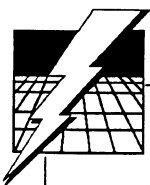


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Introduction

For many projects which you attempt in design and technology, you will probably begin by drawing your ideas and thoughts on paper. Drawing is a part of graphics; this word includes many other skills and techniques you will meet in this book.

To some people (if not the majority), drawing is something that they think they cannot do. The cry of 'I can't draw!' is something you often hear.

This book introduces you to and develops the basic procedures, skills and techniques which are essential if you are to present your ideas effectively. Read the different sections carefully and complete the various tasks. With hard work and practice you will certainly see your drawing ability visibly improve.

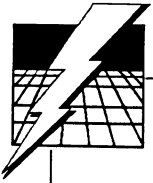
Section 1 (Basic Graphics Materials) describes the drawing materials you will need. Section 2 (Drawing Made Easy) shows you in simple stages how to draw simple shapes and objects in two and three dimensions. Section 3 (Shading and Rendering) deals with making your drawings look more realistic by using different types of colouring tools. This section shows you how to use graphite and coloured pencils, magic markers and ink pens.

Section 4 (Useful Techniques) deals with creating shadow, laying out a page clearly and annotating drawings. Section 5 (Communicating Statistics) demonstrates ways of presenting statistics by using graphs and other types of chart. Section 6 (The Design Process) shows the different steps and stages in the design process. Section 7 (Putting It All Together) applies the drawing skills you have developed to graphics projects centred around the design process. These projects also contain links to other areas of Design and Technology; for example, advertising (designing a poster, p. 53) is part of Business Studies, and textiles (designing a rug, p. 57) is part of Home Economics.

You will notice that some words are printed in **bold type**. These words can be found in a Mini-Dictionary at the back of this book. If you are not sure of their meaning, look them up.

Have fun!





1 Basic Graphics Materials

Materials

Paper

There is a great variety of papers and pads. For all-purpose drawing and coloured pencil work, **layout paper** is ideal. Layout paper is semi-transparent and is also useful for tracing and copying drawings and other images. However, because it is rather thin like tracing paper it can tear or crease very easily, so it must be used with care. **Cartridge paper** is a good-quality drawing paper and is suitable for final sketches, finished drawings and for mounting your **artwork**. Special bleedproof pads (i.e. the ink won't spread or go blotchy) are available for use when working with magic markers. Coloured papers and card are good for special presentations, for example, as a cover for a brochure. Other drawing papers that you may find useful are tracing paper and squared paper. For many of the tasks in this book a cheap drawing pad is adequate.

Fact File

- Paper can be classified into three categories—size, weight and tooth. Paper is available in sizes varying from A0 (largest) to A5 (smallest). For project work, A3 and A4 sizes are the most convenient. Paper is weighted in grams per square metre. The tooth of the paper refers to the paper's surface texture. Some papers, for example, layout paper, have a smooth surface, whereas sugar paper has a coarse surface that 'bites' when you draw on it!

Fact File

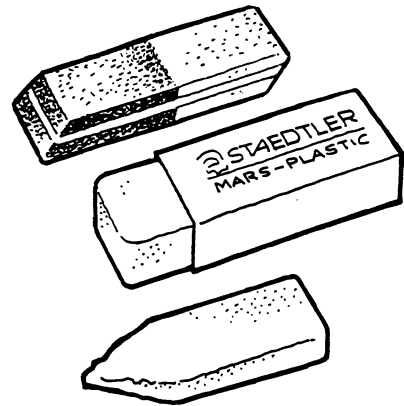
- A forest the size of Wales could supply the world with enough paper for one year.

Erasers

Erasers or rubbers are an important piece of equipment. There are two types of eraser which are useful for correcting errors. The soft putty type can be easily cut with a scalpel so a sharp point can be obtained for precise control. The other type is made from plastic, such as the Staedtler Mars-Plastic eraser.

Points to remember

- 1 Always make sure your eraser is clean by rubbing it first on a piece of scrap paper.
- 2 Rub in one direction to avoid creasing the paper.



Adhesives/Glues

Adhesives and glues stick one surface or item to another, either temporarily or permanently.

Spraymount is a glue which can be sprayed from an aerosol can. It is used for **mounting artwork**; it allows you to reposition work and ensures a flat surface.

Points to remember

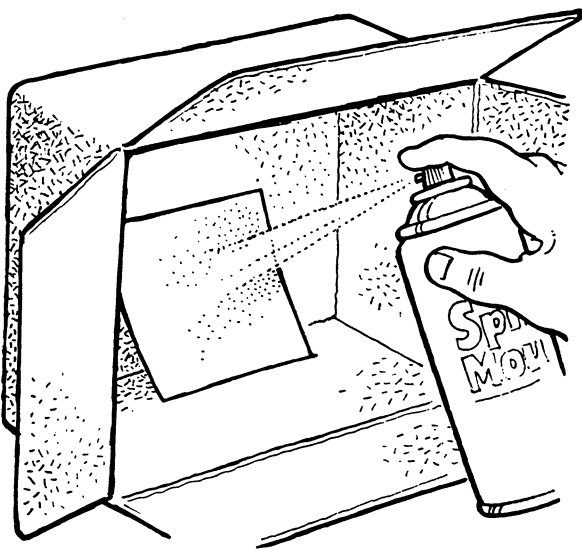
- 1 Spraymount should be used in a well-ventilated area.
- 2 Use a cardboard box to prevent any glue particles from rising into the air.

Glue sticks can be used for sticking paper models and **developments**, but they are not so good for mounting drawings as they may leave lumps underneath. You can't be sure there will be a perfectly flat surface.



Tapes

Low-tack (less sticky) **masking tape** can be used to keep a sheet of paper steady and for masking (i.e. covering) areas of a drawing, for example, when using magic markers. Other useful tapes are double-sided (sticky both sides) and invisible tapes.



Basic Graphics Materials

Materials

Scissors and scalpels

Scissors are useful for general-purpose cutting. There will be times when artwork will have to be cut out very accurately and with a clean edge. Then it is better to use a **scalpel** rather than scissors. Swann-Morton make a variety of surgical scalpel handles with blades that are interchangeable. When using tools and materials you must always think about how to use them safely.

Rulers

You will use two types of ruler, a clear plastic one and a steel rule. A clear plastic rule allows you to see through it to the artwork underneath. Some plastics can be damaged by the solvents used in magic markers. Plastic rules should not be used as a guide for cutting, as a scalpel will tend to cut into the plastic material. Instead, use a steel rule; you will be able to cut out artwork accurately without damaging the rule.

Cutting mat

A cutting mat is made of strong rubber or plastic. It is a base on to which you lay the paper or card you are cutting into with a scalpel. It stops materials slipping and protects the table or bench top. It can be rather expensive but is very useful and will last a lifetime. Alternatively, a flat sheet of cardboard, wood or hardboard will do a similar job.

