

Lesson 7: Subcomponent Design



Overview

By the end of the lesson, pupils should be able to:

- Understand subcomponent design.
- Understand decomposition and recombination.
- Use the Design Heuristic tool to design parts of ideas or products.

Class Length: 40 minutes

Year Groups: All ages

Resources: Computer, projector, printed handouts, pencils.



Lesson Structure

1. Introduction to Subcomponent Design
 - Design Heuristics can be used to modify individual components or parts of existing products or ideas.
 - This enables designers to improve individual parts of a design.
2. Subcomponent Design
 - Design by parts or components is a method which comes from engineering.
 - Involves two activities:
 - a. Decomposition: breaking something into smaller parts.



Lesson Activities

Activity 1

Purpose: Subcomponent Design Familiarisation

Subcomponent Design – Bicycle: The students will be asked to select 5 subcomponents of a bicycle and redesign each individual subcomponent.

Activity 2

Purpose: Decomposition

This activity will enable to understand the concept decomposition by redesigning the subcomponents of a seating device.

Activity

Purpose: Recombination

This activity will enable to understand the concept recombination by redesigning decomposed subcomponents of the seating device from activity 2.

Activity 4

Subcomponent Design – Superhero:

This activity will see the students redesign prescribed and optional subcomponents of their superhero.

Lesson Notes

