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Practical Jewelry Rendering

PMC GUILD

Tools & Materials

It is hard to over emphasize the importance of using the best tools and materials available. Sometimes convenience or finances force us to settle for second best, but be aware that cheap paints and leads will interfere with the illusionary quality of a rendering, creating a disappointing effect. This is dampening to anyone's spirits and most especially to a renderer just starting out. Both blending and brightness—the two cardinal attributes of a fine rendering—are more difficult to achieve with poor materials. After a couple years of rendering you'll probably settle on a media that you find most comfortable, but if you're just starting, it makes sense to try all the possibilities. In addition to the supplies below, you'll want tissues and a water container. Work at a well-lit, uncluttered table from a comfortable chair with proper support. I often use an Optivisor® when I render.

Tools

- mechanical pencil (lead holder)
- graphite—B, HB, 2H, 4H, 6H
- cardboard stump
- kneaded and plastic erasers
- transparent triangle
- compass
- ruler (metric and inches)
- templates—circle, square, oval, etc.
- reusable palette (white dinner plate)
- pencil sharpener or sandpaper
- X-Acto or matie knife
- tape (drafting or repositionable)

Materials

Colored Pencils—soft leads are preferred; Prismacolor and Derwent are excellent brands.

Paint—gouache (“designer colors”) or watercolors can be used. Each manufacturer has slightly different names; use the list below as a point of reference. Avoid the bottom-of-the-line children's paint.

more necessary

- permanent white
- lemon yellow
- golden yellow
- yellow ochre
- Van Dyke brown

- Tracing paper
- Vellum

less necessary

- blue
- red
- black
- green
- burnt sienna
- Payne's Gray
- frosted acetate
- Canson paper—maroon, tobacco, dark
- grey, mid-gray, black

To buy all the paints, colored pencils, brushes and drafting tools listed here, along with tracing paper, vellum and Canson paper, it will cost about \$75. It might help to remember that the tools will last many years if well cared for, and that even small tubes of paint last a long time.



Basic Skills

Simply put, there are only two skills needed to produce exciting renderings: an understanding of where the colors go and the finesse needed to apply the media correctly. The first can be learned from observation and the other is acquired through practice.

Media

When using a pencil, you must be able to achieve at least 5 distinct shades of gray. As you get better, shoot for 8 or 9 identifiable values. Having fewer than this is like a musician who can only play a few notes; the music is likely to be boring. Practice by making a value ladder like the one shown here. Note that this is partly a matter of dexterity and partly improved perception.

Just as important in the final illusion is the skill of handling the media so that no gesture lines are evident. In the case of pencils, this means that the stroke must be soft enough to disappear. Create this with straight lines that are built up in several crossed layers or move the pencil in small circular strokes that overlap slightly. However you get there, practice until you can create an even field of gray tone. Generally make pencil lines lighter than you think they should be. If you decide they need to be darker you can apply another layer of graphite. Get in the habit of sharpening your pencil frequently; the crispness of fine lines will make the drawings more “metallic” and convincing.

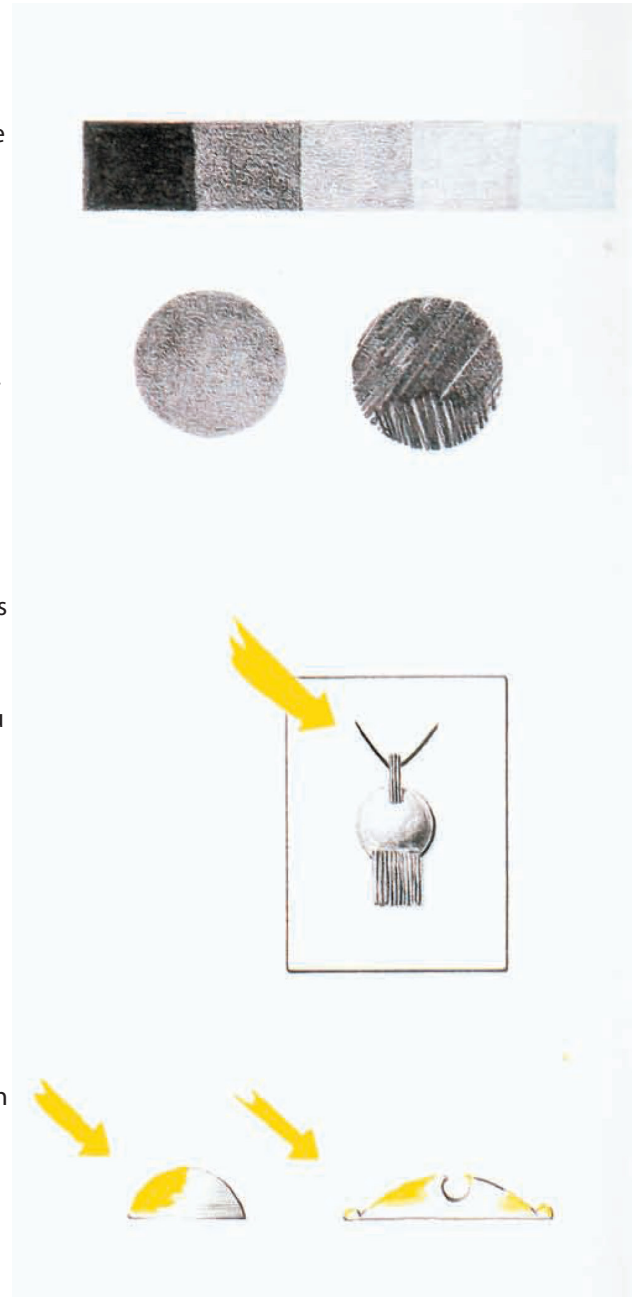
Both gouache and watercolors are made more fluid with slight additions of water. If the paint is too thick it will cake up on the paper and be difficult to blend. If too much water is used the application is difficult to control. With practice you’ll learn how much water to use.

