

List 6-1 Quotations About Sculpture

- "There is a right physical size for every idea."
—HENRY MOORE
- "Simplicity is not a goal, but one arrives at simplicity in spite of oneself, as one approaches the real meaning of things."
—CONSTANTIN BRANCUSI
- "Brancusi, like the Japanese, would take the quintessence of nature and distill it. Brancusi showed me the truth of materials."
—ISAMU NOGUCHI
- "The Human Body is the mirror of the soul, and it is from this fact that it derives its greatest beauty."
—AUGUSTE RODIN
- "Above all, sculpture is a conquest of space, a space that is delineated by forms."
—HENRI LAURENS
- "My work is a very specific fight against specific fears, one at a time. It comes close to a defining, an understanding and accepting, of fear."
—LOUISE BOURGEOIS
- "I have made my world and it is a much better world than I ever saw outside."
—LOUISE NEVELSON
- "Whatever the artist makes is always some kind of self-portrait."
—MARISOL
- "It is easy. You just chip away the stone that doesn't look like David." (Michelangelo in explaining how he made his statue of David.)
—MICHELANGELO
- "One must work, nothing but work, and one must have patience."
—AUGUSTE RODIN
- "In modern work, the spectator has to bring with him more than half the emotion."
—ALEXANDER CALDER
- "True strength is delicate."
—LOUISE NEVELSON
- "A good statue can be rolled down hill without damage."
—MICHELANGELO

List 6-2 Things to Do in Sculpture

Sculpture techniques are listed below. The techniques and tools vary considerably depending on the material used.

ASSEMBLAGE

- Buy plastic scraps of various thicknesses, sawing and sanding the edges. Use colored light below to allow the color to reflect on the edges.
- Collect natural materials such as bones, (pine) cones, and stones, and use wire or a glue gun to attach them to each other. Or assemble them within a frame to unify them.
- Create a bas-relief design using one sheet of foamboard, cutting out and reassembling the design. Add sand to acrylic paint and paint in one color.
- Create a wire figure in action; tack it to a board, then wrap the figure in sculpt-tape®; paint or stain.
- Interpret a painting three-dimensionally. Use cardboard, sculpt-tape®, and other found materials.
- Make a sculpture of *units* of manufactured materials for sculpture: items such as cotton balls, cotton swabs, foam cups, foam balls, toothpicks, or straws.
- Make units such as cubes, triangles, or pyramids from paper. Group and glue these units together.
- Use sheet plastic and plastic dowels to create a sculpture, cutting pieces with a saw, and joining with plastic cement or epoxy glue.
- Use the inside of a shallow box (preferably wood) as the base for a box-sculpture, using maps, paper, and found objects. Attach with a glue gun; cover with plexiglass before hanging.
- With sculpt-tape®, cover an armature made of taped newspaper or tagboard to create an animal or human form.
- Wood scraps may be purchased (or donated) from a carpentry shop. Assemble these with glue, painting if desired with acrylic paint.

CARVING TECHNIQUES

- Carve a design in a paraffin block.
- Carve a sculpture from firebrick with rasps, knives, and coarse sandpaper.
- Carve large pieces of Styrofoam® packing material with a heated blade; finish with rasps; paint.
- Carve or incise designs on shells and bones.
- Create a carved "shop sign" for yourself or a friend, combining the name with a symbol such as glasses or a shoe.
- Create three variations of a simple geometric form in three different materials such as wax, plaster, and wood. Combine them.
- Find a piece of wood in nature and change it by sawing, weaving, removing, or adding something to it to create an entirely new form.
- Fragment and reassemble an object by sawing it in slices, then gluing it slightly "off."
- Get a 2- to 3-inch thick candle and carve a design-in-the round on it with a knife. Antique with acrylic burnt umber; wipe off the excess.
- If you have access to electrical tools, create a sculpture only by sawing a piece of wood or only by drilling; or only by working on the lathe.
- Interpret a tree or another natural object in a bas-relief sculpture. If a carving "mistake" is made, natural objects are "forgiving," where something such as a realistic portrait is not.
- Mix plaster with vermiculite and pour into a milk carton; carve with a knife or plaster rasps.
- Soap-carving is age-old, but continues to be a good introduction to carving, as it demonstrates the technique of removing only small amounts of material at a time.
- Use slate for a bas-relief sculpture, carving with stone tools, rasps, and sandpaper.

