What Is Art?

The question of what art is has occupied the thoughts of philosophers ever since humankind began to think. This booklet will not give a final answer, but, for our purposes, we will define art as the creation of beautiful objects that stir emotion in the beholder. By this definition, a movie, a stately building, a floral arrangement, a nicely printed letter, or a graceful lamp can be art objects just as much as a painting or drawing by a master. A functional object, such as a table, can be an object of art if its lines and construction are so tastefully and skillfully crafted that it is beautiful as well as useful.

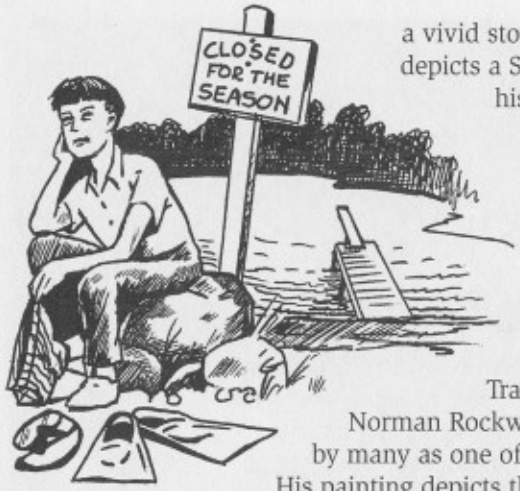
This merit badge pamphlet makes no attempt to cover all of the arts. Emphasis is placed upon drawing, painting, and design. When you have completed the requirements for the Art merit badge, you might want to work toward some of the other merit badges that concern either the fine or the useful arts: Architecture, Basketry, Drafting, Graphic Arts, Landscape Architecture, Model Design and Building, Music and Bugling, Photography, Pottery, Sculpture, Theater, and Wood Carving.

Visual Storytelling

Some people are naturally gifted artists blessed with an ability to draw anything, but for the average person it is important to know that the *process* of creating something can be just as pleasing. How the final product is developed is the most important objective. You see, many creative people do not draw extremely well, but they are gifted in the orchestration of ideas, materials, and presentation.

For requirement 1, you are asked to tell a story with art. It can be a collage, a mobile, or a cartoon strip, or you could paint a scene or an item in a fashion that is comfortable and rewarding for you. Focus on telling a simple, direct story. Let your imagination and knowledge of your subject guide your hand as you make small, quick drawings, called thumbnail sketches, before you start on your final product. As one famous artist stated, "Less is more."

Prehistoric artists were storytellers first, artists second. Their paintings and carvings on the walls of caves and cliffs are the only clues we have as to how they saw the world. Even today, much of our art is aimed at telling a story. A cartoon strip is one example of art telling a story. Often, a single picture can tell



a vivid story. One illustration shown here depicts a Scout sitting beside a lake with his mask, fins, and swim trunks, but there is a "Closed for the Season" sign just behind him. A clear story of frustration and disappointment is told in just this one scene.

The picture at the beginning of this chapter, called "From Concord to Tranquility," was created by Norman Rockwell in 1973. He is regarded by many as one of America's finest artists. His painting depicts the American Revolution at Concord, Massachusetts, and the modern-day "revolution" represented with space-age technology by astronaut Neil Armstrong in his space suit.

Now, you might be thinking, "But I can't draw like that! All I've ever done is some stuff in school and at home." No one expects you to produce a picture as artistically flawless as this one. After all, in addition to having great talent, Rockwell had long years of practice. Even if you *do* have a lot of natural ability in art, it would be many years before you could match the perfection of this painting.

But you *can* tell stories with pictures. In doing this, the most important thing is not how well you draw but how well you *see*. An artist, whether telling a story, painting a landscape, or creating a geometrical pattern, is trying to communicate with the viewer. The artist wants to tell the viewer something about life. To do that, he or she must first have an *idea*—something to be communicated.

In art that tells a story, the *idea* is paramount. If you have nothing to communicate, you will have no story to tell. Look around you with your eyes *and your mind* wide open. Chances are there are plenty of "stories" just waiting to be told in pictures.

Do you have a dog who misses you when you're away from home? Then show her anxiously waiting for you, looking out your bedroom window with one of your caps by her front paws and her leash or favorite toy in her mouth. To complete the idea, show your school bus in the street outside the window. Does your mom groan and mumble and grit her teeth when she's paying the monthly bills? Then try sketching her at work with the checkbook while your dad peeks around the corner to see how bad the "storm" will be this time.

These are, of course, very simple stories, but nearly all great art is simple in that it communicates only one idea. Don't limit yourself by using only the ideas given here. Keep your eyes and mind ready to receive the impressions that will give you the great idea for *your* picture story.

If you choose to do a cartoon strip for requirement 1, be sure the pictures tell the story. Don't just illustrate a joke. It is not a picture story when the whole story is told in the "balloons" over the characters' heads; words might be necessary in a cartoon strip, but they should only help explain the action or emotion that the drawings show.

You can use any medium you want: pencil, pen and ink, paint, or even a tapestry design.

Selling With Art

Advertising Design

Companies and individuals worldwide use advertising design—special art and design elements—to sell or promote their products, services, and ideas. Most television, magazine, newspaper, and billboard advertisements are designed to show the best there is to offer. This is a very specialized and competitive area of art and design, in which the *message* is the important thing. Vast areas of human knowledge are drawn upon to develop successful ads that create a desire for the product or that "sell" an idea. Psychology—the study of how people think—is used in developing ads to help the advertisers know how best to appeal to their audiences.

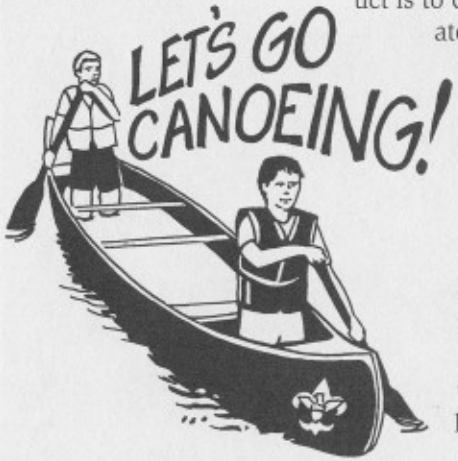
The five senses—sight, hearing, smell, taste, and touch—are chief targets in ad development and production. Advertisers try to appeal to a combination of these senses, depending on the product, to evoke a certain emotion or feeling in their targeted consumers. The advertisers' objective is that this emotion or feeling will compel the consumer to buy the promoted product or service, or "buy into" the idea they are selling.

Although you might not have thought of it that way, you probably have already done some advertising design, or commercial art, in school or Scouting. Some examples would be making a poster in art class or creating a display card for a Scouting event.

If you had something to sell, wouldn't you want as many potential buyers as possible to see it and like it? Of course! That would greatly increase your chances for a successful sale. For example, let's say that your troop is planning to sell popcorn as a fund-raiser—simple, good old popcorn. People can go to any grocery store and buy it. Even video stores sell popcorn. So why should anyone buy popcorn from you? To persuade the public to try *your* popcorn, you will need to create an effective ad.