Placement

It is a convention in jewelry rendering that light enters the frame from the upper left corner. It’s important to understand how this light will fall on a rounded form, as illustrated at the right. The trick of effective rendering lies in the ability to carry this information to a complex form, as in the second example. It might be helpful to draw a simple cross section plan before starting a rendering to help visualize where the lights and darks will be placed.

A rendering is more impressive when it dominates the space immediately around it. This is easily achieved by drawing a square or rectangle around the form. This can be as simple as a pencil line or as sophisticated as a colored border; in either case it should not overpower the jewelry. By making the right and bottom lines a little heavier, the three-dimensional effect is increased. This frame should not be so close that it impinges on the jewelry, but it must be close enough to establish a reference with the object. Usually about a half inch of breathing space around the design will accomplish this.

Almost any object can be reduced to basic geometric forms. By understanding the effect of light as it falls on these forms, you will be able to convey the shapes of your jewelry designs.



Transferring the Outline

Rendering is a process of creating on a two-dimensional surface a realistic representation of what will later become a three-dimensional object. Technically, rendering is distinct from the process of design, though of course in practice the various elements interact.

- Make your working drawing in a sketchbook, using whatever extra lines are needed. When the correct form emerges, draw over it darkening the lines so they will show up clearly. Jewelry is almost always rendered in actual size. Exceptions might occur in the case of large objects such as hollowware, which can be reduced, and small items such as ear studs or small rings, which may be enlarged.
- If the rendering is to be made on medium-weight white paper, you can probably trace the original drawing directly. This is easiest on a light table, but you can also lay the work on a window and trace the outline there. Most rendering is done on a heavy colored paper and this requires an intermediate step to transfer the image. Carbon paper is not acceptable because the line it makes is too dark and cannot be erased.
- First, copy the original drawing on tracing paper. Flip the sheet and draw over the back side of the tracing with a soft graphite (2B) or with a colored pencil—yellow for gold, white for silver. Invert the tracing and position it carefully on the rendering sheet, perhaps taping it lightly so it can't slip. Use a hinging piece of tape so you can check your progress. Draw over the correct side again, using this pressure to press the soft graphite onto the rendering paper. Use a light touch so the line is faint and will not show in the final rendering.
- Templates can be used directly on the rendering sheet and do not require transfer. In fact even if the drawing itself is being transferred, it's best to leave any circles, squares or ovals out of the tracing step and simply insert them directly into the outline.
- Some renderings, particularly those with simple outlines, do not require the transfer step. Simply draw the outline on the rendering paper with a pale colored pencil and proceed directly to the rendering.

Always wash your hands before starting to work, and protect the paper from hand oils with a piece of scrap paper, either whole or with a "drawing window" cut away.



Graphite Rendering

While not as convincing as color renderings, black and white drawings can provide a fully realized view of a finished piece of jewelry. They are generally easier to create than color renderings and might be sufficient to your particular needs.

Use a variety of drawing pencils or leads, ranging from HB through 2H, 4H and 6H. These hard leads will make only light marks on the page, allowing great control as you build up many layers of graphite. In addition to pencils you will need a stump, a vinyl and a kneaded eraser and some white paint or chalk.

1. Draw the object in a sketchbook, making whatever guidelines are helpful. Trace this onto a good quality vellum, using a light table if one is available.
2. It is important that you have sufficient control over the graphite to achieve a range of gray tones that show no sign of pencil strokes. On a piece of scrap paper, practice marking until you can create at least five clearly different shades of gray, each one drawn as a field of value. This is not a once-in-your-lifetime exercise, but calisthenics you should repeat each time you sit down to draw.
3. Fill in the entire outline with a light shade of gray.
4. Light striking the object from the upper left will cast a shadow on the quadrant diagonally opposite; the lower right. To convey this, draw over the outline one the lower right quadrant with a relatively soft pencil. As it rounds a corner this line will taper down to the width of the original line.
5. Shade the areas that curve away from the light toward the lower right quadrant. The thicker the piece, the greater the transition to dark here. Remember to feather the pencil marks so no stroke is apparent. To communicate the reflective nature of metal, leave a line of pale gray at the extreme edge of the form where light from the table surface bounces back on the piece. Remember to add a shadow to any element that crosses over the basic form.
6. Lighten the curved areas that arch toward the light by lifting a small amount of graphite with a kneaded eraser. A rubber eraser is not recommended because it will create a smudge.
7. If the piece is highly reflective, add highlights with white paint directly from the tube. Use a fine brush and follow the contours of the piece.
8. Shadows cast by the piece contribute greatly to the effect of the illusion. Where the piece touches the background, the shadow will touch the object; where it is raised from its background, there will be a space between object and shadow. In either case the shadow will be opposite the light source, around the lower right of the object.

