

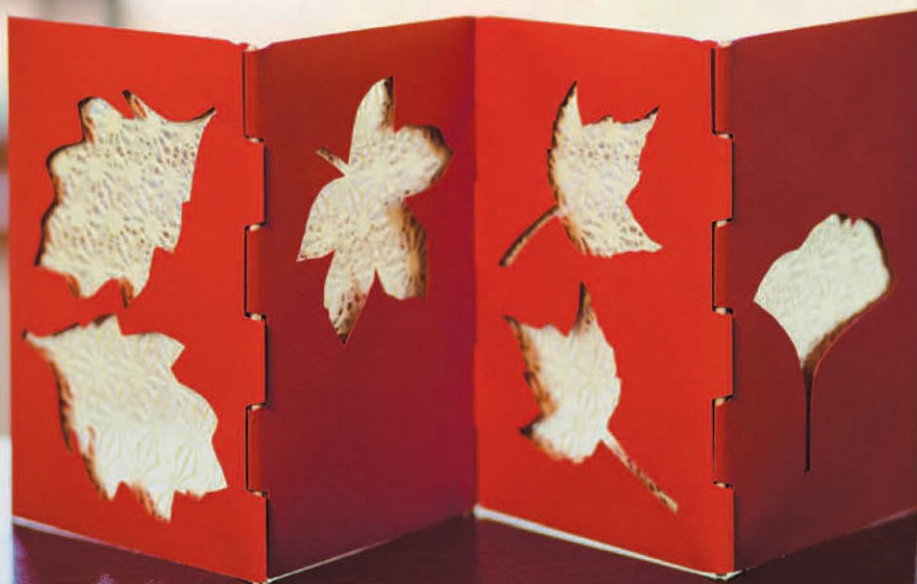


PLAYING WITH PAPER

{ ILLUMINATING, ENGINEERING,
AND REIMAGINING PAPER ART }

HELEN HIEBERT

Q
U
A
R
T
E
R
L
Y





PLAYING WITH PAPER

{ ILLUMINATING, ENGINEERING,
AND REIMAGINING PAPER ART }

HELEN HIEBERT



Quarry Books

100 Cummings Center, Suite 406L
Beverly, MA 01915

quarrybooks.com • craftside.typepad.com



Contents

INTRODUCTION 6

1 GETTING STARTED:
CUT, SCORE, FOLD,
AND WEAVE 8

2 PROJECTS TO PLAY WITH:
ARTISTIC IDEAS FOR WEAVING,
FLYING, ILLUMINATING,
AND INFLATING PAPER 28

3 GALLERY:
TAKING PAPER TO
NEW DIMENSIONS 96

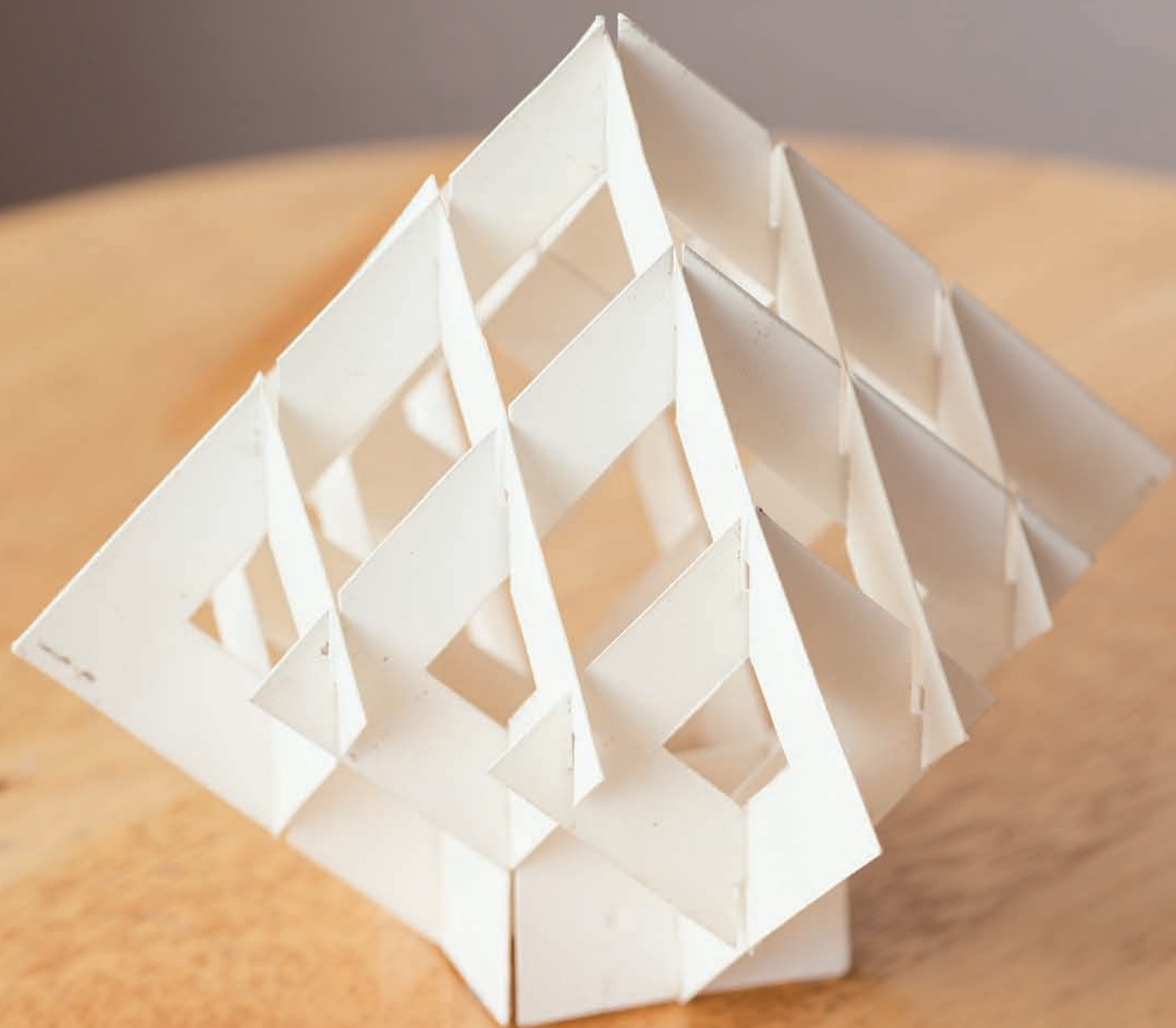
TEMPLATES 136

RESOURCES 140

ARTIST DIRECTORY 142

ACKNOWLEDGMENTS 143

ABOUT THE AUTHOR 144



Introduction

I HAVE TO CONFESS THAT I HAVE AN OBSESSION with paper. I remember a classmate in fifth grade showing me a crumpled sheet of notebook paper that he'd been crushing and unfolding for days. I tried crumpling a sheet and was amazed at how soft it became. As I manipulated it, it was almost transformed into a new material—something like leather.

Fast-forward fifteen years and I was living in Germany on a junior year abroad program in college, taking a class called “Paper.” This time I became engrossed in building with paper. I made a small table out of cardboard and constructed a three-dimensional alphabet using pop-up techniques. During my senior year of college (in Tennessee), I delved into the art of origamic architecture, a technique developed in Japan, and made a series of objects that involved the transformation of flat sheets of paper that were simply cut, twisted, and folded to create three-dimensional sculptural forms.

A few years after college, I had the opportunity to travel to Japan, where I was, once again, inspired by paper. I spent hours in paper stores and department stores looking at the incredible range of Japanese papers, stationery, and packaging designs. I fell in love with the way light filtered through traditional paper shoji screen walls in the traditional inn where I was staying. And when I returned to New York City, where I had moved after college, I discovered Dieu Donné Papermill, a studio dedicated to the art and craft of handmade paper. Soon after, I realized that I'd found a career.