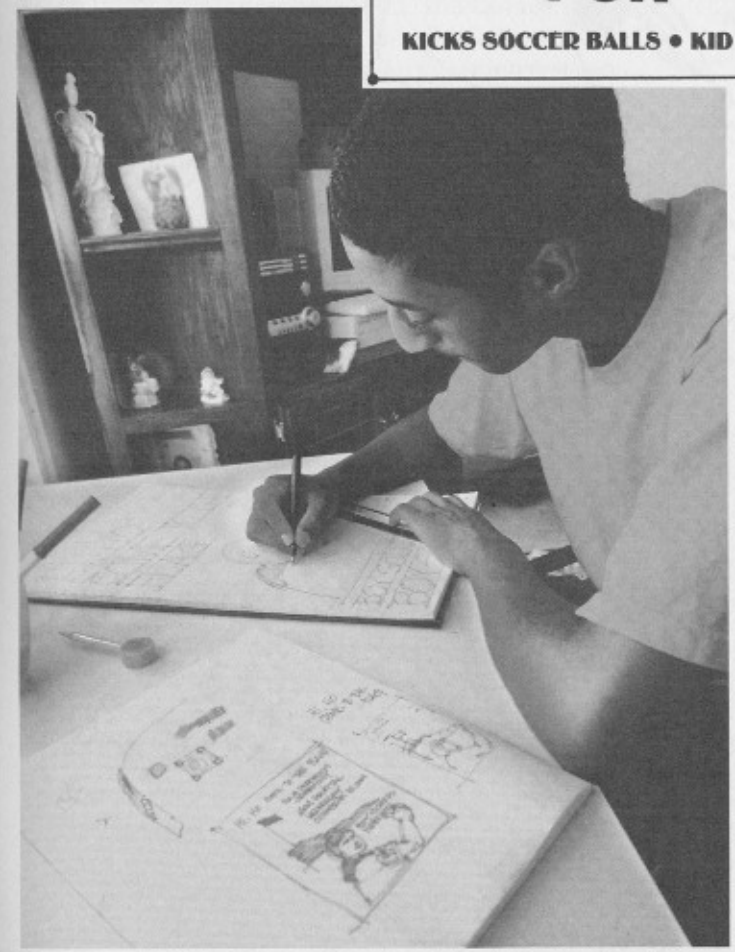
How can you persuade people to think about this sale? With pictures and words? Yes, that's advertising. The best way to start your advertising campaign is to first get down to basics: What is your product and why should people buy it? Think about all of the positive aspects of popcorn and list them on paper. If any design ideas come to mind, do some thumbnail sketches. How does popcorn appeal to the five senses? Use your pictures and words to illustrate the best that popcorn can be.

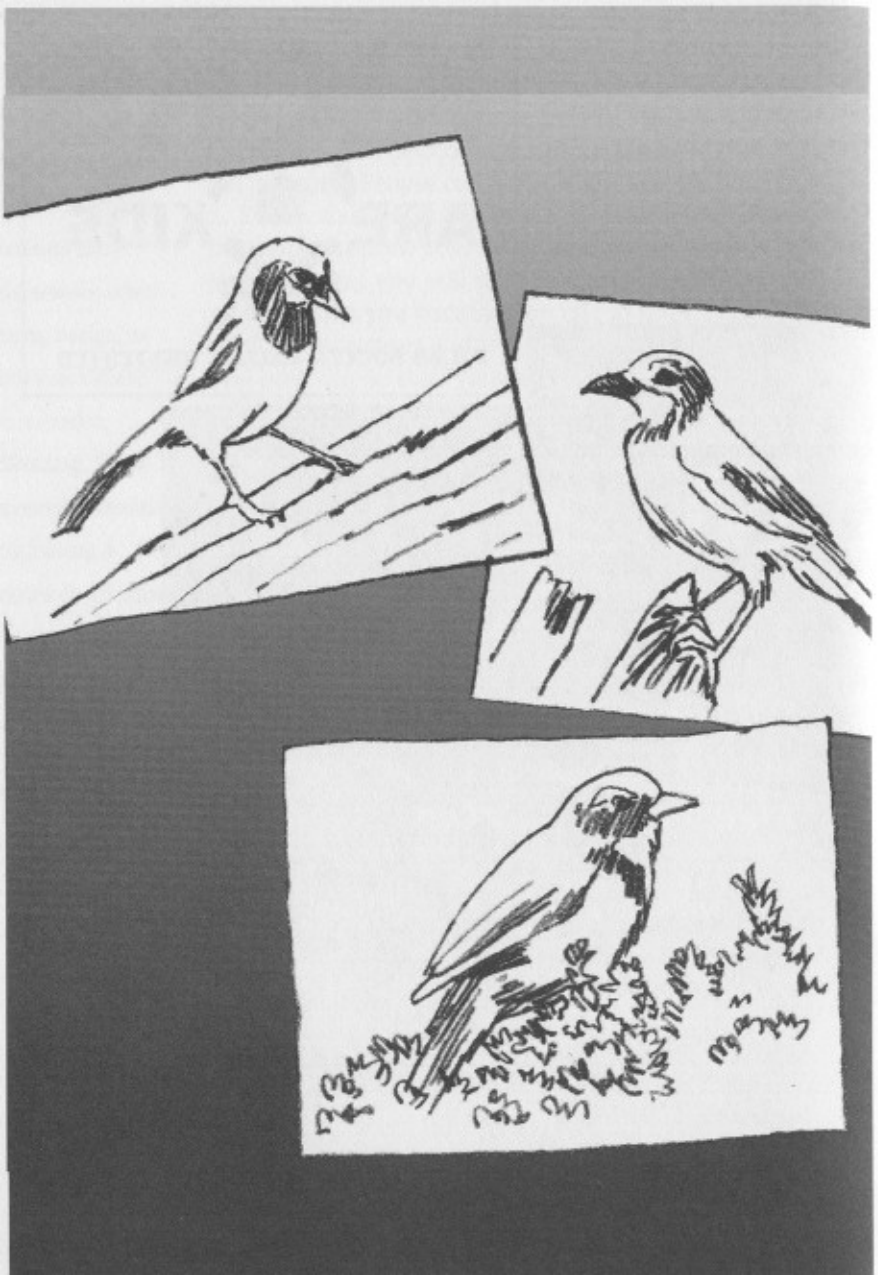
Be honest and informative in your advertising design. These are key values in good advertising. Whenever you want to promote an idea or plan an event, use the principles that we have just discussed. You can then enjoy the feeling a successful selling campaign can bring.



Another way to promote an idea or product is to create an ad layout. A layout is created by putting together the elements of art and text in an eye-catching way. If you decide to create an ad layout for this requirement, study some magazine and newspaper ads before starting to draw. Don't simply copy or rearrange an ad for soap or automobiles that you have found. Select something *you* know about—your school play, your Scouting show, your community clothing drive. Dream up a catchy punch line for the ad.

Begin making your layout by drawing small sketches of your idea for the ad until you have one that best promotes the idea. Go on from there to your finished ad layout in any medium.





Art for the Fun of It

Requirement 3 offers a range of possibilities as wide as all outdoors and just as much fun. You can use any type of art medium you wish, from pencil to oil paints, and you can pick just about any subject that interests you. It could be your cat sleeping in a patch of sunlight, an interesting grouping of objects on a table, or your favorite spot in a nearby park. Use your imagination to make your work of art as good as it can be!

Suppose you have chosen a scenic area outdoors as your subject. Now, how do you transform what you see into a work of art? First, you wouldn't make the completed sketch or painting out in the wilderness. Instead, you would go into the field with an artist's sketchbook or a handful of any kind of paper and make studies—lots of them. Then, when you return home, you would have the raw material for your finished picture. Armed with your studies and the memories of flashes of color, the splash of sunlight on the trees, and the feathery clouds overhead, you could then draw or paint your finished picture.

Follow these steps to begin your project:

- Select an object or area that you really like.
- Take a sketchbook or scrap paper, pencils, crayons, and an eraser to your subject.
- Observe everything you can and sketch a number of studies. Refer to your subject frequently. You will see more and more detail. Cup your hands in front of your face to form a camera-like view of your subject. Hold one eye closed and move your "viewfinder" around the area of your subject until you find an image that

An artist will often make drawings that help in the development of an image. These drawings are called **studies,** which means what it implies. The artist is studying all the details of the subject to help build a strong "inner" vision, or idea. This inner vision fuels the power to produce the final work.

looks right to you. Draw a box or rectangle on your paper, then fill it just as you see it through your viewfinder. Let this be your technique for finding good composition, or arrangement of elements.

