

## REDUCE



This means using less non-renewable resources.

**Reducing** the amount of raw materials we use to manufacture products.

**Reduce** wastage of raw materials used in the manufacture of products.

**Reduce** the amount of energy used to transport products. Perhaps, by manufacturing products locally.

**Reducing** the packaging we use to 'contain' products. Use less supermarket carrier bags.

# RECYCLE

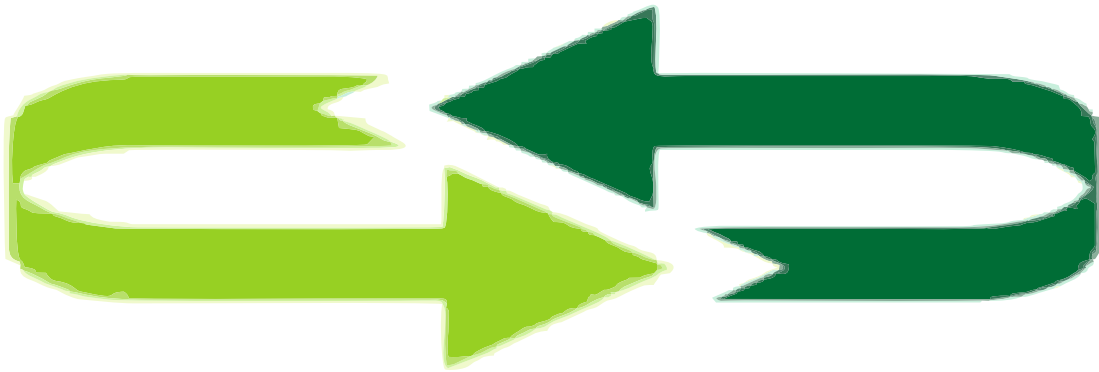


We should recycle as many materials as possible, as this reduces the amount of new materials required to manufacture the products we want.

A vast range of materials can be recycled particularly paper, card, and many plastics.

Recyclable materials can be reformed / processed and made into a new products.

## REUSE

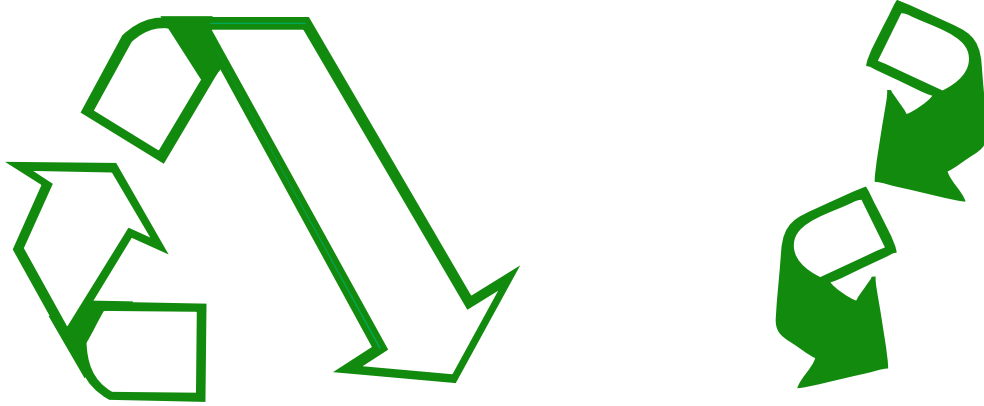


Where possible, we should reuse products or their components / parts when they are disassembled, at the end of their life cycles.

Products should be designed, so that they can be used again or at least their parts, with minimal reprocessing. This is usually cheaper and more environmentally friendly, than using new raw materials.

A good example of reuse is glass bottles, which are washed and refilled. Also applies to some plastic bottles.

## WHAT IS DOWNCYCLING?



Downcycling is a form of recycling. When a product reaches the end of its lifecycle, it is converted into a lower quality product, or is dismantled and its parts are recycled into several low quality products.

Using downcycled materials and components, means that less new raw materials are needed. This saves on energy consumption and reduces pollution, helping to protect the environment.

# E.Gs - DOWNCYCLED PRODUCTS

When paper is recycled and processed, it loses some of its original quality. Recycled writing paper often ends up as lower quality cardboard and manilla folders. Quality writing paper can be downcycled only four / five times.