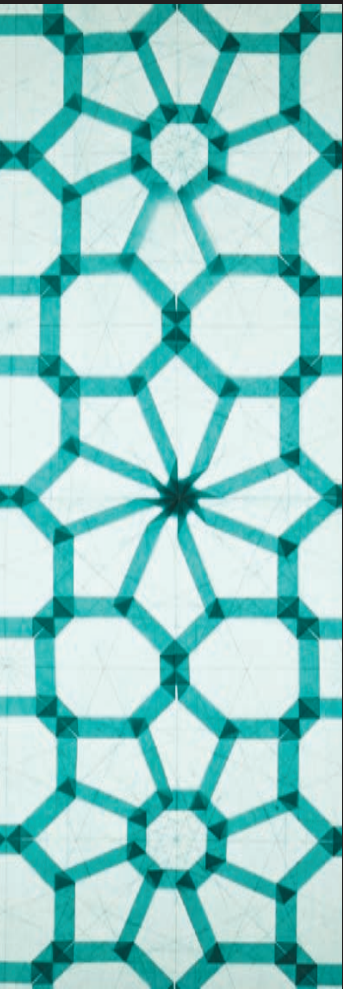
I worked as program director at Dieu Donné for six years. During that time, I learned everything about making paper by hand and had the opportunity to

meet many experts in the field. I joined the national and international hand papermaking associations and wrote two how-to books about hand papermaking and one about making paper lamps.

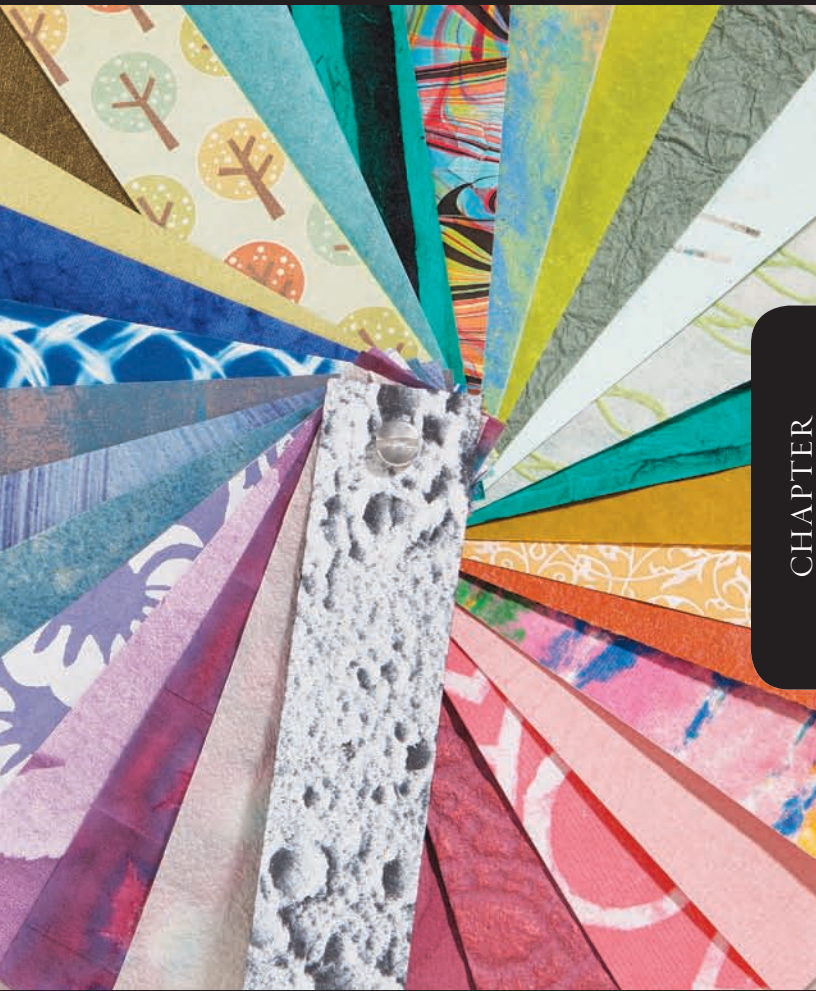
I met my husband during my tenure at Dieu Donné, and we decided to start a family in Portland, Oregon, where we live today. I have a small but well-equipped papermaking studio in my detached garage, where I produce artists' books and installations, write a blog, and train interns. I travel and teach, sharing what I know about paper and telling people about the many amazing artists whose work I've had the opportunity to view and read about.