- You can use your pencil to scale key elements of your subject so that you can maintain the proper proportions within your studies. Again with one eye closed, hold your pencil at arm's length and measure each key element of your subject between the tip of the pencil and the tip of your thumb. Be sure to keep your thumb and your eye the same distance apart each time you refer to this proportion gauge. These two techniques will help you develop composition.

- Now, choose your best study and begin to strengthen it by overdrawing with heavier pressure on your pencil. Begin to shade and define areas with different pencil tones. This is another important aspect of "studying" your subject. It might also help to draw a larger box or rectangle and repeat the process a step larger. Use your crayons to "note" a few bits of color that you might want to recapture in your final picture.

You might go home with a dozen studies, none of them complete but each one holding some key to the scene as you saw it.

When you begin working on your picture, you will take bits and pieces of these studies and combine them into one picture. Then you can detail-draw or colorfully paint your subject. Be sure to refer to your studies as you proceed. This will help you to produce your work of art with confidence. The result will not be a photographic copy of the landscape; rather it will be your own vision—your interpretation—of that scene. In other words, it will be art—just for the fun of it!

Subjects That Won't Stay Put

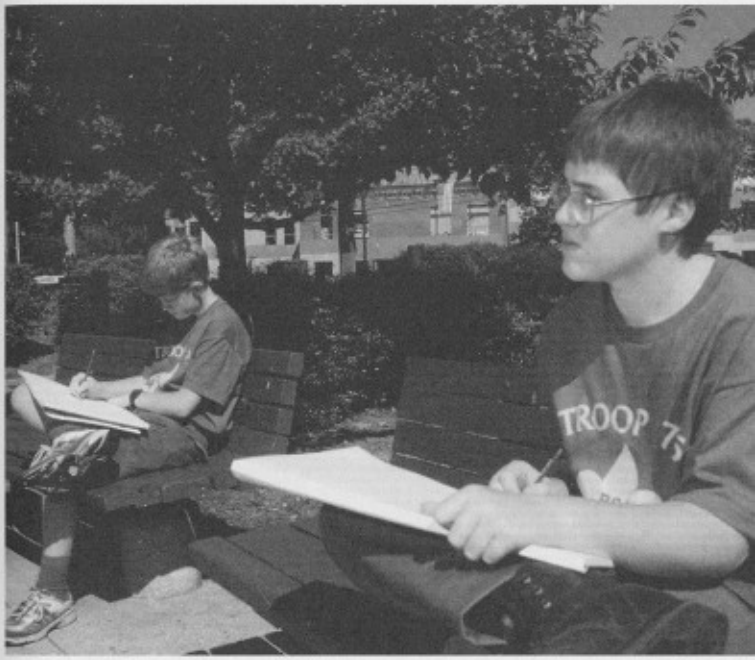
In drawing animals, birds, and other subjects that won't "stay put," some artists attach a large sheet of paper onto a board; then, as the animal moves into different positions, the artist can start new studies on the same sheet. Often the animal will return to its original position, and the artist can go back to that study to make a few more strokes with the pencil. Eventually, the artist will have a few nearly completed drawings and a number of partly finished ones.

If you have chosen a subject that won't stay put, your final picture might show the animal in a position that you didn't even sketch. That doesn't mean your picture won't be good, because you will know how the animal looked in the many different positions that you did sketch. In short, you will know more about the animal after several studies than you would have known if you had sketched only one study and then tried to complete your picture from that.

Other Project Ideas

In the city there are many exciting places you might go to make sketches or studies: a harbor, a bridge over a river, a market, a parking lot, an aquarium or zoo, and an athletic event, to name just a few. Or you can look around your own neighborhood—at a playground, a grocery store, a bicycle shop, a pet store, a shopping mall.

A good idea is to get a small sketchbook, or make one of scrap paper, and carry it with you when you go to various events and places. When you get a chance, jot down quick impressions with your pen or pencil. You can find many interesting subjects to draw while riding in or waiting for a bus.



Draw people's shapes and faces as they stand or sit or talk or read, and note how each one is different. Do they slump or sit up straight? Is one very tall and lanky, while another is short and stocky? Is someone reading a newspaper and another looking out the bus window? Are two people talking to each other? Is someone dozing? Try to sketch them quickly. Other interesting places for sketching would be a ball game, an amusement park, a picnic, and at school.

Applied Design

Designs intended for decoration should be simple, balanced, and appropriate. An elaborate painting of a city street would look awful on a chair in your troop meeting room. On the other hand, a stylized dinosaur on a patrol flag looks just right—at least if the patrol's name has a prehistoric theme!

Why is the fish shown here a good design? Because it is simple, beautifully balanced, and easy to understand. Other good designs, including the ones on the egg shapes shown here, do not represent any real object like a fish; they are merely pleasing groupings of lines, geometric shapes, and angles. Just the same, your design for requirement 4 might be inspired by nature or it might come from your imagination.

Just as the fish design is a simplified, streamlined shape based on a fish's natural form, so are there lots of other objects in nature that you can look for and then fashion your own creations from them. For example, look around outdoors and collect various nature objects: a pebble, a piece of tree bark, sticks, an interesting leaf, a nut hull, and similar objects. Then study each one care-

fully; closely observe the shapes and textures, the curves or straight lines, the hollows. Then experiment with a pencil, making simplified shapes based on these objects. Keep making sketches of each object until you find a design you like for each.

Most things in nature are balanced. A leaf, a flower, or a paw print seems somehow complete. Nothing more is needed, and nothing could be taken away without making the leaf, flower, or paw print seem unfinished.

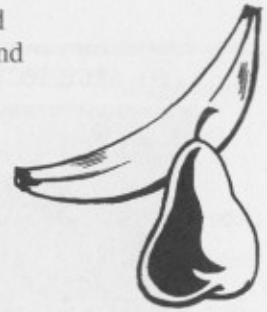
Whether you use an object from nature or an idea in your mind as the starting point for your design, try to put it in balance. Keep it simple. You don't have to show every vein of the leaf or every pistil of the flower for good design. Simplicity is a goal of every artist, especially of the designer.

On these pages there are a number of good designs, any one of which could be put on your Scouting equipment or on furniture in your troop meeting room. But the requirement calls for you to make an *original* design. This means that you must exercise your own imagination and create something new.

Start with a piece of paper and a pencil. If you don't have anything in mind, doodle a while. Often, doodling will stir an idea for a good design.

Or you might begin by playing around with variations of some present design. Take the universal Scout sign, for example. Doodling with that emblem in mind might give you an idea for an original design, one that has a hint of Scouting and yet is entirely new.

The shape of an elm tree, the head of a bear, or the outline of your Scout knife might suggest some good design. Play with it for a while, adding a line here and subtracting one there until it seems just right.



