Life cycle assessments

What is an LCA

*“An L.C.A or Life cycle assessment is an evaluation of all the resources used for the whole of a products life”*

What do we evaluate in an L.C.A?

A close up of a sign

Description automatically generated

|  |  |
| --- | --- |
| **Stage of LCA** | **Questions to answer** |
| **Raw materials** | * What is it made from? * Is this raw material renewable? * Does extracting this raw material harm the environment? * Does this raw material need to be transported from far away? |
| **Manufacture** | * How much energy is used? * What resources are needed to make it? * Does its manufacture produce any CO2 * Are there environmental effects? |
| **Transport** | * How far must it be transported from factory to consumer? * Is it transported by vans/lorries which produce CO2? |
| **Use** | * What resources/energy are needed to  maintain the product? * Can the product be re-used? |
| **Disposal** | * Is it recyclable? * Is it biodegradable? * Will it end up in landfill? * Can it be incinerated to obtain energy from it? |

Example LCA

A picture containing table

Description automatically generated

A screenshot of a cell phone

Description automatically generated

A screenshot of a cell phone

Description automatically generated

A screenshot of a cell phone

Description automatically generated

A screenshot of a cell phone

Description automatically generated

A screenshot of a cell phone

Description automatically generated

|  |  |  |
| --- | --- | --- |
| **LCA Stage** | **Wooden Frames** | **PVC (Plastic) Frames** |
| Raw Materials | Wood – renewable  Transport long distance from Scandinavia | Crude oil – finite  Transport short distance from North Sea |
| Manufacture | Electrical saw uses small amount of energy | Crude oil must be fractionally distilled, cracked and polymerised. This uses a lot of energy  Melting the plastic into frame moulds also uses lots of energy |
| Transport | Transported by lorry  Produces CO2 causes global warming | Transported by lorry  Produces CO2 causes global warming |
| Use | Wooden frames will rot unless they are varnished  Do not last as long | Zero maintenance |
| Disposal | Cannot be reused  Wood can be recycled  Biodegradable in landfill  Can be incinerated | PVC is not easy to recycle  Non-biodegradable so should not be sent to landfill  Can be incinerated |

1. Life cycle assessments
2. Raw materials, manufacture, transport use, disposal
3. Disposal
4. Raw materials
5. Use
6. Transport
7. Crude oil
8. It doesn’t decompose in a landfill
9. Incineration
10. 5