I still frequently encounter artists from all walks of life who are transforming paper in amazing ways. I've asked many of them to contribute projects and images that fill the pages of this book. Their work showcases the variety of ways that artists are working with paper, including pop-ups, model making, paper cutting, book arts, quilling, origami, folding, and pleating, and there are even a few projects that involve flying paper. My hope is that you will be inspired by the potential of paper as an art form.

The versatility of paper rivals that of any medium: it can be torn into pieces or burned with a match, yet it has the integrity to grace graphic design, fashion, and even architecture. Even though I no longer need a sheet of paper to write this manuscript because technology has usurped much of our need for it, I trust that artists will continue to create with it and collectors will continue to appreciate its beauty, that same beauty I saw as the light filtered through the ancient shoji screen panels in Japan.



GETTING STARTED:
CUT, SCORE, FOLD, AND WEAVE



CHAPTER



Getting Started:

CUT, SCORE, FOLD, AND WEAVE

PAPER IS AN INCREDIBLY VERSATILE MATERIAL. Not only is it useful as a substrate for all kinds of printed material and art media, but it is also used sculpturally in book arts, model making, architecture, fashion, lighting, interior design, and graphic design. The following guide to materials and techniques will familiarize you with the properties and tools that make working with paper simple and enjoyable.



WHAT IS PAPER?

Paper is made from plant fibers such as wood, rags, or grasses, which contain cellulose. The fibers are beaten to a pulp, diluted in water, and poured onto a wire mesh screen surface. As the water drains through the mesh, the pulp solidifies on the

surface and the fibers interlock through a process called hydrogen bonding. The wet sheets are then pressed and dried to form sheets of paper, and the same basic process is used whether paper is made by hand or by machine.

A BIT OF HISTORY

The first papers (aside from papyrus, which is not a true paper, because the fibers are not macerated) were made by hand from plant fibers in Asia about two thousand years ago. Later in Europe and then in America, papers were produced by hand from

cotton and linen rags. Today, commercial papers are made on large machines, where pulp is poured onto a conveyor belt-type screen and then dried, coming off the belt as it is cut into sheets. The advent of the industrial revolution all but eliminated the need for handmade papers, but thankfully, artisans who like to hold on to traditions and artists who like working on handmade paper as a substrate have kept hand papermaking alive. Since the 1970s, artists have been working with handmade paper as a two- and three-dimensional medium in and of itself. There is also a wide range of decorative papers on the market today, many imported from around the world, which are suitable for a variety of artistic techniques.

WHERE TO FIND PAPER

I love discovering new papers, sometimes in odd places, like the Jong le Nara Paper Art Museum that I visited in Seoul, South Korea, where I found hundreds of origami paper designs that I had never seen before. I have a stockpile of papers in my flat files, so I have stash a to choose from. Here is a list of places to start looking for interesting papers for your projects.

- At your fingertips. Wrapping paper, envelopes, office paper, cardstock, tissue paper, and newspaper are just a few of the papers that you might have at home.
- In the recycling bin. Call your local printing company or raid your recycling bin and you are bound to find some interesting paper. Don't forget to think about out-of-date business cards, used file folders, envelopes, and other sorts of office papers as a resource.
- At specialty stores. There is a plethora of decorative papers on the market today, from origami



paper to hand-decorated papers. Check out the selection at art supply stores, stationery stores, and scrapbooking and specialty paper stores. There are also a few paper distributors in the United States who manufacture and import decorative papers from around the world that are distributed to stores nationwide (see Resources, page 140).

- Online. If you live in a small town, it might be hard to find unique papers. There is a wide selection available through distributors and retail stores online. If you are like me and want to touch and see a paper before purchasing it, most paper suppliers sell swatch books, and some will send you a sample of one or two sheets.