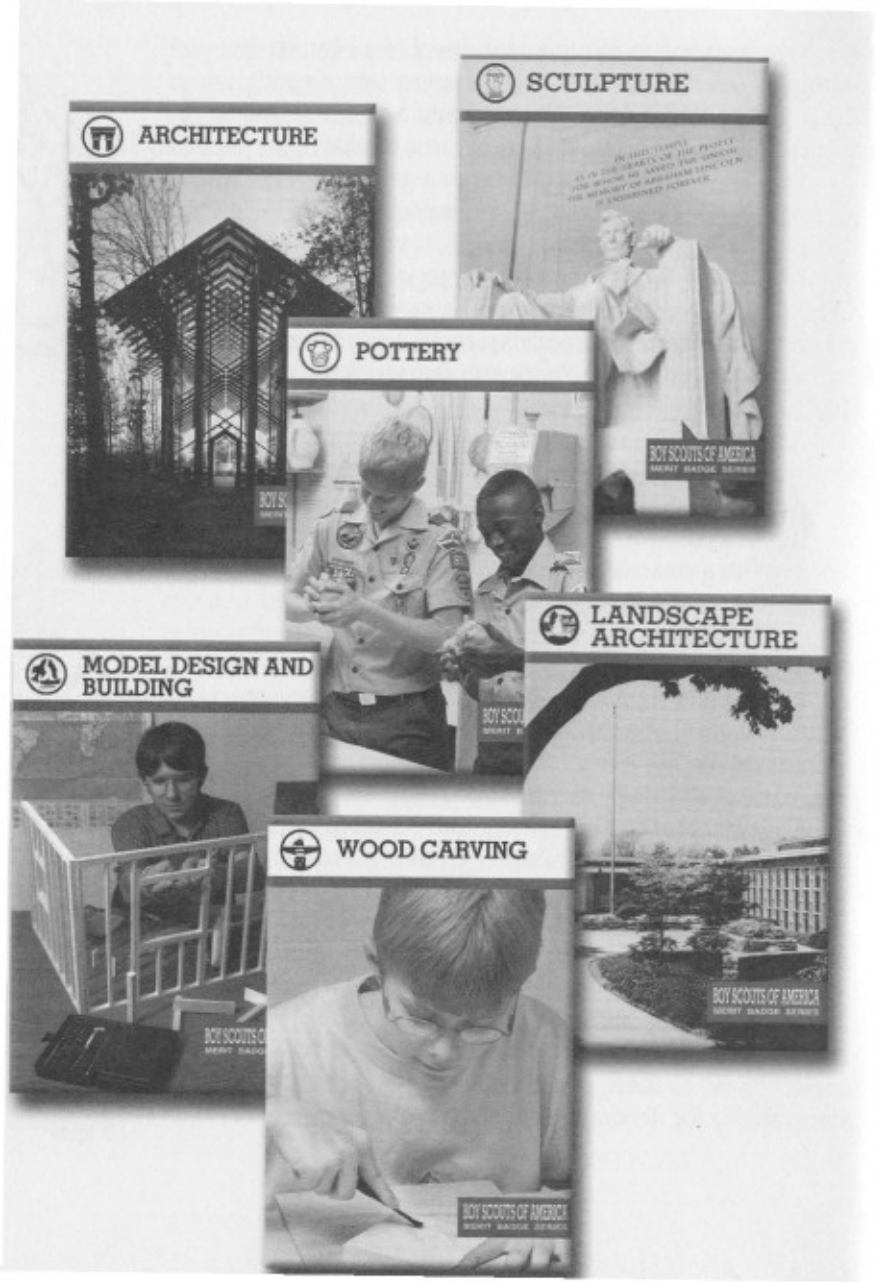
Your doodling might lead you to a geometric or an impressionistic pattern like the ones shown on these pages. Either would be fine. If it seems pleasing to your eye, then it should be a good design. Generally, this type of design will be more appropriate for ceramics, knickknacks, and fabrics than for Scouting equipment. For Scout items, a design that suggests nature and the outdoors will seem "right."

After you have made your original design, you must apply it to an article of your choice. How you go about this depends mainly on what the article is.

If it is a piece of furniture, you could simply trace the design where you want it and then paint. If you wanted to put your design on a patrol flag, you could trace it onto a piece of cloth of the proper color, cut it out, and sew it onto the flag.

Applying designs to leatherwork, such as your ax or knife sheath, or painting designs on ceramics calls for other skills. For advice on these skills, see the *Leatherwork* or *Pottery* merit badge pamphlet. The skills needed for working leather and painting on ceramic objects are not difficult, but they do require knowledge outside the scope of this pamphlet.

The most important thing for requirement 4 is not your ability to transfer your design to an article of equipment or furniture, but the *design itself*. Does it show original thinking? Is it simple and balanced? Does it look "right" on the piece you have chosen for it? If you answer "yes" to these questions, then you have shown some ability for decorative design.



Functional Design

Requirement 4 asked you to create an original design and apply it to something as a decoration. For requirement 5, your design must be useful; therefore, it will be three-dimensional—your creation will have depth as well as height and breadth.

Whatever you choose to design, remember that it must be practical as well as beautiful. Imagine a chair with clean flowing lines and a colorful appearance that looks inviting. But if the seat were 3 feet off the floor, it wouldn't be much good, would it? Or, think of a beautiful car—sleek, powerful-looking, and low—so low, in fact, that no one could get into it.

Start thinking about your design by considering how the article will be used. Suppose you have decided to design a new Scout backpack. How many pockets should it have? Should it have hook and loop fasteners or metal tie-downs? Can it serve a never-before-thought-of function? How about wheels that attach so it can be pulled on smooth surfaces? Maybe it could have sleeves, a hood, and a cape that pull out for wearing in case of rain. Think of new uses for old, familiar objects; this is what designers do every day.

So, begin your design by sketching and writing down your ideas. Show your product from different angles and express its uses with thumbnail sketches.

Make your final drawing clear, and be ready to tell your counselor why you made any changes or additions to your product.

If you want advice on design methods before you start, look up some of the books listed in the back of this pamphlet. Also, for specific design projects, consult the following merit badge pamphlets: *Landscape Architecture, Architecture, Pottery, Model Design and Building, Sculpture,* and *Wood Carving.*

Art Media, Supplies, and Techniques

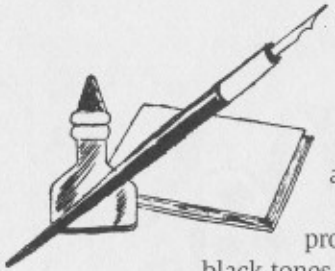
The artist has a wide variety of media—the material or technical means of artistic expression—to use in making a drawing or painting. You probably have used most of the seven kinds mentioned in requirement 6 either in school or at home. It would be a good idea now to get acquainted with media you have *not* used before.

Each medium has qualities that make it better for certain applications than others. Try to learn what these qualities are so that you can choose the right medium for each of your drawings and paintings.

There is not enough room in this pamphlet to go into detail about each medium. If you want to learn more, look for some of the books listed in the back of this pamphlet, or visit your local library. However, don't depend only upon your reading to make an artist out of you. Practice and experiment, and then practice some more; that's the secret behind learning how to make good drawings and paintings.

Pen and Ink

An artist with a lot of experience at pen-and-ink drawing might put pen to paper with nothing but an idea for guidance. With straight lines and swirls, spirals and loops, the experienced artist might quickly produce a beautiful picture, delicately shaded and outlined. But if you haven't worked much with pen and ink, you might want to sketch the outlines of your figure with a lightly held, hard-lead pencil before you begin with pen and ink.



Professional artists use special pens that produce fine or heavy lines and soft or rich black tones as well as other colors. You are not required to have one of these pens, and if you don't, a fine round-nib lettering pen is recommended. If you don't have one of these either, use any pen you can find.

Use a smooth-surface, heavy bond paper. Keep only about a half-inch of ink in your ink bottle; this will help you avoid spilling or blotting ink on your drawing, because you won't be able to get much ink on your pen.

If your subject is an animate living thing, such as a person or an animal, you can suggest its contours with shading. Use a fine-tip pen to add shading by making light, sketchy lines. Heavier shadows can be created with a wide-tip pen. Without shading, pen-and-ink drawings can look flat and two-dimensional.

