



The Best Tools for Cutting and Shaping Materials

KS2 DESIGN & TECHNOLOGY

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Why Do We Need Cutting and Shaping Tools?

When designers and makers create things, they start with raw materials like wood, fabric, metal, or plastic. To turn these materials into useful objects, they need to cut them into smaller pieces and shape them into the right size and form. Using the correct tool for each job makes the work safer, faster, and more accurate.

Think of it like cooking: you wouldn't use a butter knife to slice bread, and you wouldn't use a chef's knife to spread butter on toast. Each tool has a job it's best at.

Hand Tools for Cutting and Shaping

Scissors are perfect for cutting fabric and paper with straight edges. **Craft knives** (also called utility knives) let you make precise cuts on card, foam, and thin wood with their sharp, replaceable blades. **Saws** come in different types: a **coping saw** cuts curved shapes, while a **hand saw** cuts straight lines through thicker wood.

Measuring tools are just as important as cutting tools. A **ruler**, **tape measure**, and **set square** help you mark exactly where to cut before you start. Without these, your cuts might be wobbly or the wrong size.

Shaping Tools

Files and **rasps** smooth and shape materials after cutting. They have a rough surface that removes small amounts of material bit by bit. **Sandpaper** in different grades (from rough to fine) creates smooth, polished edges. Coarser sandpaper removes material quickly, while fine sandpaper creates a beautiful finish.

Chisels are used for woodworking to carve grooves and remove chunks of wood carefully. **Drills** and **drill bits** make holes in wood, plastic, and metal at exactly the right size.

Power Tools for Bigger Jobs

When cutting lots of material or working with tougher materials, **power tools** like **circular saws**, **band saws**, and **angle grinders** do the job faster. These tools run on electricity and require proper training and safety equipment.

Think of it like the difference between walking to school and taking the bus—the bus gets you there faster, but you need to know the rules first.

Safety First

Always wear **safety glasses** to protect your eyes from flying bits of material. **Work gloves** protect your hands, and **ear defenders** protect your hearing when using loud power tools. Never use a tool you haven't been trained to use properly.