CASTING TECHNIQUES

- Create a clay model, make a plaster mold from it, and then cover the mold with paper pulp.
- Do a sand-casting in a box (or at the beach). Make a pattern in damp sand, pour plaster, and allow it to harden. Put a large paper clip in the back while not completely set to hang this on the wall.
- Grind cotton lintens (for papermaking) in a blender; drain through a sieve; pat the pulp into a plaster or plastic mold.

List 6-2 Continued

- Make a bas-relief by creating a design in oil-based or ceramic clay, building up the sides to make a shallow tray, and pouring plaster into it.
- Make a plaster model of your hand in a greased shoebox by pouring in a 2-inch layer of plaster and doing half your hand one day and the other half the next day. Grease the first mold before reinserting your hand. Join the two greased hardened halves together and pour plaster inside the mold. After it hardens, open the mold.
- Mix and pour plaster into a plastic bag, holding the bag against your body until it sets (remember you have to be able to remove it from your body after it hardens). Smooth and shape with rasps and sandpaper.

MODELING TECHNIQUES

- Assemble several pieces of Styrofoam® with dowels to hold them together, then shape. Cover with plaster. Use rasps and sandpaper to smooth plaster if desired.
- Create a clay portrait head by making an egg shape and putting it on a neck. After it is carved, hollow it out to a 1-inch thickness, leaving an opening in the bottom.
- With ½ pound of oil clay, interpret a *word* such as “calm,” “angry,” “sad,” or a word of your choice such as “love.” Avoid the trite or obvious, and think of the mood you are showing in sculpture.
- With ceramic or oil clay, create a human form in a seated position, with arms held close to the body or head.

List 6-3 Sculpture Definitions

- academic sculptors** sculptors who interpret forms in the classical tradition
- annealed wire** wire that has already been heated for easy bending
- armature** a base made of wire, iron, cardboard, or sticks for supporting modeling clay
- assemblage** a sculpture created of related or unrelated materials
- bas-relief** literally low-relief; a three-dimensional sculpture to be seen only from the front
- bruise** if a stone is hit incorrectly, it may rearrange molecules deep inside that will cause it to break
- Carrara** a quarry in Italy that is used today for fine marble, even as it was in Michelangelo's time
- carving** removing material from a surface such as wood, stone, or plaster
- casting** pouring liquid such as molten metal, plaster, polyester resin, or clay into a mold
- form** a three-dimensional shape, such as the human form or an abstract form
- hardwood** woods that drop their leaves, such as maple, walnut, ash
- maquette** a small preliminary model for a sculpture
- modeling stand** a revolving chest- or eye-level stand for supporting clay while modeling
- monumental** literally a monument to someone; a large sculpture; or the *idea* of a large sculpture
- moulage** a rubberized material to place on face or hands for making a reusable mold for plaster
- negative space** the interior space or space that surrounds a piece of sculpture; lets air into it
- polyester casting resin** liquid material that is mixed and, when cast into a mold, hardens clear
- quarry** a place where sculpture materials are mined
- roughing out** removing the extraneous material from a carving surface prior to refining
- softwood** wood with needles, such as pine, fir; easier to carve, but splinters easily
- Twisteeze wire®** plastic-coated copper wire for jewelry and sculpture
- wire bending jig** small metal or wooden form that holds wire while it is being bent

List 6-4 Materials for Sculpture: Assemblage, Carving, Casting, Modeling

ASSEMBLAGE

- found materials** metal, twigs, cardboard, electrical parts, clock parts, cloth, wood scraps, bones, frames
- plaster gauze** plaster-impregnated strips that may be further cut, dipped in water, and used to make sculpture; originally developed for use in casts for broken limbs