An interesting project to try with pen and ink is to go outside and sketch trees from observation. Look closely at shapes, directions of branches, the sharp points or rounded shapes of the leaves, the pattern of the bark on the tree trunks, the roots if they show. Pen and ink is an excellent medium to use for the scratchy textures of bark, the jagged, smooth lines of branches, or the sharp detail of clumps of leaves and twisted roots.

Watercolors

It's possible that you have used watercolors ever since you were a small boy, so you probably know something about working with them. But if not, here are a few tips:

- Don't use very thin paper; it will wrinkle as it dries. To avoid wrinkles, secure the paper to a solid surface using glue.
- Sketch your painting first, *lightly* with a pencil.
- Work from light areas to dark areas. If you make an area too dark, it will be hard to lighten it.
- Remember that tints become lighter as they dry; allow for this by making your painting a little darker than you want.

Try many ways to create effects with watercolors. For example, dampen the page first with a wet sponge or piece of cloth, and then let the colors flow. You have to guide them, and also blot the paper in places where it gets too wet, but many exciting color and shape effects can result. Also, try dabbing on paints with a small wad of paper towel, or dripping small droplets of paint onto a wet area of paper. Some of these unusual effects are exciting ways to express the sky and the sea.

Try painting an imaginary seascape or a storm in a forest, using these various effects to make the sea and the waves toss or the sky and clouds roll in many colors.

Pencil

To artists who enjoy drawing, the pencil provides some of the most satisfying results. It is a basic and inexpensive tool, yet it can define the most complicated subjects. Pencil artists use very soft (6B) to very hard (6H) leads, which are available at art supply stores. However, the basic No. 2 pencil we all use for school and home is an adequate tool to use in creating good drawings.

If you try different ways of holding a pencil, you will find that pressing the side of the lead on the paper as you move it will create smooth shading. Use a sharp tip

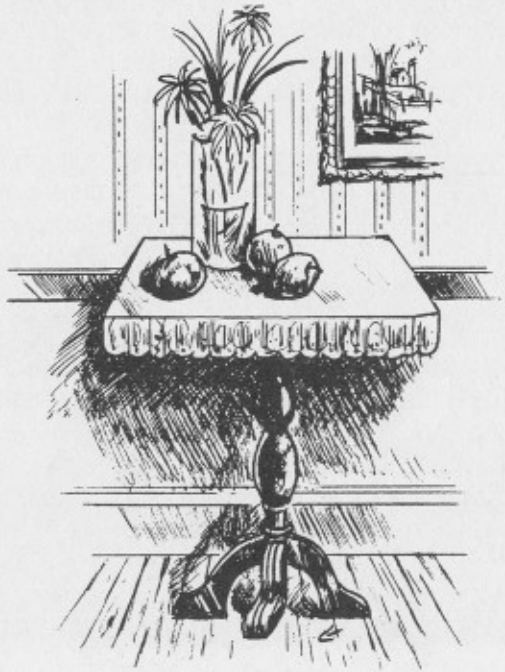
to create thin lines; press hard with a duller tip for bold, broad, heavy tones. Bounce the pencil freely, or with control, to develop texture.

Most forms in nature are suited to being drawn in pencil. Nature offers a diverse and endless supply of free-form shapes for you to draw. Use your pencil to duplicate the rich array of textures found in nature.

Drawing on hard, shiny surfaces does not work well with a pencil, so try to use paper that has a dull, velvety surface. Clean up smears and unwanted lines with a kneaded, or gum, eraser.

Don't try to make a very large drawing. Paint can be laid on in broad strokes, but with a pencil and a lot of area to cover, your hand will be pretty tired by the time you finish.

An interesting project is to collect nature forms, such as pinecones, seashells, twigs and sticks, pebbles, and thistles, and then use pencils to make sketches. Try to create many kinds of textures, lines, and tones, making your pencils express the softness, hardness, and form of the various natural objects.

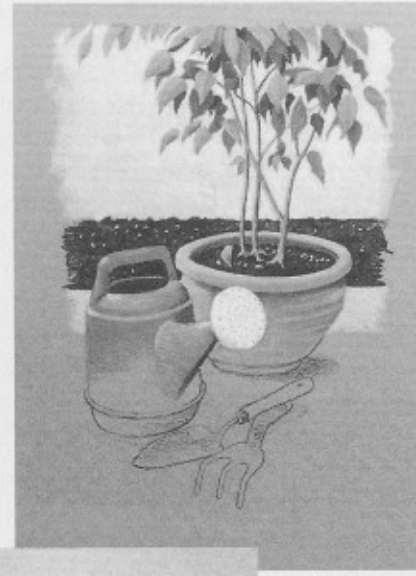


Pastels

Pastels are special crayons that give soft, delicate colors like watercolors. Usually, they are in stick form, although there are pastel pencils, too.

Pastel tends to smudge and smear easily, so some artists spray their completed picture with a special fixative to protect it. Two coats are recommended for permanence. However, using a fixative will affect the color of your pastel. Many artists choose to refrain from using a fixative for this very reason.

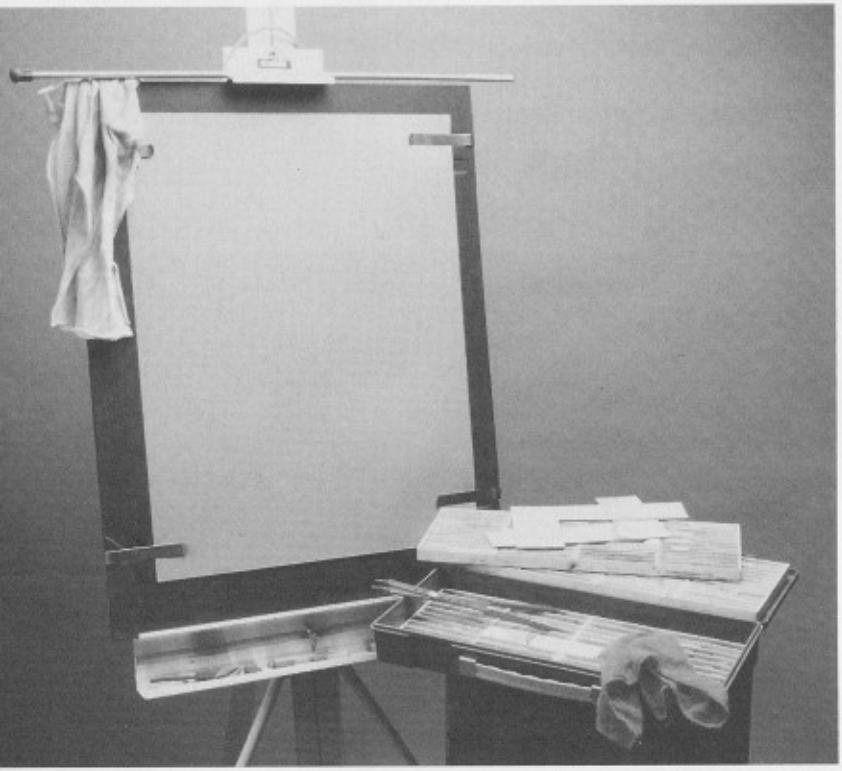
To start a pastel picture, first make a pencil drawing of your subject. Place your pencil drawing over a pad of five or six sheets of



paper, then put the sheet of paper on which you will do your pastel on the top of the stack. You must be able to see your drawing through the paper on which you are doing the pastel. Now, "paint" in your picture with your pastel colors.

Pastel colors darken a little after they are "fixed," so apply the colors a little lighter than you want them to be. If you want your colors to blend into one another—in shadowed areas, for example—rub the area lightly with a fingertip. There are gray pastels, with shades ranging from white to black, for shadowing and for dark areas.

Before you "fix" your picture, clean the white areas with a kneaded eraser. Then blow off the dirt and loose color and spray with the fixative. Let it dry for a few seconds and spray it again.