The soft gray of a shadow is made with a stump that has been charged with graphite powder. Use a soft pencil on a piece of scrap paper to create a patch of loose graphite and dab the stump into this. For small areas I use the shaft of a Q-tip.

9. If the drawing is not going to be matted, draw a confining square around the image.



Introduction to Color

To make your renderings believable you should have a clear understanding of the qualities of various colors and the techniques for creating a range of hues and values. High-karat gold has a warmer, richer color than 10K for instance, and your renderings should convey that. The sample palette shown here indicates the range of colors typically needed to render gold. The circles are made of pure color, straight from the tube. The areas in between show a middle mix of two pure colors. The hues above the center are made by adding increments of white; those below the center are made by adding the dark gray shown. This was made by mixing red, yellow and blue. By duplicating this exercise you'll gain experience in mixing colors and an understanding of their relationships.

- Use only tiny amounts of paint to create subtle color variations.
- 14K has less yellow than you might think. The base color is flesh tone made by mixing yellow ochre with permanent yellow and white. High-karat yellow golds have a good bit of red and yellow.
- Lighter shades are created by adding white; to make a color darker, add its complement or a mix of red, blue and yellow. Avoid darkening by adding black - this makes a flat "muddy" color.
- When using colored pencils and transparent paints, the color of the paper will contribute to the effect.
- Substitutions:
 - Lemon yellow + red = permanent yellow
 - Red + blue + yellow = gray
 - Red + yellow + ½ blue = brown
- Silver is indicated mostly by its shadows, usually rendered in gray.

Use a mixing dish that has plenty of working room. The process of painting will be easiest if you develop a regular system for laying out your colors. The illustration here suggests a place to start.



Colored Pencils

Even though colored pencils are available in a wide range of colors, you'll achieve a richer and more satisfying color by building up layers of hue. For example, use red and blue on top of each other to create purple. If you work on colored paper, this will alter the effect; a blue pencil on a pink paper will make purple. In addition, you'll find that the value or lightness of the paper will affect the colors you can achieve. For this reason, avoid working with colored pencils directly on a dark surface. It's important to keep your pencils sharp—an automatic pencil sharpener is a convenient aid in this. When using pencils, color intensity is achieved by pressing down hard.

1. Draw the object in a sketchbook and trace this lightly onto vellum or Canson with a pale yellow pencil.
2. Fill in the entire metal area with an even tone of pale yellow. Blend with a light yellow or with white. Leave any stone areas vacant.
3. Use yellow ochre to fill in the areas that fall away from the light, toward the lower right quadrant. As the form bends away from the light, press down harder. Close to the edge, introduce chocolate brown sparingly over the yellow ochre.
4. Use this same brown, sharpened to a fine point, to trace the outline of the lower right half of the piece, making the line widest at the point opposite the light source.
5. Select a plate yellow pencil and lay some highlights in the upper left section as the work catches the light. Not all pencils will cover sufficiently to achieve this effect, so you might need to substitute paint or oil pastel. If the latter is used, it might be necessary to follow through with a pencil to define the edges of the highlight.
6. To illustrate the highly reflective surface of a polished metal, use white paint tinged with a trace of lemon yellow in slivers that follow the contour of the piece. These will be diagonally opposite from the darkest sections of the lower right.
7. Lift the piece off the page by applying a shadow with a stump on the lower right. If you are working on colored paper, cast an actual shadow on the paper with your hand and duplicate the color you see there. Practice on scraps until you can create this hue by mixing several pencils, then use this treatment to make the shadow.