CARVING

- alabaster** soft material usually white or veined with gray; takes a fine polish, translucent
- Balsa Foam®** soft plastic foam easily carved with ceramic loop tools or knife
- carving wax** this wax may be carved for jewelry or small investment casting
- clay** Indian red, white sculpture, raku, clay with grog, white talc, stoneware clay
- firebrick** inexpensive beige porous brick, quite soft, may be finished with rasps or knives
- limestone** porous gray or beige stone that is relatively easy to carve and finish
- marble** more difficult to carve, takes a high polish
- plaster of Paris (gypsum)** a quick-setting white powder that is mixed with water; the addition of vermiculite makes carving much easier
- soapstone** easy-to-carve stone that finishes to a high polish; gray, green, or off-white
- Styrofoam® blocks** these blocks may be carved
- Styrofoam® cutter** heated-wire cutters for Styrofoam®; electrical or battery operated
- vermiculite** available at garden supply shops; lightweight filler; mix with plaster for easier carving

CASTING

- Crea-Stone®** a refined form of plaster of Paris; may be carved or cast
- hand-made paper pulp** created by grinding paper and/or cotton linters in a blender
- hydrocal** slower setting than plaster of Paris, and has a less porous surface; can be carved
- hydrostone** hardest of the gypsum plasters; five times the strength of plaster of Paris; not for carving
- plaster of Paris** gypsum in powder form; when mixed with water it quickly hardens

MODELING

- Celluclay®** instant papier-mâché powder
- microcrystalline wax** soft brown wax that softens in warm water or with handling, for building on an armature; may be cast, or simply left in the wax form
- Model Magic®** a soft white dough compound that is clean, easily molded, and may be painted
- modeling dough** reusable dough similar to Play-doh®; hardens when exposed to air
- Ovencraft clay®** may be fired in a 350° oven for one hour; may be painted or stained
- paperclay** pulp-based white modeling clay; paint may be added prior to modeling
- plasticine modeling clay** an oil-based clay that never hardens; comes in colors; reusable
- Sculp-metal®** looks and handles like clay, but air hardens into metal that can be burnished to give an aluminum-like finish; the surface can be enhanced through metallic sprays
- Sculpey®** modeling compound that remains pliable until it is baked
- self-hardening clays** air-dried projects resemble kiln-fired ceramics and may be painted or stained

List 6-5 Hardwoods, Leaf-Bearing Trees

Hardwoods are from broadleaf trees such as ash, oak, or walnut, and have greater density than the "softwoods," making them a little more difficult to work with. Their beautiful close grain and patterns make them the ideal choice for sculpture.

apple	cherry	lignum vitae	oak, white
ash, brown	cherry, black	lime	pear
ash, white	chestnut	magnolia	poplar
balsa	cottonwood	mahogany, Honduras	rosewood
basswood	ebony	mahogany, Philippine	sycamore
beech	elm	mahogany, West African	walnut, English
birch	gum, red	maple, hard	willow
black walnut, American	hickory	maple, soft	zebrawood
butternut	holly	oak, red	



Drawing from *The Three Trees*, Rembrandt, 1643

List 6-6 Softwoods, Cone-Bearing Trees

Softwoods are coniferous trees that have a simpler cell structure, and are more porous than hardwoods. They are slightly easier to carve, but the grain is not so appealing as that of hardwoods.