Oil Painting

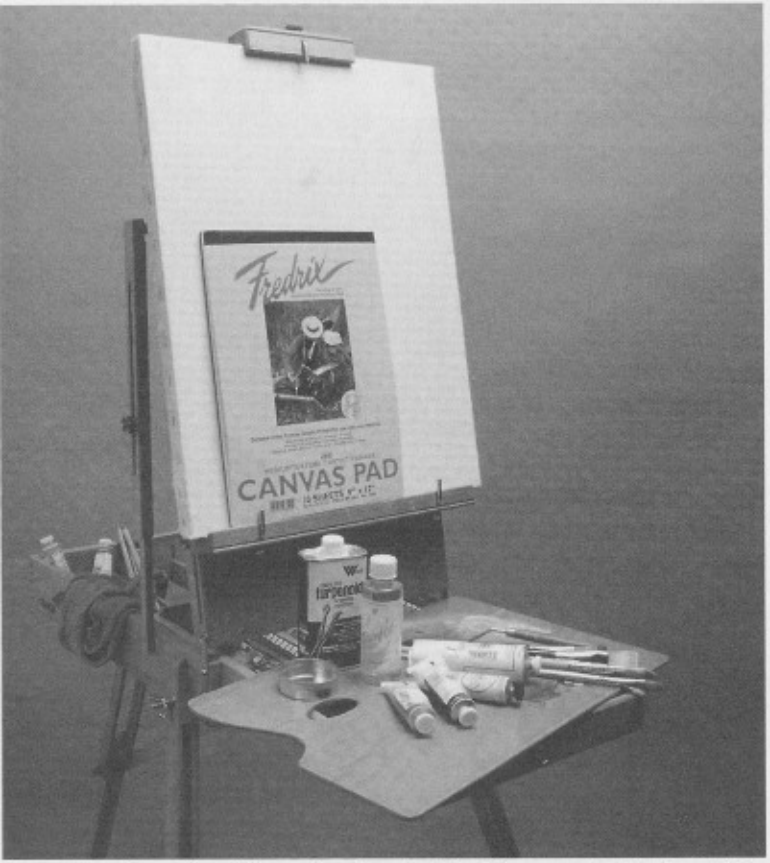
Oils are probably the most difficult to use of the seven media in requirement 6. This is not because the technique of painting is hard, but because more equipment is needed and knowledge of how to handle oils is essential.

You can paint in oils on artist's canvas (there are several kinds), canvas paper, or primed Masonite (hardboard made from wood fiber). If you're trying oils for the first time, get small tubes of the following colors: alizarin crimson; cadmium red, light; cadmium yellow, light; yellow ocher, burnt sienna, and raw umber (browns); viridian green; ultramarine blue; and titanium white. Many other colors are available, but these will be enough for a start. In addition, you will need gum turpentine and lin-

seed oil, a couple of cups for oils and paints, a palette (an aluminum pie pan works well), rags, and brushes.

Of course, brushes are very important. Start with a short, flat bristle brush and a round sable brush. Artists regularly use several others, but these will do for a start.

The art of preparing your canvas properly and mixing your colors can be learned only by practice, but you might save yourself some time and trouble before plunging in by reading one of the books on painting listed in the back of this pamphlet.



Be sure you have the right tools and materials before you begin oil painting.

Tempera

Tempera is poster paint, the kind you probably have used many times in school. Like watercolors, tempera paints are soluble in water, but the paint is not as transparent as watercolor. Also, tempera paints give brighter, stronger colors and do not dry quite as fast as watercolor.

To use tempera, you need brushes of various sizes; the paints, which can be liquid, paste, or powder; a couple of jars to hold water; and a palette. Old saucers or an aluminum pie pan will serve nicely as a palette for mixing colors.

Start your painting by sketching your subject lightly in pencil. When you begin painting, apply large areas of color first. Save the details and smaller areas for last.

Use flat bristle brushes for large washes of color and round or flat sable brushes for outlining and filling in the important details.

Tempera paint can be used thin, with more water in it, or thick and heavy, with very little water. To get rich effects, use it both thin and thick, with both large and medium brushes. See how many colors you can create so that your painting will have rich, unusual tones. For example, if there is sky in your painting, do more than just mix a blue color—try many brush strokes of many shades of blue, some green, some gray, purples, browns, even dashes of red. Your sky will appear much more dramatic.

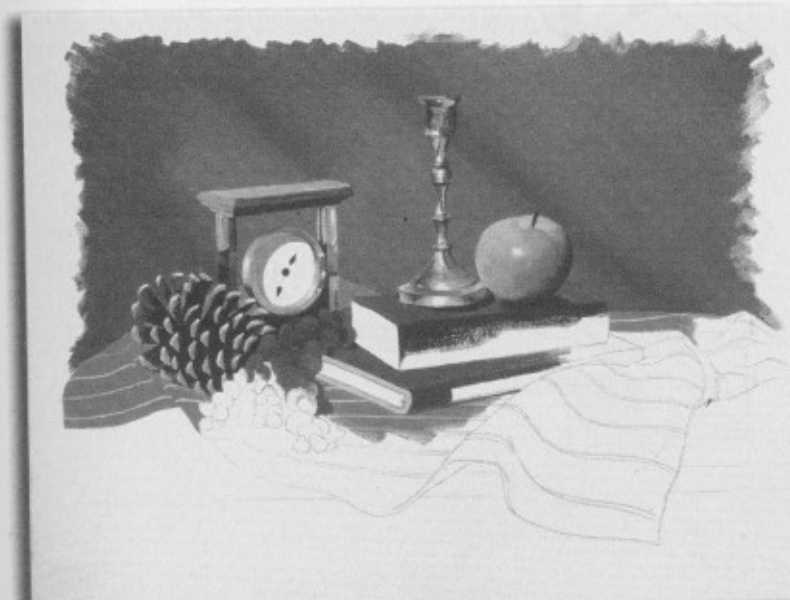
As with other media, a lot of practice is necessary before you will be able to achieve all the tones you want. If you have not used tempera very much before, experiment with it a few times before you begin the painting for this requirement.

Acrylics

Another popular medium is acrylics, a synthetic material that dries hard in brilliant colors and is unaffected by extremes in the weather.

Many artists who previously painted with oils find the qualities in acrylics similar yet more convenient and more Earth friendly. Acrylic paints require only water for cleanup, whereas turpentine or paint thinner is required for oils. These artists have chosen to remove toxic chemicals from their studios by using acrylics.

Since acrylic paints go on easily, they can be used on almost any surface—cardboard, paper, fabric, and wood. Different colors can be painted over one another in a short time because acrylics dry almost immediately, forming a waterproof surface. It's also easy to mix colors.

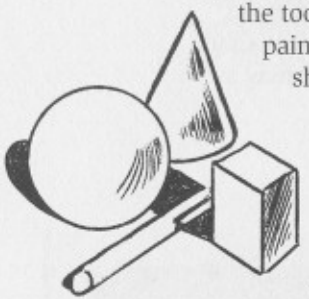


Try to create different textures when working with acrylics, from thick and rough to almost transparent. Acrylics can be thinned, and heavy coatings of transparent color can be applied to resemble stained glass.

But remember, since acrylics dry quickly, you must be careful to avoid mistakes. Your drawing plan should be well-established on the surface before you apply the paint.

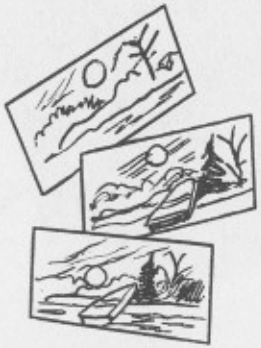
Shortcuts

Art is a personal matter, just between you and your pencil, pen, or brush. Nobody can tell you exactly how the tools should be used to create your drawing or painting. But experienced artists have found a few shortcuts that could save you a lot of time in the learning phase. On the next few pages are a few tips for young artists.