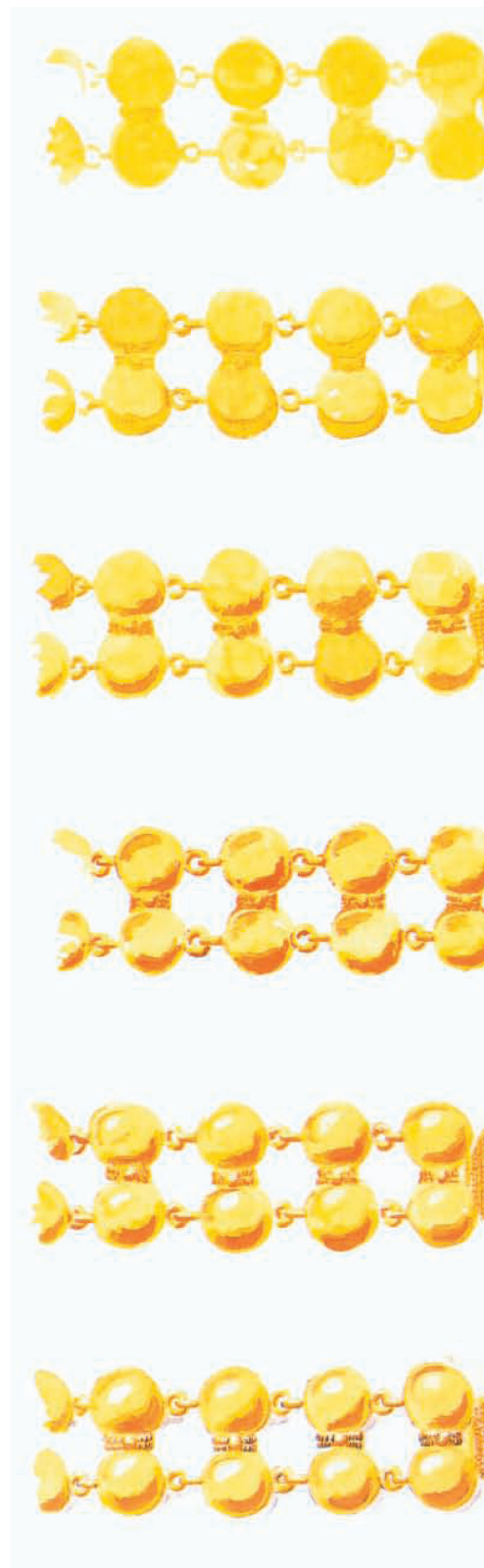
When working on colored paper, start by painting a silhouette of the shape in which gouache. This will make the color pencil more vibrant.



Transparent Paint

Paint is the most traditional and probably the most effective media for jewelry rendering. Two distinct styles are used, as explained on this and the following page. In either approach, paint requires practice and demands a slightly higher investment to get started, but because the liquid medium blends so well, the results are extremely convincing. The key to this first method is the slow accumulation of thin layers of wash. This is a gentle process in which the image appears to coalesce on the page.

1. Make a clear outline drawing in a sketchbook and trace it onto stiff paper. Use a pale yellow or white pencil to create a faint line around the shape.
2. Mix white with permanent yellow and yellow ochre to create the base tone shown here. Thin this with water to make a wash and paint this over the whole form, coming up to the pencil line. If the paint makes a puddle on the paper, touch an edge of tissue to the paint to draw away excess water. Blot the brush and reload it before continuing.
3. Mix permanent yellow into the wash and paint a strip along the lower right quadrant, following the contours of the piece. Feather the edge of this area into the base coat.
4. Add umber or burnt sienna to the mixture and paint another band along the lower right quadrant of all forms. Do not quite touch the edge, leaving a proportionate strip of base coat to indicate a reflection.
5. Add a tiny bit of brown or a mixture of the primaries to darken this base color. When the previous layers have dried, lay a thin band of this shadow color over the lower portion of that strip. Take pains in defining the edges of these shadow bands, because they will provide important information about the shape of the object.
6. Mix lemon yellow and white to make a warm highlight color and paint a band of this on the areas of the piece that curve toward the light source in the upper left. Add more white and paint in a narrower band of highlight. When this is dry, add a few small bright spots: use pure white for silver, and white with a tiny amount of yellow for gold. Highlights are best when used sparingly. You might want to use a sharp, hard-lead pencil to create the metallic hard edges we associate with jewelry.
7. If working on white paper, use a stump charged with graphite to draw in a shadow along the lower right edge. On colored paper, you'll achieve a more convincing look by mixing a color that mimics the color of the paper when in shadow. Cast a real shadow with your hand on the paper and mix paints until you duplicate this hue, then paint it along the lower edge.



Painting to Indicate Silver

Follow the process described above with these color substitutions. The base tint is permanent white in a thin wash; on gray paper this will create a soft gray hue. Add tiny amounts of black or a brown-and-black mix to create the shadows for the lower right. When the paint is dry, use pure white to create reflections in the areas closest to the light source.



Opaque Paint

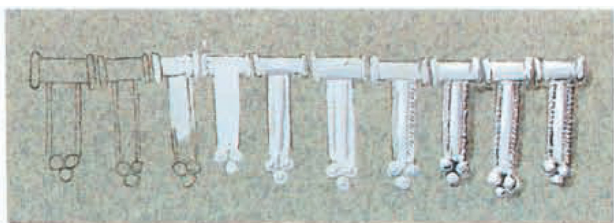
This process depends on mixing the correct colors on the palette then laying them with assurance into the correct place in the rendering. The effect is usually more substantial than the wash method described on the previous page. As you work, paint your colors on a bit of scrap and hold them next to the examples shown here to be sure that the hues and values are exact. The color notations refer to the color chart on page 5.

