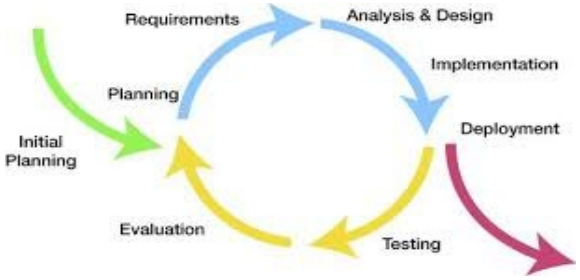
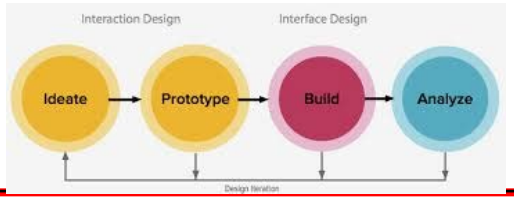
Y9 Block 4: Environmental challenge

Key terminology

Environment: 1: the surroundings or conditions in which a person, animal, or plant lives or operates. 2. the natural world, as a whole or in a geographical area, especially as affected by human activity.
Change: make or become different.
Problem solving: the process of finding solutions to difficult or complex issues.
Client: a person or organization using the services of a lawyer or other professional person or company.
User: a person who uses or operates something.
Prototype: a first or preliminary version of a device or vehicle from which other forms are developed.
Model: a three-dimensional representation of a person or thing or of a proposed structure, typically on a smaller scale than the original.
Iterative: relating to or involving iteration, especially of a mathematical or computational process
Evaluation: the making of a judgement about the amount, number, or value of something; assessment.
Refine: make minor changes so as to improve or clarify
Purpose: the reason for which something is done or created or for which something exists.
Testing: take measures to check the quality, performance, or reliability

- Iterative design is the process of continual improvement, of a concept, prototype, design or product. It is a **CYCLICAL** approach to the development of a product, whereby a design is improved by frequent testing, client feedback, focus groups, materials testing, prototype testing, design development and evaluation, until a final refined / developed design/product is reached.
- It differs from the **linear** approach to design, whereby the designer goes through several predefined stages, one at a time, until a conclusive design is reached.
- The **Iterative Design Cycle** works at it's best, when a student understands how each of its individual components (we call them 'DESIGN TOOLS' can be used, to help in the design and development





An iterative design process

CYCLE 1 IDENTIFYING & INVESTIGATING DESIGN POSSIBILITIES

- Identify, investigate and outline design possibilities to address needs and wants.
- Analyse & evaluate

Tasks involved: Task analysis, client identification, designer/existing products research and conclusions for each piece created.

CYCLE 2 IDENTIFYING & INVESTIGATING DESIGN POSSIBILITIES

- Generating Ideas, Design & make prototypes that are fit for purpose
- Analyse & evaluate

Tasks involved: initial designs, prototyping, modelling, client feedback, developed ideas.

CYCLE 3 & 4 DEVELOPING DESIGN IDEAS TO ONE FULLY DEVELOPED IDEA

- Design & make prototypes that are fit for purpose Developing design ideas
- Analyse & evaluate

Tasks involved: Manufacturing plans, creation of the final piece, evaluation and client evaluations, photographic evidence

CYCLE 5: TESTING & EVALUATION OF THE FINAL CONCEPT

- Analyse & evaluate

Tasks involved: Evaluation of final piece against the brief, client, needs/purpose, testing by the client in situ, further development of manufacturing

Y9 Block 4: Environmental challenge

Architecture

As our landscapes and world changes, we must adapt our architecture to meet the needs of that generation. Architecture that was once designed and built for function, know has the added constraints of size, shape and having a pleasing aesthetic. Some buildings as well as being fully functioning for a company or purpose, must also have the potential to be adapted for low cost to ensure it last for generation.

Landscapes

As the world develops, landscapes and the environment will ultimately pay the price. As the population increases and technological advances push forward, the world around us will be negatively impacted.

Examples of designs impact to the landscape:

- Deforestation
- Pollution of water sources
- Plastic manufacture and waste in our oceans

Technological

The design world is constantly changing with the advancement in technology. For manufacturers, this change will have an impact for its workforce and production capabilities.

Positives: accuracy improvements, cost effective, sharing of ideas

Negatives: less workforce needed, costly start up prices, waste materials to dispose of.

These continuous advancements can become challenging for companies who will always want to be ahead of trends, but at the same time also want to ensure they still have profit.

Population

As the population increases, there will undoubtedly be further demands made to services and products. With population change (whether that be a decrease or increase) comes a change to the services and items needed to allow those citizens a good quality of life. Some countries have responded to this with extreme actions