



Design Brief

A design brief is a summary of the design opportunity. It is typically 1-2 paragraphs long.

It should:

- State the context
- Identify the client/User
- State the design opportunity or problem
- Identify any constraints— things that limit what can be done
- It might also contain some user needs and wants

What is a Specification?

A specification is a set of requirements a product must have and could have. For example, if you were designing a mobile phone, you know that there are some things a phone **must** have, like a screen, some buttons, battery charging port, etc (these are **essential** requirements). Then there are requirements more about the shape and colour which make the product look good, like the colour, shape, and features (these are **Desirable** Requirements).

A designer will then use this list of requirements (**Specification**) to design the product. The specification generally comes from the client and helps the designer know what they need to design.

Specification	Desirable	Essential
The phone must be...		✓
The Phone could be...	✓	

What is good annotation?

Annotation is very important when designing a product. It can help to explain parts of your design, like a function or moving part, or perhaps just the thinking behind the design. Here is an example of good annotation

This is two key fobs designed to fit together, representing friendship.

The size is 70mm in diameter so enable them to easily fit in the pocket.

The key fob is made from Acrylic plastic as this comes in a range of colours and can be laser cut into shape.

I have chosen red and black colours as these could be considered unisex and would suit both boys and girls.

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Questions

Aesthetics – How something looks and feels.

What colours are used? How does the product look and feel?

Cost

How much does it cost to buy?

Customer – Target Audience

Who is going to buy the product? Who is going to use it?

Environment

Does it use recycled materials? Could it be recycled?

Size

How tall/wide/long is it in mm?

Safety

Are there any sharp edges or small parts?

Function

What does it do? How does it do that? What mechanisms are used?

Materials

What is it made from?

Manufacturing

What processes were used to make it?

Key Words and definitions

Task analysis - identifying what processes to be done to complete a task

Aesthetics - the overall appearance of a product, what is going to make a product attractive for the customer

Product analysis - examining existing products to identify their positive and negative attributes, In order to incorporate positive attributes into a new design.

Target audience - A description of the potential customers for a product (who are you designing for?)

Function - what is the product supposed to do.

Brief - information provided by a customer concerning a problem which they are trying to solve.

Specification - the list of requirements needed to achieve a high-quality product for the customer.

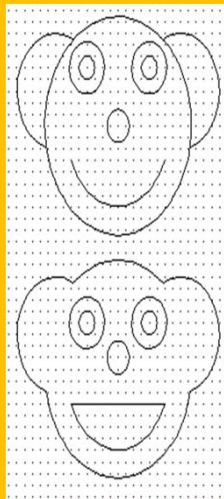
Annotation - notes and statements that provide more information to explain a concept.

computer aided design - using a computer to design A product.

computer aided manufacturing - making a product using a machine that is controlled by a computer, for example a CNC router or a laser cutter.

Common Mistakes

Below are two very similar designs on 2D Design. One of these designs worked and the other didn't.



This is how the laser has cut out the designs. Can you see which one has worked?



The bottom design is the successful one because the ears are still attached and the mouth is a whole shape instead of just a single line.

Examples of blister packaging

A blister is the plastic covering you see on the examples below.



Packaging and Labelling

The most common information on packaging is

- use and care of the product
- Manufacturer name and address
- Expiry date
- Ingredients/components
- Shipping and handling
- Certificates and warranties
- Warnings and suggestions





Evaluate

What is the purpose of an evaluation?

- Decide whether it satisfies the brief.
- What other people think of your product.
- It can help you decide how and where your product can be improved.
- It can test whether the idea will work.

Questions to ask yourself when evaluating.

- Does it work? (could you get other people to test it and record the results?)
- What would I do differently if I could make it again?
- What did I find difficult?
- What was a success?

CAD/CAM

CAD stands for **Computer Aided Design**, that means that any program uses a computer to design a product is called a CAD program, examples of these are 2D Design, Google Sketch up, Fusion 360 and many more.

CAM stands for **Computer Aided Manufacture**, that means any machine that is controlled by a computer used to make a product is called a CAM Machine. Examples of these are a Laser cutter, Vacuum former, CNC Router and many more.

Vacuum forming process

