Sustainability and the Environment

Week 1: Life Cycle Analysis (LCA)
A company can use a life cycle analysis to consider the impact of a product upon the environment from raw material, manufacturing, use of the product and end of life disposal. **There are 5 main stages:**

Extraction and processing: how much energy is used to extract the raw material from the Earth.

Manufacturing and production: the energy need to manipulate the raw material into a finished product.

Distribution: packaging and transporting the finished product to the buyer/user

In use: the energy that the product and any related consumables used during the life of the product.

End of life: The energy used and potential harm to the environment caused by the disposal of the product.

Week 2: Sustainability
Our planet has to provide all of our basic human needs, food ,shelter, warmth. We use and manipulate many of the Earths natural resources to provide these. The sustainability of the planets resources must be considered by a responsible designer when designing new products.

Resources fall into 2 categories

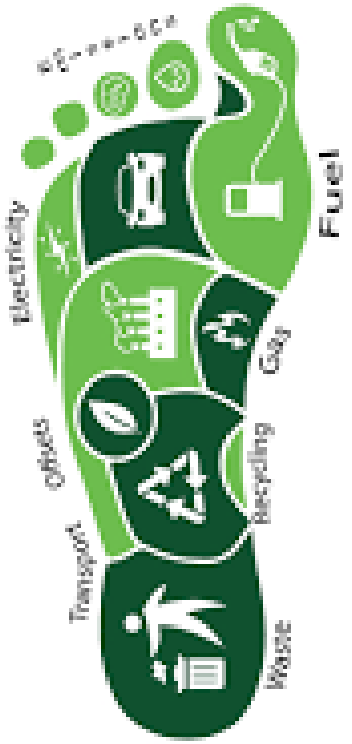
Finite Resources: are in limited supply or cannot be reproduced. This means they will run out and there will be no more on our planet.

Non finite resources: are in abundant supply. They are unlikely to run out if we used the resource with care. They can be regrown over time.

Week 3: Carbon off setting
It is impossible that goods produced will have no negative impact on the environment BUT companies can promote their products as sustainable if they OFF SET the damage caused by manufacturing with projects to reduce carbon dioxide emissions. These could include replanting trees to capture the carbon dioxide. This is called **Carbon Neutral**

Week 4: Population Growth
The world population is growing constantly leading to accelerated use of our natural resources. The population has grow from 2 billion to 8 billion people in the last century. New technology and design is helping us cope with the pressure of such a huge increase in population.

Week 5: Carbon footprint. Every manufacturing process uses energy and resources. From manufacture, transportation, use of the product, end of life disposal of the product. This journey leaves a mark on the planet. We call this carbon footprint.



Week 6: Key words: What do they mean?

1. Carbon footprint
2. Life cycle analysis
3. Finite
4. Non finite
5. Carbon off setting