1. Transfer a drawing from a sketchbook to a colored rendering paper.
2. Mix a base color by combining white with permanent yellow and yellow ochre (D2); paint a thin layer across the entire surface and allow it to dry.
3. Add a bit of yellow ochre (D3) and paint in a band that follows the contours of the piece as it rolls into shadow along the lower right quadrant. This is a wide band and will begin to clarify the shape of the piece. Do not go right to the edge, but leave a thin strip of the original base color showing. Note that each raised element, such as the small spheres, is treated this way.
4. Mix yellow, blue and red or use a prepared gray to darken the previous mix (D7). This is a medium shadow and might be useful in detail areas or wherever there are small recesses.
5. Add more of the gray and perhaps a little Vandyke Brown into the last color but be careful; only a tiny bit is needed. Use this to indicate the area in greatest shadow by painting a band along the lower edge of the piece (F8 or G8).
6. To create highlights, mix permanent yellow and white, using 2 or 3 "steps" to brighten the areas of the piece that reflect the most light. Be selective, keeping highlights to a minimum (A1, A2, B1, B2).
7. Lay in a thin reflection and shadow as described previously.

When showing a chain that is secondary to the piece, as here, it is often sufficient to paint in simple strokes or arcs with each of the successive colors as the piece is being filled in. If the chain is a secondary part of the object, it can "fade out" through paler color or lack of detail as it moves away from the center. This will focus interest on the pendant. When the chain is a more dominate part of the jewelry it should be rendered with the same care as every other part.

Painting to Indicate Silver

It is more difficult to render sterling convincingly than gold. When only white paint is used, the object looks like it's made of plaster. The transparent method allows the color of the paper to show through, hinting at the full color rather than using it across the whole piece. An alternate method uses pale blues to add tone to the white.

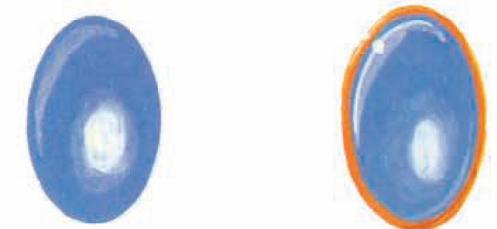
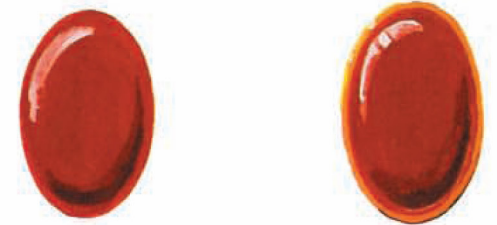
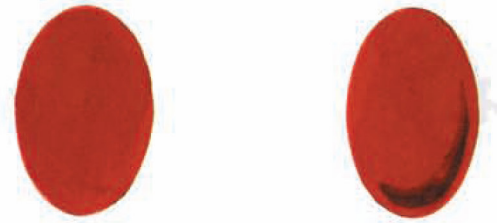


Transparent Paint

Gems are a lot of fun to render, but because they require some precision, you might want to render a gem first before spending much time on the whole piece. Transfer the outline and paint the stone first. When you like the effect, complete the rest of the rendering around the stone.

Opaque Stones

1. Where appropriate, use a template to create a delicate colored pencil outline of the stone.
2. Select a color (pencil or paint) that best illustrates the color of the gem. Create a wash of this base color across the entire stone area.
3. To create the shaded section, darken the base color by adding its complement. Paint or draw this on the lower right quadrant, following the contour of the stone. For pencils, this is usually a matter of laying one layer over another.
4. Add a thin crescent of white wash along the left section where the light is closest. Add a sliver of this thin wash on the lower right quadrant, where the light bounces back onto the stone. Even if the rest of the rendering is in pencil, use paint for this reflection. Allow this to dry, then sharpen the upper crescent with a thin band of pure white straight from the tube. Paint in prongs or a bezel as called for in the design.



