

Line Bending Project: Egg Holder

Objectives

Students will develop their D&T capability by designing and making an original product of good quality that satisfies the requirements of the design brief.

By the end of the assignment, students will know that:

- Shapes can be formed by bending
- Thermoplastics soften and may be bent when heated
- Thermoplastics remain bent / deformed after cooling
- A strip heater / line bender is used to heat thermoplastic sheet materials along a straight line
- Jigs may be used to aid bending thermoplastics
- Jigs may be used to hold heated thermoplastics after line bending
- Hot parts of strip heaters and heated plastics will burn skin so:
 - risk assessments of the hazards should be carried out
 - safe working practices should be adopted.

Success criteria

Each student:

- Has designed and made an original product that satisfies the given design brief and specification
- Has used tools safely and has strived to achieve quality in marking out, cutting, shaping, finishing and joining their chosen materials
- Knows that thermoplastics can be softened by heating
- Knows that line benders are used to heat (relatively) narrow areas of thermoplastic sheet materials
- Knows that thermoplastics soften and can be bent when heated and become rigid again when cooled.
- Knows that jigs may be used to:
 - aid bending thermoplastics
 - hold heated thermoplastics after line bending until the plastic is cool
- Has assessed the risks associated with working with strip heaters and hot thermoplastics and has worked safely throughout the assignment
- Shows evidence of having evaluated his/her work.

Situation

Soft boiled eggs are eaten whilst they are still hot.

The top of the egg is usually cut off and the egg is then eaten using a small spoon, e.g. a tea spoon.

The problems are:

- Soft boiled eggs are usually too hot to hold by hand
- Unless the egg is held in some way, it rolls around the plate and is difficult to eat.



Design brief

Design an egg holder for soft boiled eggs. The egg holder may hold one or more eggs.

Specification

The egg holder must:

- Be made from plastic sheet materials that have been formed by line bending
- Hold at least one egg
- Be stable
- Be easy to wash
- Be stylish and demonstrate quality in design and manufacture.

The egg holder must not:

- Fall apart in use
- Be dangerous to use
- Break the egg/eggs

What you must do

- Analyse the design brief and specification and pick out the essential requirements.
- Analyse ways that thermoplastic sheet materials may be used to make the egg holder.
- Research the size of eggs and appropriate ways of holding eggs in the holder.
- Use notes and sketches to illustrate designs for an egg holder that meet the requirements of the design brief and specification
- Develop your best idea into a final design. Your design should have sufficient detail so that it could be clearly understood and made by someone other than yourself
- Prepare a cutting list of the materials that are required to make your product
- Prepare a Risk Assessment of the hazards involved with making and using your product
- Make a jig that will enable the plastic sheet to be bent accurately and to be held until cool
- Make your design
- Evaluate the final product, e.g.:
 - how good the design looks
 - how well the design works
 - discover what others think about your product.
- Work safely and complete the assignment on time.