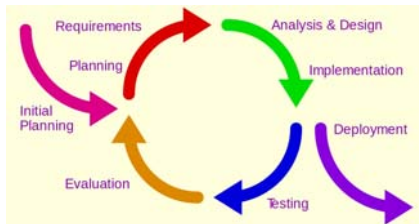# Passive Amp:

Iterative Design: Iterative design is **a circular design process that models, evaluates and improves designs based on the results of testing**. analysis - starting with a context or design brief , a designer may explore the design issue and generate ideas to solve the design problem

Modelling ideas in card, paper, clay or other materials can create a cheap and quick way to do initial trials with a product. Using an easy to modify material provides a good way of seeing how a product looks and works, eg checking handles are in the right place or parts fit together well. Taking photographs or video throughout this can show development.
destructive testing - tests the product to its extreme to see what conditions it can tolerate before being destroyed, to help decide on the best materials and construction methods to use
non-destructive testing - tests the model to identify areas of weakness without destroying it, to test the function of the product and highlight any unexpected design flaws
market testing - tests the product with its **target market** to give feedback on performance and design.

Collaboration
Working with others is an excellent way of gaining feedback for designs. Many companies use groups of designers with different tastes, ideas and specialities to allow a diverse range of opinions to be acted on.
User-centred design is a different style of designing from **iterative design**, as it bases the design of a product around the needs of the **target market** rather than the continual development of **iterations**. The user is questioned and consulted throughout development, and evidence is gathered through questionnaires, interviews, testing and observations, and the results are used to improve the product.
Systems approach to designing
Designing certain products, eg electrical products, may require a different technique known as a **systems approach**. This logical approach is particularly useful in electronics where there is an **input, process and output**, as each stage has to perform a specific function before moving on to the next step.

A is for **Aesthetics**	
C is for **Cost**	
C is for **Customer**	
E is for **Environment**	
S is for **Size**	
S is for **Safety**	
F is for **Function**	
M is for **Material**	

Product analysis: an in depth look at a product using the ACCESSFM headings to help us understand and evaluate the products key features.
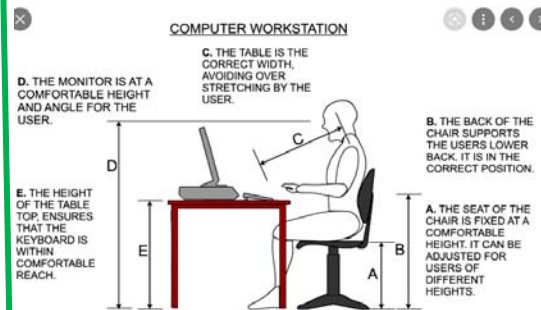
Designers use product analysis to inform their design decisions, to get ideas, to see what existing products are on the market and to improve upon them.

Research is important in product design. We need to understand the client's needs and wishes for a product so that we can meet them in our designs.
Primary research is first hand experiences and date gathering such as a survey. Secondary research is using existing sources such as creating a mood-board from someone else's images, books, internet etc.

Ergonomics involves **designing the workplace to fit the needs of the worker rather than trying to make the worker adjust to the workplace**.
Anthropometric data are **data on human body size and shape** and are the basis upon which all digital human models are constructed.

Quality assurance decisions can also be added during the design process to ensure that problems are picked up and fixed within the system, eg a decision stage checking the **dimensions** of a part that has been manufactured.
Quality Control: check points in the manufacturing process to ensure no faulty products pass.
Tolerance levels: the variable amount that is acceptable eg. The amount longer or shorter the product can be before it is unacceptable**.**
Isometric drawings, sometimes called isometric projections, are a good way of showing measurements and how components fit together. Unlike perspective drawings, they don't get smaller as the lines go into the distance.
There are three main rules to isometric drawing:
horizontal edges are drawn at 30 degrees
vertical edges are drawn as vertical lines
parallel edges appear as parallel lines

Key Words:
Iterative design
Ergonomics
Anthropometric data
Market testing
Prototype
Collaborative design
User Centered Design
Systems approach
Quality control
Quality assurance
Tolerance levels
CAD CAM
Laser cutter
.