Translucent Stones

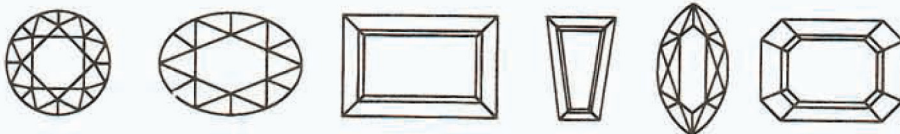
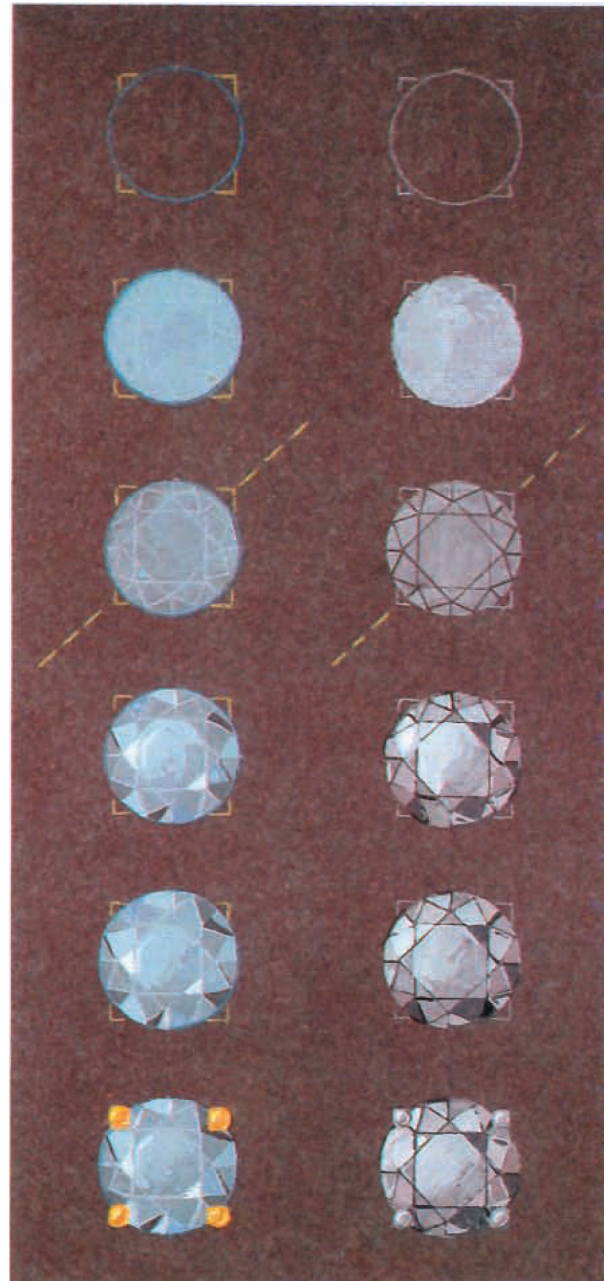
1. Repeat steps 1 and 2 above.
2. Repeat the shape of the stone with a circle or oval of white, slightly to the right and below the center of the stone. Allow this to partially dry then feather it outward with a damp brush. For colored pencils, use white paint to make the dot and white pencil to blend the light outward.
3. Repeat step 4 as described above.
 - When using a variegated stone such as an agate, study the stone before starting. It's usually easier than you might think to mimic the pattern and colors of a stone.
 - To increase the effect of a reflective surface, a gem rendering can be painted with clear nail polish, acrylic fixative or similar shiny coatings.
 - It's sometimes useful to see a design both with and without a gem, or with one of several choices. Render gems on acetate (page 12) and lay them into position with a tape hinge.



Faceted Stones

The larger the stone, the more important the details become. The examples here use a very large stone for the purpose of illustration, but as the size goes down the details can be scaled back. In the case of meles and pavé settings, for instance, a few well placed sparkles can carry most of the load. The following information refers to stones with a diameter over 3 millimeters. After perfecting this technique you'll be able to edit the information as needed for smaller stones and unusual shapes.

1. Use a template to draw a thin pale pencil line around the stone. Lightly indicate the location of prongs (if appropriate) and leave these areas unpainted or plan to cover with an opaque paint later.
2. Create a pale wash of the base color for the selected stone. For a diamond this will be white as illustrated. When using paints, this color is achieved by diluting the pigment with water, not by lightening it with white. A ruby, for example, will start with a thin wine-colored wash, not pink. Divide this wash into two areas in your paint tray. When using colored pencils, achieve this effect by using at least three shades of a color—for instance a medium-red, a maroon and a deep red-violet. This range of colors, used in conjunction with a black or dark blue and used at various pressures will provide an adequate range of hue. Anything less will probably be too limited to be convincing.
3. With a white pencil or a fine brush and white paint, draw a simplified pattern of facets.
4. Imagine a line at a right angle to the direction of the incoming light. Facets to the right of this will be predominately darker while facets to the left will be lighter, though note that both values occur around the stone. Mix black for a diamond or a complimentary color into the base tint and paint facets one by one.
5. Use white added to the base color to create the same effect moving toward lighter tones as you move from that line toward the light source, ending with a white facet in the upper left. When using paint, this is achieved by adding white, step by step, to the second puddle of base color.
6. Allow the paint to dry and use a tiny amount of white on a dry brush to make a few sweeping hairlines diagonally across the table. If necessary, use a very sharp colored pencil or a knife to refine the facet lines and edges.

