະທິບາຍ	説明
DESIGN	디자인	conception	Design	ການອອກແບບ	デザイン
DETAILED	상세한	détail	detaillierte	ລາຍລະອຽດ	詳しい
DEVELOP	개발	développer	entwickeln	ການພັດທະນາ	開発する
DISCUSSING	토론	discussion	diskussion	ສົນທະນາ	議論
EVALUATE	평가	évaluer	bewerten	ປະເມີນຜົນ	評価する
EXPLAINS	설명	explique	erklärt	ອະທິບາຍ	説明
FEASIBLE	가능	possible	machbar	ຄວາມເປັນໄປໄດ້	可能
IMPACT	충격	impact	auswirkung	ຜົນກະທົບ	影響
INTENDED	예정된	destiné	beabsichtigte	ຈຸດປະສົງ	するつもりである
IDENTIFY	확인	identifier	identifizieren	ກຳນົດ ⁻	確認する
JUSTIFY	맞춤	justifier	rechtfertigen	ອະທິບາຍ	正当化する
LOGICAL	논리	logique	logischen	ເຫດຜົນ	論理的な
LIST	목록	liste	Liste	ບັນຊີລາຍຊື່	リスト
MENTIONING	언급	mentionner	erwähnung	ກ່າວຕື່ມ	言及する
MENTIONS	언급	mentions	erwähnt	ບອກ	言及
NUMBER	숫자	nombre	anzahl	ຈຳນວນ	数
OUTLINE	개요	aperçu	Umriss	?	アウトライン
PART	부분	partie	teil	ສ່ວນ	一部
PRESENTATION	프리젠 테이션	présentation	Präsentation	ການນຳສະເຫນີ	プレゼンテーション
PRIORITIZE	우선 순위를	la priorité	Priorität einräumen	ບຸລິມະສິດ	優先順位をつける
RANGE	범위	gamme	bereich	ລະດັບຄວາມ	範囲
SELECTING	선택	sélection	auswahl	ການເລືອກ	選択
STATES	미국	états	staaten	ບອກ	* * * * * * * * * * * * * * * * * * *
SUMMARIZE	요약	résumer	zusammenfassen	ສະຫຼຸບ	まとめる
TESTS	테스트	essais	tests	ກວດ	テスト
USERS	사용자	utilisateurs	benutzer	ຜູ້ຊົມໃຊ້	ユーザー
USES	사용	utilise	verwendet	ການນຳໃຊ້	使用
VIEWS	조회 수	vues	ansichten	ທັດສະນະ	意見