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**QUALITY WRITING PAPER**



**PHOTOCOPYING PAPER**



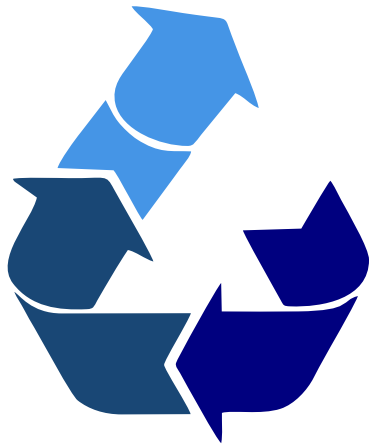
**CARDBOARD FOR PACKAGING**



**TISSUE PAPER  
TOILET PAPER**



## WHAT IS UPCYCLING?

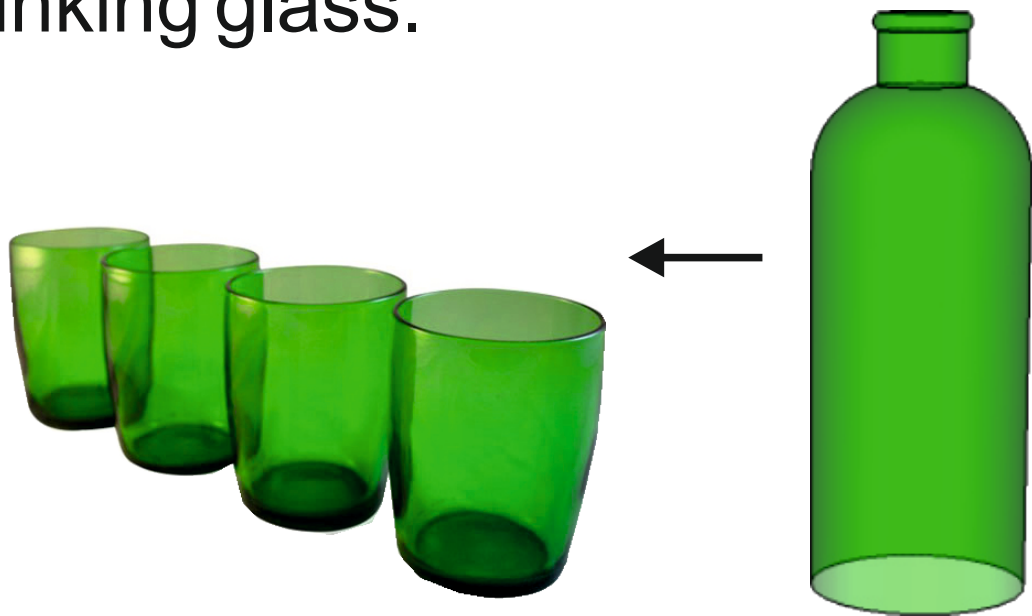


Upcycling is a form of recycling. When a product reaches the end of its lifecycle, it is converted into a new high quality product, or is dismantled and its parts are recycled into several high quality products.

Normal recycling often results in a product being dismantled and recycled into lower quality products (called downcycling). When upcycling, the new product is of a higher quality than the original product.

## EXAMPLES - UPCYCLED PRODUCTS

These quality drinking glasses have been upcycled from glass wine bottles. The top of the bottle has been removed and sent for recycling into new glass. The bottom part of the bottle becomes the drinking glass.



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This shoulder bag has been upcycled from vinyl advertising billboard skins, seatbelts, street banners and fire hoses.

# WHAT IS PRODUCT LIFE CYCLE?



When designing and manufacturing a product, it is important to consider its life cycle.