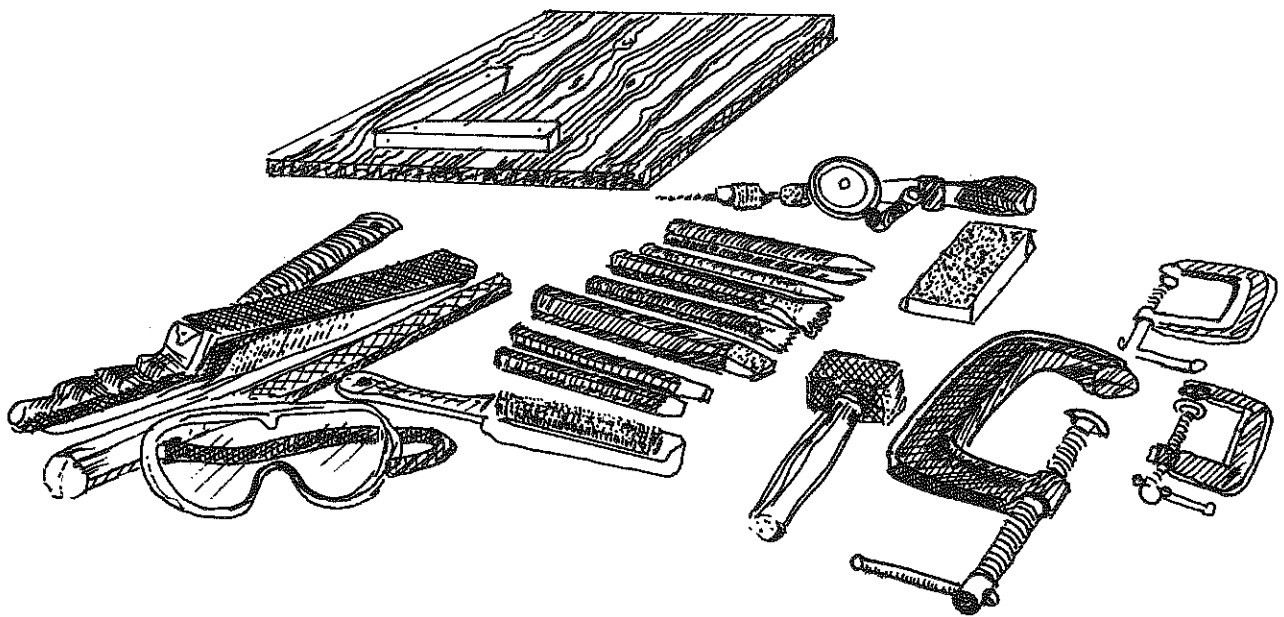
balsam	cypress	pine, yellow longleaf	pine, sugar
cedar	fir, Douglas	pine, northern white	redwood
cedar, Tennessee red	fir, white	pine, ponderosa	spruce

List 6-7 Tools and Equipment for Sculpture

GENERAL PURPOSE TOOLS

- bastard file** flat file used for straight or curved edge and surface filing
- C-clamps** clamps shaped like a C that greatly vary in size; used for holding material for carving
- center punch** used for beginning a hole to be drilled
- compass saw** used for cutouts of curved shapes in wood or plywood
- drawknife** a two-handled blade that allows you to shape wood quickly
- drill (electric or hand)** used to create openings when carving
- file cleaner** stiff wire brush for cleaning dust from files
- finishing files** all-purpose files with various shapes for finishing wood, stone, plaster, and metal
- hacksaw** a handsaw used primarily for cutting metal
- miter box** a guide for using a saw to cut angles accurately in wood or metal; used in framing
- perforated rasps** "open" rasps, used for plaster and soft stone such as alabaster or soapstone
- rasps** round, flat, half-round, plane-type, or perforated textured tools with handles
- rifflers** finishing tools for carving; varied angles and shapes on both ends of a steel shaft for reaching and finishing hard-to-reach areas
- saber saw** cutting tool for Styrofoam®, wood, brass, wire and nails
- scriber** tempered steel marker with fine points
- sharpening stone** used with oil for honing the edges of chisels
- vises** adjustable piece of equipment that holds work firmly while it is worked on; fits on a table

© 1998 Prentice Hall



Stone Sculpture Tools

CASTING EQUIPMENT

- mixing bowls and scraper** pliable bowls for mixing plaster; quick cleaning
- rubber mold-making kit (for casting rubber molds)** molds that are easily removed and reusable

EQUIPMENT FOR CLAY MODELING

- clay extrusion tool** tube with interchangeable tips for making unusual decorative details with clay
- fettling knife** long-bladed knife especially for carving clay

List 6-7 Continued

EQUIPMENT FOR CLAY MODELING (cont.)

