

Plastics Module Rationale

This Plastics Module is a complete package of D&T notes, animations and exercises in the context of Plastics.

It is intended to compliment existing plastics resources within D&T departments.

The resources in this Plastics Module include written descriptions, illustrations and Flash animations of polymer processes. Plastics technology theory is supplemented by exercises that test students' knowledge and ability to apply it in design and make assignments (DMAs). Information and exercises are offered digitally, for computer and whiteboard use, and as PDF documents that are easily printed and duplicated.

The learning objective is to develop students' knowledge of polymers and polymer processes so that they can apply it in their designing and making activities.

Developing students' knowledge

Students need knowledge, skills and resources to be able to design and make products. This Plastics Module contains resources that will help students develop their knowledge of:

- a range of polymers
- the processes used in industry to form polymers into products
- additives that enhance polymer properties
- the hazards of additives leaching from polymers
- the concept of the 6 Rs of sustainability i.e. Reduce, Reuse, Recycle, Repair, Rethink, Refuse
- new sources of hydrocarbons that can be used to manufacture polymers.

Exercises

Exercises are in digital and PDF format. They are designed to:

- test students' knowledge
- test students' ability to apply knowledge of materials, tools and processes through design and make assignments (DMAs)

Each design and make assignment has stated:

- learning objectives
- success criteria
- design brief
- specifications
- list of things that must be done during the assignment.

Monitoring and Feedback Made Easy

Assessment of exercises completed by students will give teachers a record of student progress and achievement and will inform teachers of the learning needs of each student. This can form the basis for feedback to students and parents.

Feedback may be achieved by informing students and parents/carers of:

- test results
- the assessment of DMA outcomes against the assignment:
 - design brief
 - specifications
 - success criteria
 - list of things that must be done during the assignment
- the assessment of DMA outcomes against KS3 and KS4 assessment criteria, e.g. how well a student has:
 - analysed and interpreted the design brief and specification
 - researched information
 - considered factors that would influence the design, e.g. technical, safety, moral, environmental and cultural factors
 - modelled and recorded ideas
 - developed and presented designs
 - used tools and equipment
 - worked safely
 - evaluated designs and outcomes.