**Life cycle** is the time from a product's manufacture, to its recycling or disposal, at the end of its useful life.

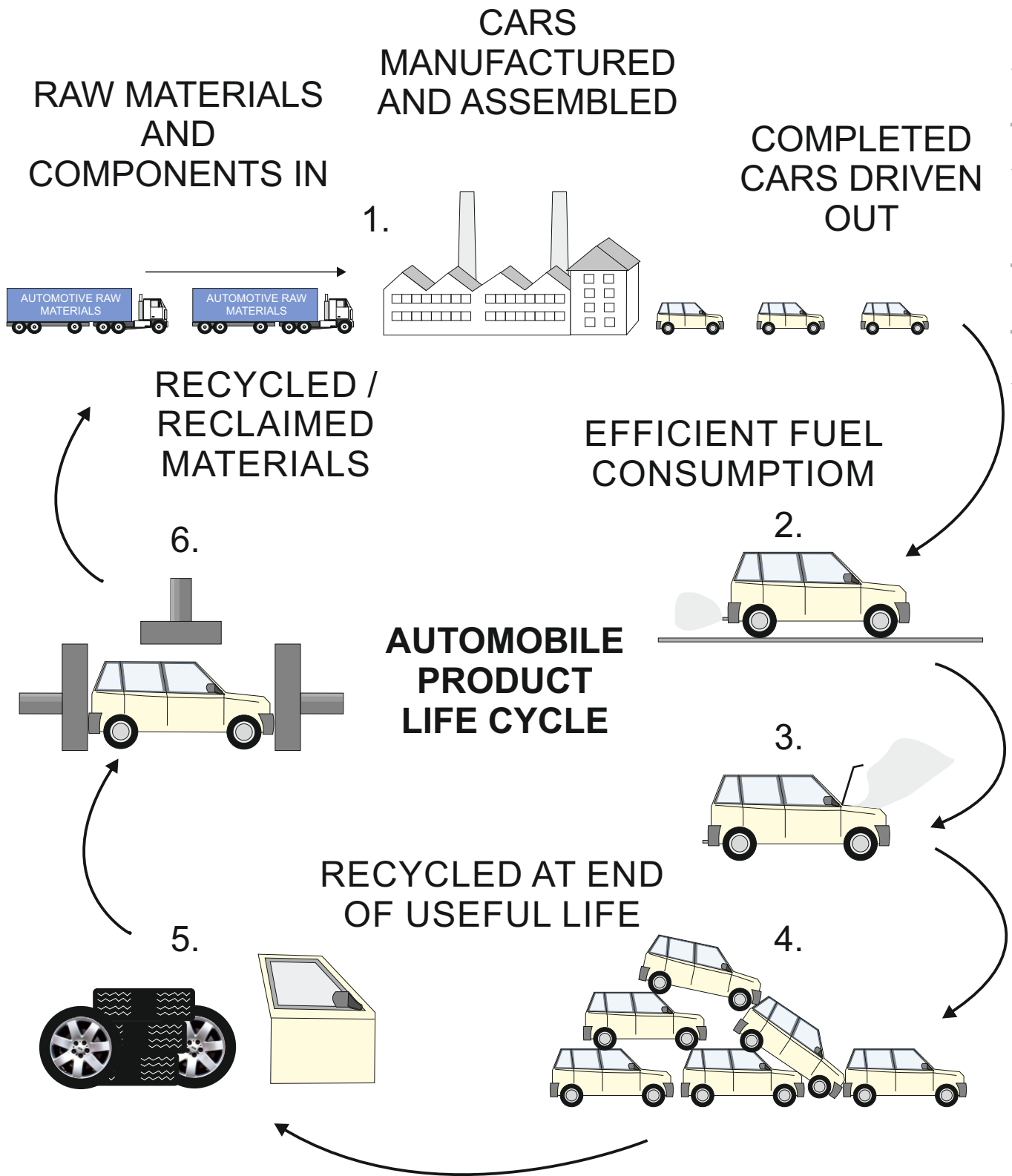
Customers often expect products to be designed and manufactured, so that they do as little damage to the environment as possible, throughout their entire lifetime.

## **Products should:**

Be manufactured, from sustainable / recyclable materials, produce as little pollution as possible, during manufacture and use. Use as little energy / fuel as possible.