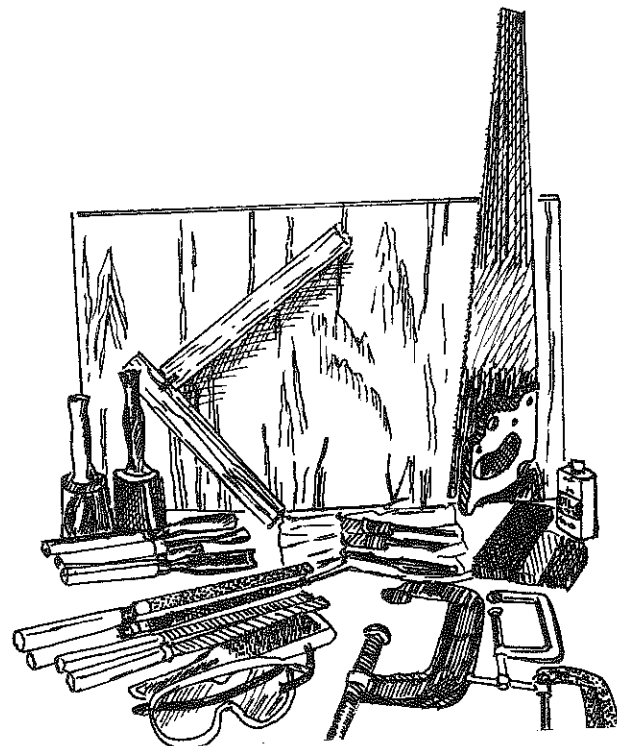
- greenware files** flexible files for cleaning greenware before firing; also for low-fire clay
- loop tools** these have loops made of heavy stainless steel ribbon in various shapes
- modeling tools** plastic or boxwood tools for creating detail in clay sculpture
- sgraffito and clean-up tool set** tools of varied shapes for cleaning hard-to-reach places
- straight needle** needle in handle for throwing, decorating, or leveling a thrown pot

STONE-CARVING TOOLS AND EQUIPMENT

- bush hammer** textured-face hammer for rounding stone and giving a texture to surface
- flat chisel** metal chisel with a straight-across broad head for a fine finish
- point chisel** metal chisel that comes to a point; different sizes from 1/4 to 1/2 inch
- powdered pumice** a fine powder used with cloth and water for final polishing
- sand bags** canvas bags filled with sand for supporting sculpture while carving
- stone hammer** short-handled iron hammer for use with iron stone-carving tools
- stone rasps** flat rasps with curved surface lines for smoothing stone
- tooth chisel** metal chisel with a broad head with numerous points; many sizes available
- wet and dry sandpaper** paper that comes in different grit densities; used wet for polishing stone or metal

WOOD-CARVING TOOLS AND MATERIALS

- bent gouge (sometimes called spoon gouge)** has a spoon-like end; available in deep and shallow
- bent knife** the blade is bent almost at a right angle
- chisel** flat-bladed tool for carving, used with a mallet
- coping saw** a saw with a deep neck and fine blade; may be used for interior cuts after a hole is drilled
- dividers** tool similar to calipers for checking on symmetry
- gouge** a carving tool with a rounded blade; gouges come with 1/8- to 1-inch tips
- mallet** a specially shaped tool for pounding on chisels to remove wood; often made of lignum vitae, the hardest wood
- palm-grip carvers** handles are rounded and the blade is short; suitable for wood relief
- parting tool** a V-shaped tool used for cutting lines and corners
- rasps** round, flat, half-round tools with handles; used for finishing prior to sanding
- salmon bend gouge** the entire blade is like a scoop, sizes from 1/16 to 3/4 inches
- sharpening slips** stones of various sizes and shapes to use with oil for sharpening chisels and gouges
- skew chisel** the end of a skew chisel is angled; a bent skew chisel has a spoon-like curve at the end
- vise** an adjustable clamp for a workbench that will hold wood for carving in place
- whittling knife** a knife with a short blade, sometimes at a right angle for whittling
- wood carver's adz** long-handled double-edged for roughing out a log
- wood chisels** wood- or plastic-handled steel tools for carving