Geometrical Figures

Almost any sketch can be reduced to geometrical figures like these. So try starting a sketch with balls, cones, cubes, and cylinders, then fill them out the way you want.



Studies

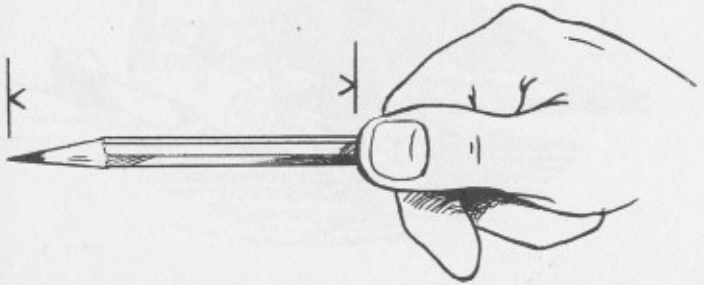
Most artists like to make very small sketches, or studies, of their subject until they find one that seems good. These small sketches are useful in acquainting you with your subject from several angles.

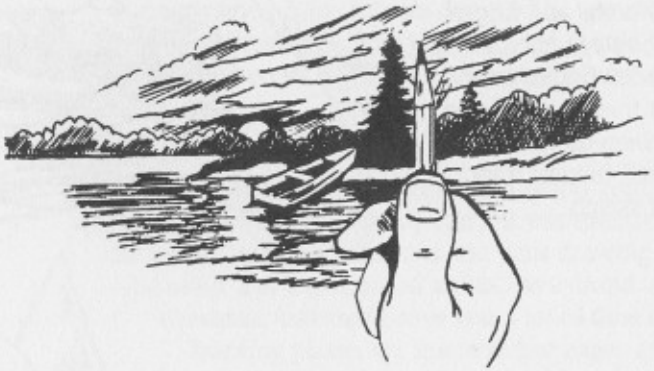
Composition

Hold both hands in front of your face, cupping them to form an open rectangle with your thumbs and fingers. Close one eye, then move your "viewfinder" around until it frames a pleasing view; keep the view "framed" in your mind as you sketch.

Proportion

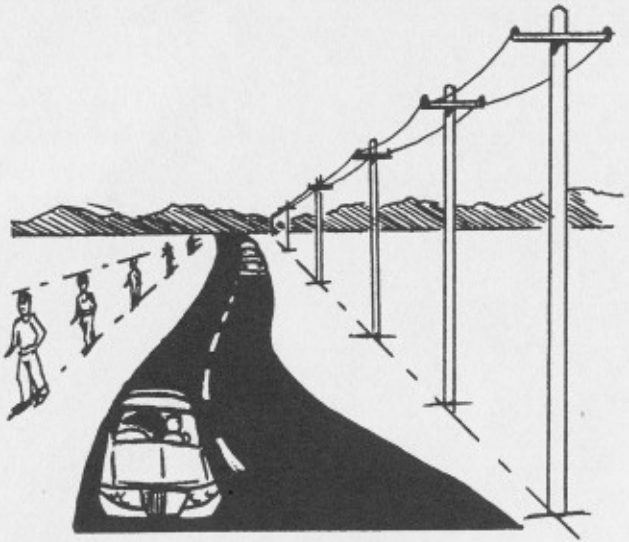
An easy way to maintain accurate proportions for all the elements in your picture is to use your pencil as a gauge. Hold the pencil at arm's length and align it with an element in your subject. With one eye closed, measure the element between the tip of the pencil and your thumb, then use that measurement in your sketch.





Perspective

To give your work depth, make the object in the foreground bigger than those in the background. A road recedes to a point on the horizon and buildings appear smaller at a distance. Of course, there might be times when you will want to distort perspective on purpose for a special effect.



Reproducing Art

There are three general ways to print art:

1. From a raised surface—relief photoengraving on a letterpress; drypoint; block printing; woodcut
2. From a design recessed into the surface—etching; rotogravure, which is similar to relief photoengraving except that the design is sunk into the surface and the background is raised
3. From a flat surface—lithography; offset lithography

Another common type of art reproduction is screen process printing. Each type of reproduction has advantages and disadvantages. On the following pages we will examine each type in a little detail.

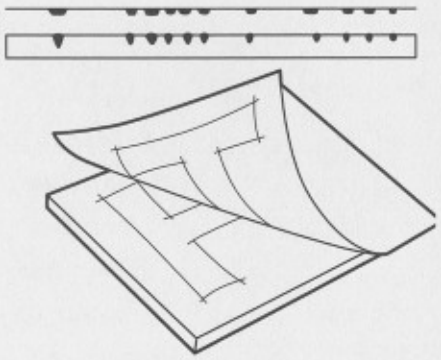
Letterpress was the first printing process. It was invented by Johannes Gutenberg in 1440, when he created a device that printed with ink on paper, using movable cast metal type mounted on a converted wine press.

Photoengraving

The photoengraving process combines the arts of photography and etching metal with acid. First, a photographic negative is made of the art to be reproduced. This negative is placed against a sheet of metal that has been covered with a chemical solution that hardens quickly when it is exposed to light. The light can reach the metal plate only through the transparent parts of the negative, so the chemical solution hardens only in those areas.

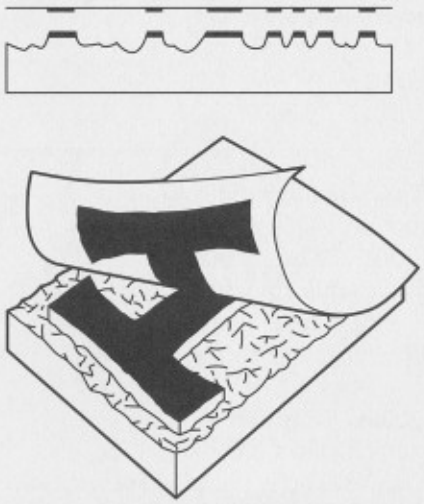
Next, the rest of the solution is washed away and a powdered resin is brushed over the plate; it sticks only where the solution has hardened. Then the plate is put in an acid bath. The acid eats away the metal that is not covered by the resin, which leaves the design raised on

the plate for printing. The same principle is used for rotogravure, except that the *design* is etched by the acid, leaving the *background* raised.



Drypoint

Drypoint is a method of engraving with a very fine needle, usually with a diamond point, which the artist uses to scratch the design onto an untreated copper or zinc plate. As the needle moves, it makes a groove and throws up a soft metal ridge on either side; this is called a burr. Ink is applied to the plate, the plate is wiped clean, and the burr holds the ink. Then, dampened paper is pressed against the plate, and the burr transfers the ink to the paper. Drypoint engravings have a rich, velvety texture.



Block Printing and Woodcut

Block printing and woodcut involve carving to create a relief design for printing—that is, a block with the background cut away from the design. The material for the block can be wood, linoleum, metal, plastic, or even cardboard. (You might have done this type of printing before with a potato!) Using knives, chisels, and gouges, the artist cuts away the block's surface, leaving the design as a raised area. To print from the block, the artist puts ink or paint on these surfaces and presses the block against paper.

Etching

Etching involves engraving on metal or glass with acid. First, the artist covers the plate with an acid-resistant, wax-based substance called a ground. On this etching ground, the artist then draws or traces the design with a sharp tool, exposing bare metal or glass. Next, the plate is placed in an acid bath, and the acid eats into the bare places created by the etching tool.

