

Combined Science - Chemistry - Key Stage 4

C10 Using Resources

Lesson 2

Life Cycle Assessments (LCA)

Miss Offer



Independent task - LCA analysis

Answer the following questions:

A manufacturer designs a new car with an electric battery.

1. The cars are to be sold in Europe. Aluminium ore is mined in Australia (10,500 miles from Europe) and India (4,600 mile from Europe). Where should the factory that builds the cars be located?
2. The Indian mine uses fossil fuels but the Australian one relies on wind and solar power plants. How does this impact the LCA?
3. Is aluminium a renewable resource?
4. Aluminium can be recycled, but only in southern Spain. How does this affect the LCA?



Independent task - Comparison of LCA

Compare the 2 methods of disposal for 1000 plastic milk bottles

	Burning and using energy to generate electricity	Landfill
Mass of carbon dioxide produced, kg	35	12
Mass of solid residue, kg	0.5	0.8
Mass of sulfur dioxide produced, kg	0.4	0.2



Independent task - Evaluate LCA

Evaluate the use of each material for making greenhouse windows (4 marks)

	Glass	Polymer
Density in g/cm ³	2.8	1.2
Cost in £ per m ²	20	28
Effect of sunlight	No effect	Discolours over time

