

D&T Coursework

Your coursework is made of 2 parts:

1. Designing = 62% (*your folder*)
2. Making = 39% (*the bird table or whatever you make*)

This is further broken down into:

- 9% Identify needs
- 26% Develop ideas
- 9% Communication
- 9% Working schedule
- 39% Make
- 9% Evaluation

Deadlines:

- 4 weeks into the Autumn term
Folio completed (except final evaluation)
- 2 weeks before ½ term (Autumn term)
Start manufacturing.
- Start of Christmas Hols.
Completed Manufacturing with your evaluation to do over the Christmas hols.

This means working this summer hols!

This gives a term to complete all the revision needed for the exams.

How big should your folio be?

About 20 A3 pages!

In the following detailed breakdown I have give an indication of the amount of pages for each section,

Protecting your work

You will need a folder to look after your work, like each page is a £50 note. However when we send if of to the examining board it must **NOT** be in any folder or plastic wallet to keep the price of postage down for the examining board.

Keep it simple!

Don't be too ambitious, large & complex projects take loads of time & will not get you a better mark than a much smaller & simpler project.

Identifying needs & Research (9 marks, 4-5 pages)

Design Brief

(Explain what you intend to design to solve what problem)

Needs (3 marks)

- What do people need
(mum always loses her keys because she does not have a special place to leave them!, design & make a key rack. Get the idea!)
- Anticipate use (how are they going to use it!)
- conflicting demands
(it must be cheap, but I really want to make it out of Gold with diamond studs!)



Identifying needs & Research Continued (9 marks, 4-5 pages)

Information (3 marks)

- In the real world designers are asked to solve problems they know little about, so they have to do load of research to understand the problem & then even more looking at how other people have solved similar problems, what new materials & process are about which may help the designer improve on past solutions to this problem.
- How do they go about this:
 - ☺ Market research
Go out there and ask the people who will be using your product what they want. eg; with your new inter-galactic space hoper what do they need in this new product?
 - ☺ Consumer surveys
Ask people what they think about existing products they use, eg; the toaster they use at present....
 - ☺ Visits to manufactures
 - ☺ Product test reports
This is a great one, you evaluate an existing design in great detail: exploded drawings, photos, manufacturing methods, materials etc, etc.
 - ☺ E-mail, CD-ROMs, Databases, Internet, Data sheets, Magazines, textbooks
 - ☺ People in manufacturing industry

Identifying needs & Research Continued
(9 marks, 4-5 pages)

Specifications (3 marks)

- *(A list of things your design should do/have:
What the product should look like, what it has to do, manufacturing costs, material, energy source, one-off or quantity production, ergonomics, environmental considerations, appropriate form of control system.)*
- *Include:*
 - purpose
 - user & performance requirements
 - material to be used
 - size & cost limitations
 - scale of production
 - appearance
 - Safety factors
 - Product maintenance
 - environmental issues

Develop Ideas (27marks, 6-7 pages)

Ideas (12 marks)

- Brainstorms
- Attribute analysis
- Freehand sketches 'Initial Ideas' Many & not detailed
(Sketch out those ideas in your head, only rough ideas, but get them on paper, the car engine that runs on water!)

Develop (12 marks)

- Transferring a solution from another area
(Has somebody already designed a neat solution to this or something similar)
- observational drawings
(sketch out the existing car-park layout, & explain its problems)
- Investigative drawings
- Produce a detailed graphic model, probably best on computer
3D or CAD (Computer Aided Design), mathematical modelling
- Anthropometrics drawing
(how does the object fit the person, what are the smallest and largest persons sizes?)
- Adapt your design were necessary to meet the requirements of your brief

Review (3 marks)

- Selection & Rejection (optimising techniques)
(Which ideas are good & which bad, make a table with your test criteria to find out which is best)
- Annotate all your work
Explain the problems, benefits of a design measuring this against your specifications & Brief.
- Annotate, annotate, annotate
Not reams of words, but short concise paragraphs next to each drawing, explaining why you chose this idea, its merits & problems measured against your specifications.



Communication

(9 marks, every page of your folio)

These are your drawings, how you have laid out your folder, headings, arrows, the sequence of your pages & how you lead the reader through your design pages.

Your folder should be predominately A3 paper, the sheets should be clean, uncreased & presented carefully.



Written communication (3 marks)

- Annotate, annotate, annotate

Not reams of words, but short concise paragraphs next to each drawing, explaining why you chose this idea, its merits & problems measured against your specifications.

Yes I know I have mentioned this twice, but it's important....

Other media (3 marks)

- sketch orthographic views
- sketch pictorial views (*Oblique or Isometric drawings*)
- Produce an exploded drawing
-

ICT (3 marks)

- Produce an Orthographic drawing, 3rd angle
(*working drawing*)

Indicate sizes, proportion (scale), layout appropriately on A3 paper

- Use computers were appropriate to support/present you work.



Select & Use tools effectively & safely
(39 marks, 3-4 pages)

All workshop work, to produce a not to complex design, finished to a high quality, showing: appropriate workshop practices, safety, appreciation of manufacturing techniques, appreciation of the properties of different materials.

This will be all the time you spend in the school workshop, it is difficult to do this work at home; one you might not have the facilities & two I can't oversee your progress & mark you according to the amount of help you have.

So use the school time for this largest marking area, & home time to get your folder up to scratch.