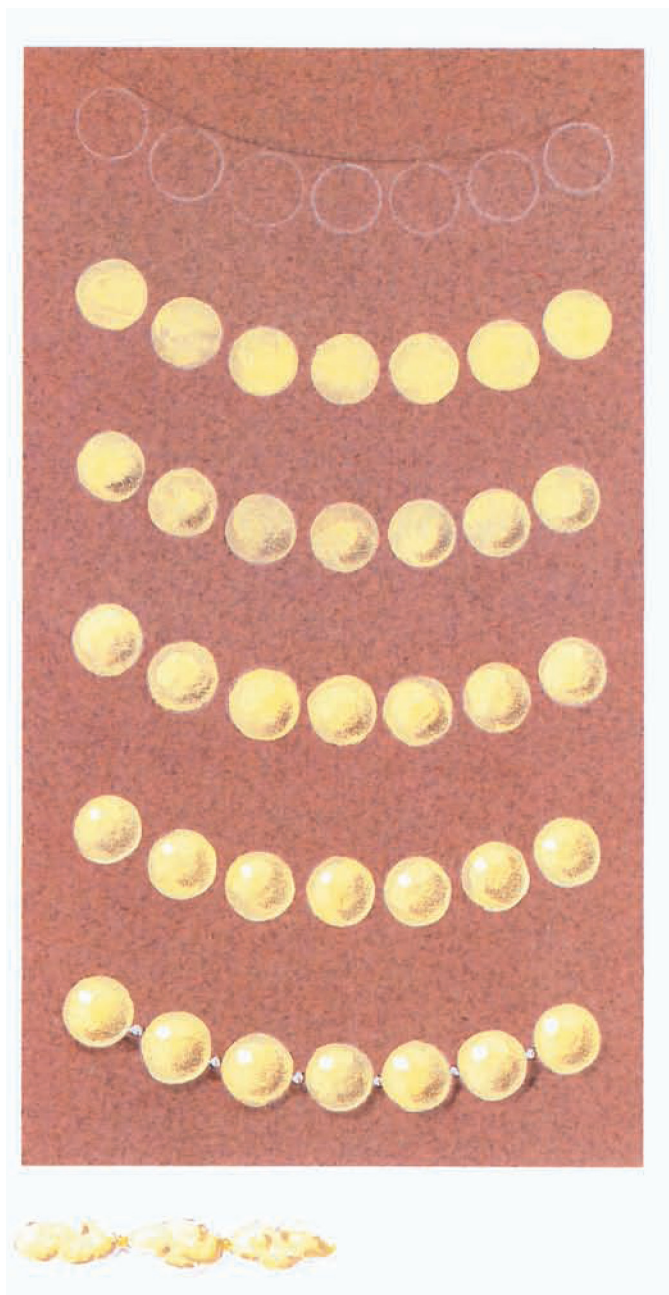


Pearls and Beads

Pearls are available in a range of colors, so this information will need to be modified to achieve exactly the right hue. Because the color shifts are subtle, only tiny additions of color will be necessary.

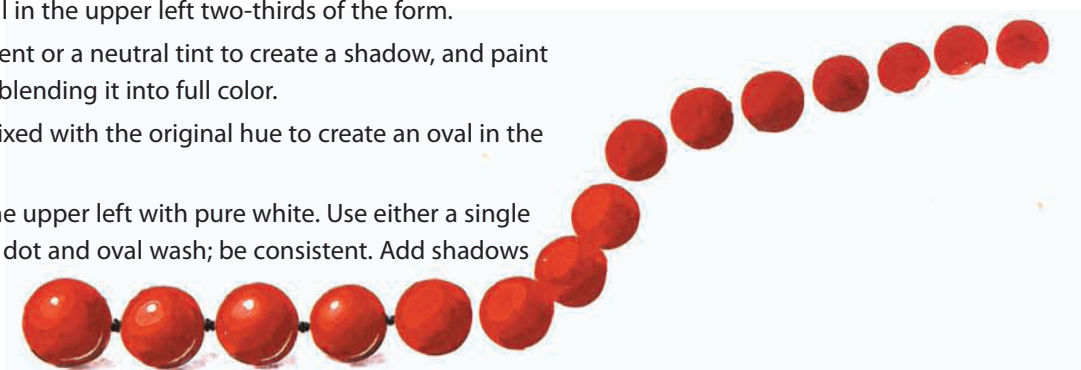
Pearls

1. Use a template to draw pale circles; use a hard lead on white paper and a white pencil when working on colored stock as shown here.
 2. Mix a tiny amount of golden yellow with white to create a creamy opaque color. A very small amount of red will warm the tone slightly. Use a thin wash to allow the warm tone of the paper to show through. Paint this evenly in each of the circles and allow it to dry.
 3. Shade the lower right section of each pearl with a cardboard stump rubbed with graphite. For delicate work, make a miniature stump from a Q-tip or lollipop stick.
 4. Add white to the original creamy mixture and use it to paint an oval or kidney-shaped highlight in the upper left quadrant.
 5. Make a thin arc-shaped line with the creamy mixture outlining the lower right edge of each pearl, then paint a reflective white dot in the upper left to indicate a light source.
 6. Paint a dot of color to indicate the knots between pearls; after the paint has dried this can be shaded slightly with a sharp graphite pencil. Use a stump to create a shadow below and to the right of each pearl.
- For freshwater or baroque pearls, follow the above directions, but add a couple of irregular patches or shadow to indicate the uneven contours of the form.
 - In the case of nuggets or other irregular shapes, use an oval or rectangular template as a fence to keep all the freehand drawings about the same size.



Opaque Gem Beads

1. Mix a paint or select a colored pencil that best matches the full color of the bead. Use this to fill in the upper left two-thirds of the form.
2. Mix with the complement or a neutral tint to create a shadow, and paint this in the lower right, blending it into full color.
3. Use a wash of white mixed with the original hue to create an oval in the upper left.
4. Create a highlight in the upper left with pure white. Use either a single dot, a pair of dots, or a dot and oval wash; be consistent. Add shadows as usual.



Acetate

Overlays on transparent plastic provide an opportunity to assemble a rendering in several variations and are useful when helping a client understand several options. In a simple version, this might be an engagement and a wedding band, drawn separately but arranged so the two can be seen together. In a more complicated application, several gems or additional units might be drawn and hinged in a couple directions so they can be seen in multiple combinations.