PAPER PROPERTIES

Sometimes you'll need a particular paper quality for a particular project: you might want a paper with extra sizing for a watercolor painting, a strong paper that will be folded and unfolded as the pages in a book, a translucent paper for a lampshade, or a lightweight paper for a hot air balloon. The following factors affect how a paper will perform in a given project.

Paper Content

There are numerous types of paper on the market today, many machine made from wood, others handmade from plants. Papers range from 100 percent cotton rag watercolor papers, which are acid free, to newspapers made from wood pulp, which turn yellow after a few weeks. Many suppliers offer information about paper content, and you'll want to investigate this, especially if you are concerned about how long your paper will last.

Paper Grain

Paper has a grain, like wood does. Grain direction is particularly important when the paper is being folded (such as in an accordion fold or the pages of a book). When manufactured commercially, paper fibers align in the direction of flow on the machine. When you buy sheets of paper, they have been cut down from larger sheets or rolls. In general, the longer dimension

TESTING A PAPER'S GRAIN DIRECTION

There are several tricks for testing a paper's grain direction, and one of the simplest is to bend the sheet in both directions (this test works best on thicker papers). One direction will be considerably more resistant to bending than the other. The direction that offers less resistance indicates the paper's grain direction.

indicates the grain direction (for example, the grain on a 22 × 40 inch [56 × 102 cm] sheet runs in the 40 inch [102 cm] direction).

Texture/Surface

Paper produced on a machine has a subtle *woven* texture, created when the paper is formed on wire mesh cylinders that carry the wet paper fiber and leave a pattern on the finished sheet. Other textured finishes, such as embossed patterns, are created by using rollers in

the later stages on the papermaking machine. Traditional handmade paper formed on a mold and deckle have *laid lines*, which are pressed into the sheet when it is made on a mold constructed of rows of metal wires or bamboo. Laid lines are very close together and run perpendicular to the *chain lines*, which are made up of stitched wires that affix the laid lines to the mold. And because handmade paper is made one sheet at a time in a mold, it has *deckled edges*, those rough and feathery borders.



Additives and Coatings

Sizing is a chemical that is often added to paper to make it somewhat waterproof and thus prevent bleeding when working on it with wet materials, such as watercolor or ink. Papers are sometimes *coated* with a thin layer of calcium carbonate or china clay to create a surface that is suitable for the printing industry. Some papers are additionally calendared, or polished, to give them a smooth surface. There are hundreds of decorative patterned papers, some hand printed and others printed by machine.

Paper Thickness/Weight

Papers come in a variety of weights and are most commonly referred to as text weight (normal office copier paper) or cover weight (cardstock and heavier). The thickness of a sheet of paper is often measured with calipers and is typically given in thousandths of an inch. The weight of a paper is described using a complex system in pounds in the United States and grams per square meter in Europe.

Opacity

Opacity is the measure of how much light is kept from passing through a sheet of paper. Opacity is important in papers that will be printed on both sides, such as book pages. There are also many translucent papers, which are suitable for lampshades, folding screens, and window decorations. Several projects in this book are enhanced by translucent papers and feature techniques such as cutouts, which create shadows, and pierced holes, which allow light to filter through.

Paper Strength

Paper strength is important for a variety of reasons. If the paper is going to be folded and unfolded, such as in a book, map, or pamphlet,

the tear or fold strength must be adequate. If paper has to be dampened for dyeing or printing, it must have a high wet strength. The strength of a paper does not relate to the paper's thickness: many of the thinnest Japanese papers are

incredibly strong, due to the long fibered pulp used to create the paper and the sheet formation technique, which involves several layers of pulp laminated together to form a sheet.



BASIC TOOLS AND MATERIALS

Here is a guide to special tools and materials for working with paper.