Select & Use (18 marks)

Make products (18 marks)

Work Safely (3 marks)

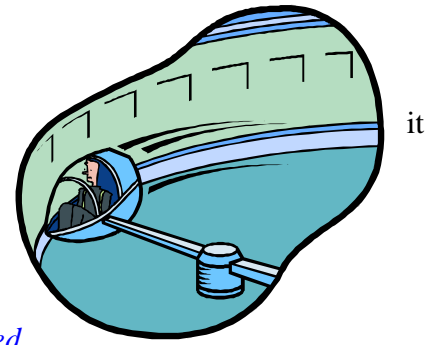
You need to demonstrate a regard for safety awareness for yourself & others. How:

- Identify safety procedures
- Record safety awareness in your production plan/schedule
- Carry out risk assessment & Hazard analysis.



Tests (9 marks, 1-2 pages)

This is through your whole project in your annotation, but also a separate large piece at the end to express how you would improve it, if you made again, and everything can be improved.



Tests & Checks (3 marks)

- Quality control
when did you test your product, NO not just at the end, you identified key manufacturing stages in your work schedule & tested your product at each of these stages, didn't you, yes Mr Jenner... Well tell & show the examiner how, when, where & what the results were from each of these.
- Quality assurance
 - Define what is expectable quality for your product
 - Test your design, what are the tests & what are the results?

Evaluate produce (3 marks)

- Judge the quality of a product.
If you were looking in a shop at this product, what would you think of it?
 - *Key points: How far did it meet your need, that thing you wrote down under the heading of Brief.*
 - *Its fitness to do the job would you use it?*
 - *Does it work, well or just?*
 - *convenience, how easy is it to use*
 - *aesthetic appeal (how it looks; colour, shape, form, texture)*
 - *appropriateness of resources used*
Lovely Teak, but not too good for the Rain Forest!
 - *Manufacturability*
How easy is it to mass-produce in a factory?
 - *Alternative products & solutions*
Have you now come up with a better solution to your identified problem?
Well tell me about it, on paper silly..
- Impact of your design
Think of the motor car, wonderful invention, but it has killed thousands of people, caused terrible noise & air pollution. What about your design?

Modifications (3 marks)

- Modifications
What did you change when you started making it, there must of been loads, things you forgot about on the design sheet, or things that worked on paper but not in the real world.

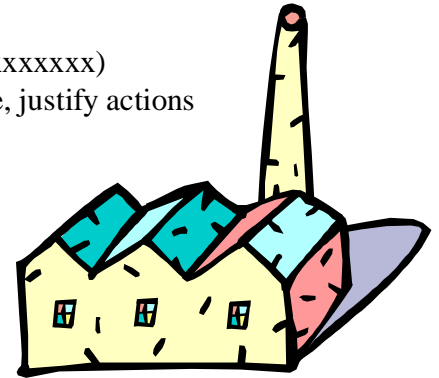
Detailed Working schedule (9 marks, 1-2 pages)

Produce a work schedule (3 marks)

- What has to be done & by what date
Identify critical points in this process (this MUST be done by xxxxxxxx)
- List health hazards with your production/environment schedule, justify actions against risks.

Systems & Control (3 marks)

- Manufacturing can be broken down into sub-systems of inputs, process & outputs.
Detail those for your product & manufacturing methods.
- Evaluate your system, could methods/production processes be improved



Industrial Applications (3 marks)

How would your design be made in Industry

Your design is likely to be a one-off, however the exam board want you to consider the implication of taking your design one step further into production in a factory.

- apply techniques to ensure consistency
how are you going to ensure each part of your design is made the same each time?
- monitor
to achieve the one above you are going to have to rigorously: measure, monitor, test the product at different stages to ensure it is of a suitable quality.
- commission
individuals are likely to want slight differences to their product, how are you going to allow for this?
- maintain & control
Safety precautions/routine in the industrial context, what are they?



Deadlines 2008

Complete by	Tasks	A3 Pages
8 th Sep	<ul style="list-style-type: none"> • Paper design 	1
	<ul style="list-style-type: none"> • Design Brief 	
	<ul style="list-style-type: none"> • Design Need; <ul style="list-style-type: none"> ○ Specifications (min. of 9 things you can measure at the end of your project) 	
15 th Sep.	<ul style="list-style-type: none"> • Research; <ul style="list-style-type: none"> ○ Evaluate existing designs (minimum of 4, as listed above) 	1
	<ul style="list-style-type: none"> ○ Materials you could use ○ Methods of forming ○ Methods of joining ○ Methods of finishing 	2-3
	<ul style="list-style-type: none"> ○ Questionnaire 	1
	§ Design	
22 nd Sep.	§ Do it	
	§ Present results	1-2
	<ul style="list-style-type: none"> • Initial Ideas 	
	<ul style="list-style-type: none"> • Selection & rejection 	
29 th Sep.	<ul style="list-style-type: none"> • Development; <ul style="list-style-type: none"> ○ Detail drawings of method of fixing ○ Exploded drawing ○ Anthropometrics drawing 	
6 th Oct.	<ul style="list-style-type: none"> ○ Orthographic drawing 	
	<ul style="list-style-type: none"> ○ Cutting list 	
	<ul style="list-style-type: none"> ○ Details for manufacture 	
13 th Oct.	<ul style="list-style-type: none"> • Work schedule (1 page) 	
	<ul style="list-style-type: none"> • Systems & control * Industrial Applications (1 page) 	
Start 3 rd Nov. Finish 9 th Mar.	<ul style="list-style-type: none"> • Make it <ul style="list-style-type: none"> ○ Take photos during manufacture ○ Keep all rough work 	
16 th Mar.	<ul style="list-style-type: none"> • Test (1-2 pages) <ul style="list-style-type: none"> ○ How well does your design meet your specification? ○ Test on consumer ○ What modifications did you make during manufacturing? 	