Painting on Acetate

Paints are used on clear acetate, which is available in several weights, the choice being a matter of personal preference. Wash your hands before handling the acetate and if you suspect the film might be dirty, wipe it lightly with a tissue and alcohol or nail polish remover.

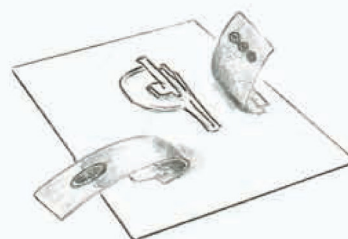
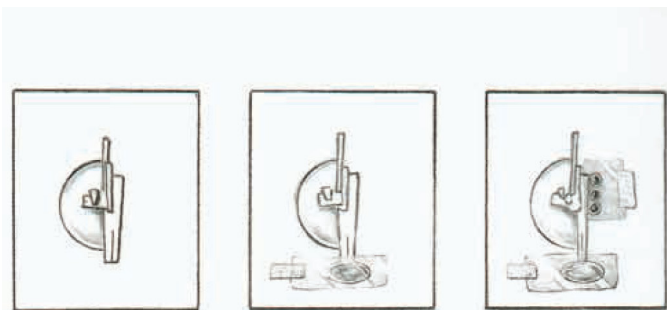
1. Make a drawing on sketch paper and tape it to the tabletop or drawing board. Make any guidelines, notations or reference points that might come in handy; this is a visual note to yourself. Lay a piece of acetate over this and tape it into position.
2. Lay a piece of scrap paper on the plastic to protect it from hand oils.
3. Proceed as described in the previous pages, moving from a wash of the lightest color through progressively darker tones, again with the light source entering from the upper left side. Use the same colors as you would for a rendering on paper, but omit the shadow.
4. Because the plastic does not absorb water like paper, the paint will take longer to dry. Plan ahead and be patient. Generally a thicker pigment is needed to achieve a bright rich color.

Pencil Rendering

Drawing acetate is a clear plastic film that is smooth on one side and frosted on the reverse. Drawing is done on the rough side, then the file is flipped over to reveal a clear, shiny drawing. You'll find frosted or drawing acetate at most art supply stores, sold in rolls, large sheets and pads. Try a few of the several thicknesses (described in mils) to decide which you like best.

Pencil cannot be erased; any attempt will burnish the texture of the plastic and make a nasty smudge. Always handle the plastic film with clean hands because even unseen finger oils can cause stains.

1. When using the frosted acetate, trace the previously made drawing, using a very hard pencil (6H). If the drawing is complex, lightly tape the plastic into position.



2. Set a piece of scrap paper over the plastic as a hand rest, and shade the area on the lower left. Note that this is the reverse of the usual format, because you're working on the back side of the drawing. It might seem a little strange at first.
3. Highlights (which will be in the upper right) are best created by leaving the film unmarked as opposed to applying a bit of white later. It's possible to draw the reflective "window" in your original sketch to help you plan its location.
4. Flip the acetate over periodically as the drawing progresses to check the effect. Cut a simple mat for the acetate and tape it across the top then set a piece of white paper behind the drawing.

Other Materials

Once you understand the logic rendering, it's pretty easy to figure out colors and a sequence of layers to achieve specific effects. The examples below show in an abbreviated way how the same forms were rendered as several different materials.

Green Patina on Cooper



Wood



Bone



Alternate Approaches

The way you convey information might be as important as the information being conveyed. After experimenting with the traditional methods of rendering, experiment with alternate media and styles to create a system that shows your work in its best light. The examples on this page are far from comprehensive, but indicate a few of the dozens of opportunities waiting for further experimentation.

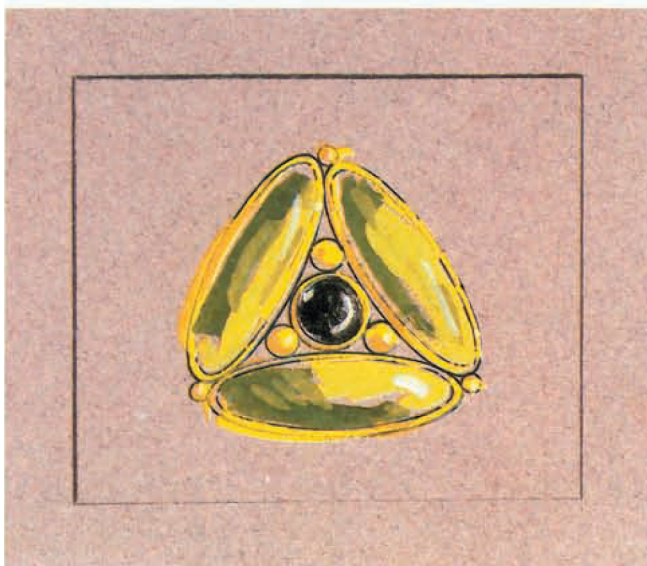
Technical Pen



Felt Markers



Painterly



Ink Wash and Chalk