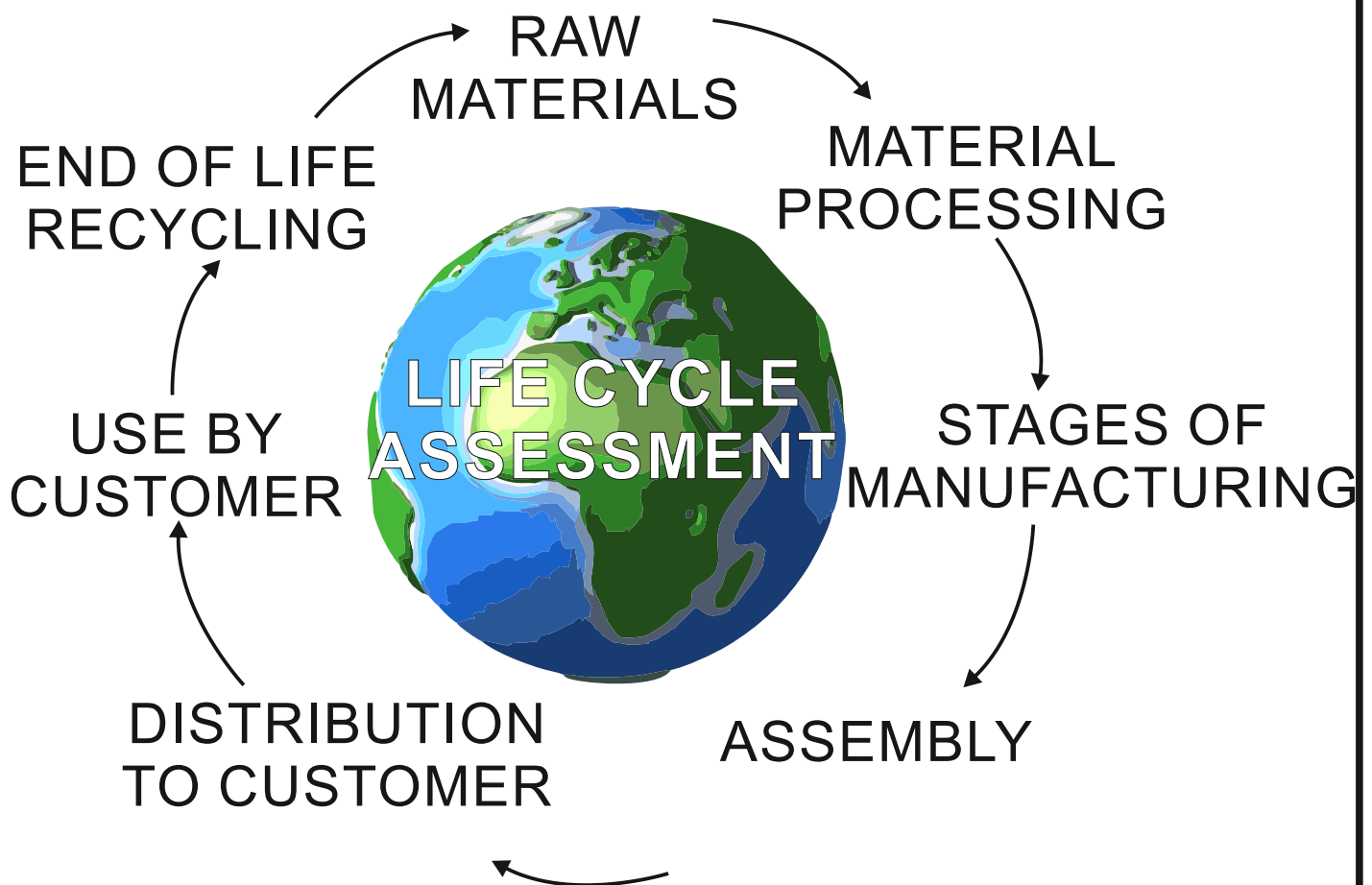


# FAMILY CAR PRODUCT LIFE CYCLE



# WHAT IS PRODUCT LIFE CYCLE ASSESSMENT (LCA)?

The designer / manufacturer plans every stage of making the product and its use by the customer, so that damage to the environment is as low as possible. A written Life Cycle Assessment is produced, as part of the design process.



## WHAT IS PRODUCT LIFE CYCLE ASSESSMENT (LCA)?

This is when a designer / manufacturer **plans every stage of making** a product, so that the product is as environmentally friendly as possible.

Including, using recycled materials and **renewable energy** during manufacturing.

**PLUS**

The designer / manufacturer also designs the product, so that it consumes as **little energy as possible**, when its is being used by the customer and **produces as little pollution as possible.**

**PLUS**

At the end of it's working life, the product has been designed so that it can be **disassembled easily and recycled.**

# SUSTAINABLE FOREST



Card packaging with this symbol, means that the materials used to make the packaging, have been harvested from sustainable forests. This means that the forest is managed in such a way that the trees are replanted so that trees that are cut down are replaced.

A sustainable material is a material that can be renewed, such as natural wood - trees can be grown to replace ones cut down and processed into products.

# THE FOREST STEWARDSHIP COUNCIL



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FSC The Forest Stewardship Council promotes the responsible management of forests - sustainable forestry.

The logo guarantees that paper and card has been purchased from responsible forest operations (sustainable forestry).