Knives and Mats

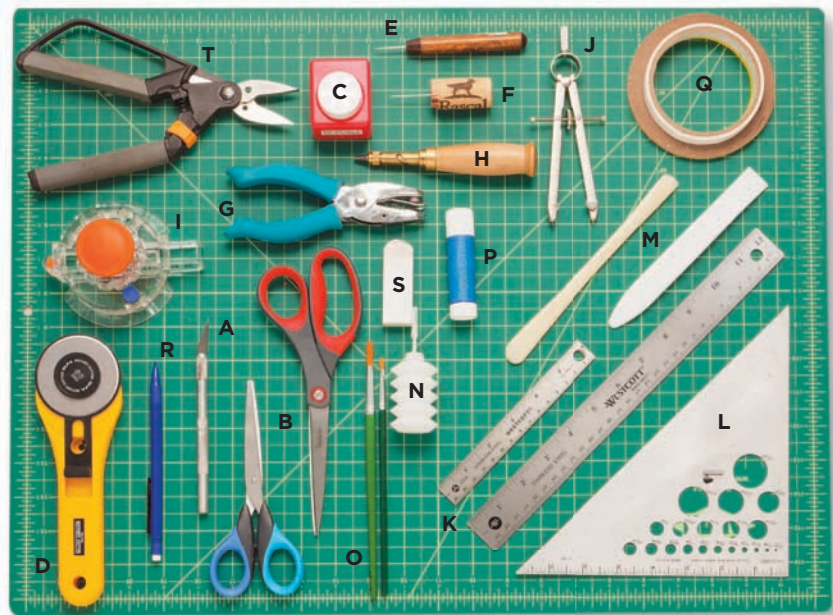
Most of the projects in this book require a craft knife (A). My favorite is the type that takes a #11 blade. Replace the blade often—as with knives in the kitchen, a sharp knife makes cutting easier, especially on thicker papers. A cutting mat protects your work surface and most have grids printed on them, which makes it easy to measure and cut straight lines.

Cutting Tools

I have a small paper cutter in my studio for cutting small sheets to size, as well as an assortment of scissors (B): a standard 8 inch (20 cm) pair, a child-size pair, and tiny scissors (not shown) for making intricate cuts. A heavy-duty pair (T) might be useful for some projects. A rotary tool (D), used to cut fabric, can be used to cut organic lines and shapes.

Punches

An awl or a potter's needle (E) (make your own by poking a needle into a cork [F]) works well for punching tiny holes, and an unthreaded sewing machine can punch a row of holes in a flash. Handheld hole punches (G) are great for punching shapes and holes close to the edge of a sheet of paper, but my favorite is the Japanese hole punch (H), which has interchangeable punches in various sizes and allows for punching holes anywhere on a sheet. Decorative punches (C) come in a variety of patterns and are easy to use (the Shadow Ornament project is made with a decorative punch). When you need to cut perfect circles (such as for the Interchangeable



Ring), use a circle cutter (I). This tool requires a steady hand and frequent blade changes and must be used on a cutting mat.

Triangles and Straightedges

I prefer metal rulers (K) for cutting, because plastic rulers can fray when running a knife along their edge. I have rulers ranging in length from 6 to 36 inches (15 to 91 cm), and I use the size that best fits the project. Many metal rulers have cork on the back, which keeps them from slipping. I like a transparent plastic graph ruler for measuring because it has a grid of lines on it, which makes plotting and drawing parallel lines easy. A metal triangle (L) comes in handy when plotting and cutting angles.

Folding and Scoring Tools

Bone folders (M) are a common book-binding tool used to score paper in preparation for folding as well as for creasing folds. They are typically made from bone (cow or deer), but some are made from wood, plastic, or even Teflon. In a pinch, you can use the back of a knife to score

paper. It is often helpful to place the paper you are scoring on a cutting mat or a few pieces of cardstock to cushion the paper when scoring. Proper scoring is done on the side of the sheet that will be folded outward. For example, you score the outside of a book cover.

Adhesives and Applicators

My favorite adhesive is PVA glue, which is a white, clear-drying, archival glue, and I love using a mini glue applicator (N), which is available from The Lamp Shop (see Resources, page 140). Brushes (O) also work. Glue sticks (P) are useful for temporary gluing and when gluing thin papers, such as tissue paper. Double-sided tape (Q) is thin and works well for laminating sheets of paper together; artist's tape is repositionable and doesn't leave a residue, which makes it perfect for temporary connections.

Drawing Tools

Pencils (R) and erasers (S) are essential for outlining and marking your measurements.