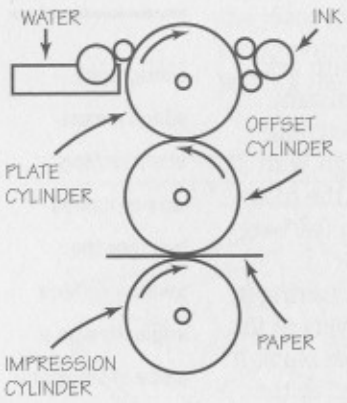
The artist makes prints from the plate by covering it with ink and then wiping it off, leaving little rivers of ink in the design. When paper is pressed against the plate, it lifts the ink, and the artist's design is transferred to the paper in tiny ridges of ink on the paper.

Lithography

Lithography is a way of printing from a flat surface, making use of the principle that oil and water do not mix. For a small number of copies, the artist draws or paints the picture directly onto a special flat stone with "greasy" paint or ink. The stone is then dampened with a special mixture that increases the stone's ability to hold water. Next, water is applied to the entire surface; the water is repelled by the greasy ink but is absorbed elsewhere. A roller passes greasy ink over the surface, and the ink is absorbed by the painted design but flows off the rest of the wet stone. Prints can then be made by pressing paper against the stone.

Commercial lithography is based on the same principle, but the techniques are much more involved. Metal plates and photographic processes are used in place of stone and handwork. In offset lithography, the inked image is transferred (offset) from the printing plate, which is mounted on a rotating cylinder, to another surface made of rubber, called a blanket, which is on another cylinder. The blanket is then pressed against the paper, transferring the inked image from the blanket to the paper.

Lithography, which means *stone writing*, was so named because the printing surface originally was a piece of limestone that had been ground flat. The lithographic process was developed by German map inspector Alois Senefelder around 1798.



The offset method was used to reproduce the cover of this pamphlet. Offset printing is also used for newspapers, magazines, and books.

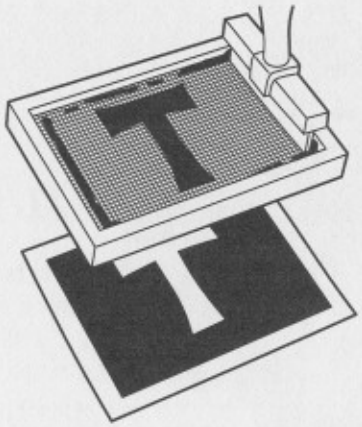
As the cylinders turn, water wets the nonimage areas on the plate cylinder, and ink adheres to the image areas. The offset cylinder (blanket) picks up the ink from the plate cylinder. As the paper passes between the offset cylinder and the smooth impression cylinder, the paper picks up the image from the offset cylinder.

The stone used in traditional lithography is a special limestone, usually from Bavaria. Limestone is sensitive to water, particularly in the open, untouched areas of the surface. Because the stone is quite heavy and often expensive, zinc or aluminum plates are also often used.

Screen Process Printing

Screen process printing is used in reproducing fine art pictures and in commercial printing. It is one of the most versatile printing methods because it allows printing on surfaces that cannot be run through typical printing presses, such as metal, glass, leather, wood, and plastic. Some examples of items printed with this process are electronic circuit boards, instrument panels, automotive gauges, watch faces, and clothing, wallpaper, and other textiles.

In screen process printing, a fine-mesh fabric screen is stretched across a wooden or metal frame, and a stencil is attached to the screen. The stencil might be painted on the screen, it might be a cutout, or it might be produced photomechanically. The frame is placed on top of the paper or other surface to be printed, and ink with a paintlike consistency is applied to the top of the screen. Then, a wide flexible blade called a squeegee is used to spread the ink across the screen, forcing it through the open areas onto the material to be printed. A new stencil has to be used for each color in the design, and each color must dry before the next one can be applied.



Some screen printing is done manually with simple equipment. Most commercial screen printing is done on power-operated presses.

Stencils

Some stencils are made of a thin sheet of flat material, such as cardboard or plastic, that has the design cut out of it.

Photographic stencils fall into two general categories: direct and indirect. Direct and indirect photographic stencil materials enable the screen printer to reproduce designs of greater detail and intricacy. For direct stencils, the stencil material is attached to the printing surface before the image is exposed onto the stencil. For indirect stencils, the image is exposed or cut into the stencil material before it is attached to the printing surface.

Screen Fabrics

Silk was the primary screen fabric for many years, but it has largely been replaced by synthetic fabrics such as polyester, nylon, and stainless steel. Synthetic fabrics are stronger, offer a more consistent thread diameter, and are more economical because they can be reused.

Careers in Art

For countless Americans, art is a way of life and a way of making a living. For fine artists, such as painters and sculptors busy in their studios, it *is* their life. It is not unusual for a fine artist to begin a work with no idea of who might buy it, and it's possible that no one will for years. But these artists (and possibly you) have the intense desire to create, and nothing will stop them from doing it.

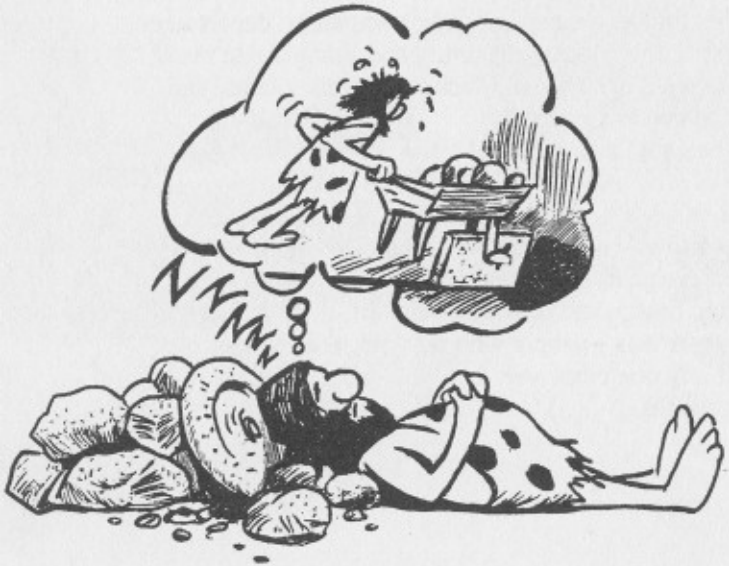
To the commercial artist, art is a way of life and a way to earn a living. This person expects to be paid for each work. Many commercial artists work for advertising agencies, art services, publishing companies, department stores, printing plants, engraving and lithographic businesses, greeting card manufacturers, textile plants, and sign and poster studios.

Generally, a commercial artist specializes in one phase of artwork. The artist might be an illustrator, calligrapher, layout artist, typographer, airbrush artist, sketch artist, window-display designer, graphic designer, fashion designer, book-jacket designer, or a textile designer. In the field of commercial art, there are also freelance artists—people who work for themselves, not for any one employer, and who sell their services to businesses.

Many other artists are employed in industrial design, which is an application of art and science in creating machine-made products. And there are other areas, such as stage and costume design, cartooning, and the special craft of creating animated cartoons for television and movies.

Art-Related Professions

Not everyone has a natural talent for creating masterful works of art, but that doesn't mean someone doesn't enjoy a deep appreciation of art. Some of these people pursue further education in the arts and other areas to become art administrators, museum curators, art critics, writers on the arts, and art consultants, to name just a few.



Be Prepared

Successful artists—both "fine" and commercial—are trained in their chosen craft. Most of them today are graduates of art schools. Schools cannot produce artists; only ability and experience can do that. But a school can help a beginner learn and hone his or her craft.

If you think you might enjoy a career in art, your guidance counselor at school can put you in touch with a good art school. If there is an art studio in your community, try to get summer work there. No matter what job you are assigned to do, you can learn something about art just from working in the environment and absorbing information.