**S3 Design and Manufacture**

**Information Sheet**

**PLASTICS**

**Plastics** can be broken down into two groups **Thermoplastics** and **Thermosetting Plastics.**

**Themoplastics –** These types of plastics can be heated into shape used for a period of time then recycled as they can be reheated and reshaped into their original state. This is known as **plastic memory.** The plastic we use in school belongs to this group and is known as Acrylic. Other thermoplastics which are common are: Polystyrene, Nylon, Acrylonitrile Butadiene Styrene, also known as ABS, Polythene.

**Thermosetting Plastics –** These types of plastics are heated into shape however they cannot be recycled as they don’t soften or reform when heated. Thermosetting plastics are often used when a product needs resistance to extremes in temperature, electrical current, chemicals and general wear. Commonly used thermosetting plastics are: Urea Formaldehyde (UF), Melamine Formaldehyde (MF), Epoxy Resin (ER).

**Coding Systems used with Plastics –** 42% of all plastics are used in packaging products and the majority is recyclable. The problem is at present a lot of these plastics end up in land fill. The plastics industry has introduced a system to encourage people to recycle. Below are codes which are present on household goods.



**Bending Plastic Using the Strip Heater**



This machine heats up a narrow line of plastic (strip) allowing you to make one bend at a time. When you see the Acrylic sag across the heated line then it is ready for bending.

**Bending Plastic using the Oven**

When making complex shapes or bends it is best to heat the Acrylic all over by placing it in the oven. It can be pressed against a former to ensure the shape is coerrectly produced.