

# Life Cycle Assessment

Life cycle assessments are important because:

- They account for everything that happens in a product's life-time
- They account for all environmental impacts
- They allow customers to make informed decisions on which product to buy, meaning producers will try to keep environmentally friendly



## Life Cycle Assessment of a paper bag

### Step 1 - Raw materials

Trees are needed for the paper, meaning deforestation and all the pollution from the machines that are needed. More pollution will come from the transporting of the wood to where it can be processed.



### Step 2 - Manufacturing

This includes cutting the timber, pulping, paper making, and then turning the paper into bags. Machines will be used to do all of this, using up energy and releasing emissions as well as waste.

### Step 3 - Packaging

Materials are used for packaging but paper bags can be packaged to be space efficient so the packaging is not wasteful.



### Step 4 - Transportation

Paper bags are significantly bigger and heavier than plastic ones, so it takes more vehicles and fuel to transport them, releasing air pollution and using up fuel.



### Step 5 - Use

Paper bags can be used multiple times during their life, but they are not very strong and easily rip, meaning that they can't be used for very long.

### Recycling

Paper bags can be recycled a certain amount of times. This lowers the need for raw resources but does require more transportation, energy and emissions.



### Step 6 - Disposal

Paper bags biodegrade very fast, taking 2—6 weeks in a landfill. This is very good since it will have little effect on the environment. However it does still take up landfill space.