Wood Sculpture Tools

List 6–8 Safety Reminders for Sculpture

- Always find a way to secure an object for carving: a vise, sandbag, C-clamps, a wood-carver's bench screw, or a V-board (made by screwing two 2 × 4-inch boards at right angles on a large base of plywood that you could either sit upon or clamp to a table).
- Never hold something between your legs for carving; chisels can slip!
- Don't use solvents or chemicals where there are flames.
- Lock chemicals and solvents in a metal cabinet.
- Never work by yourself in a room. Have a buddy system in case you need help.
- When carving with sharp tools, always wear goggles or a mask.
- When using electrical equipment such as a drill, band-saw, sander, table saw or torch, wear goggles or a mask, push sleeves above elbows, tie back long hair, and remove all jewelry.
- When working with materials such as foam, poured urethane, or other material with a strong odor, wear a mask and pour in the evening so fumes can dissipate.

List 6–9 Survey of Sculpture: Important Works of Art

AFRICAN

- Head of Queen Olokun*, Ife, c. 11th–15th century AD, Nigeria, British Museum, London
- Leopard*, c. 16th–17th century AD, British Museum, London
- Portrait of a Yoruba of Ancient Ife*, c. 15th century, British Museum, London
- Princess*, Benin c. 14th–16th century AD, Nigeria, British Museum, London

AMERICAN

American Colonial Sculpture

- Grasshopper Weathervane*, 1749, Shem Drowne, Faneuil Hall, Boston, Massachusetts
- Gravestone of John Foster*, 1681, unknown artist, Dorchester, Massachusetts
- Indian Weathervane*, 1716, Shem Drowne, Province House, Boston, Massachusetts
- Little Admiral*, c. 1750, unknown sculptor (possibly Shem Drowne), Old State House, Boston, Massachusetts

American Revolutionary Period

- Agriculture, Liberty, and Plenty*, 1791, John and Simeon Skillin, Jr., Yale University Art Gallery, New Haven, Connecticut
- Andrew Jackson*, 1834, John Frazee, Art Museum, Princeton University, Princeton, New Jersey
- Benjamin Franklin*, 1778, Jean-Antoine Houdon, St. Louis Art Museum, Missouri
- Benjamin Franklin*, 1785–1790, William Rush (attributed), Historical Society of Delaware, Wilmington
- Benjamin Franklin and George Washington*, (wax busts), c. 1725, Patience Lovell Wright, Maryland Historical Society, Baltimore

- Governor John Winthrop*, 1798, Samuel McIntire, American Antiquarian Society, Worcester, Massachusetts
- Hope*, c. 1790, attributed to John and Simeon Skillin, Jr., Henry Francis du Pont Winterthur Museum, Winterthur, Delaware
- Sacred Cod*, date unknown, John Welch, Boston State House, Boston, Massachusetts
- Thomas Jefferson*, 1785, J. A. Houdon, New York Historical Society, New York City

The American Period of Expansion

- Andrew Jackson*, 1835, Hiram Powers, Metropolitan Museum of Art, New York City
- Baltimore Washington Monument*, 1814–1842, Robert Mills, Baltimore, Maryland
- Daniel Webster*, 1858, Hiram Powers, State House, Boston, Massachusetts
- George Washington*, 1814, William Rush, Philadelphia Museum of Art, Pennsylvania
- George Washington*, 1832–1841, Horatio Greenough, Smithsonian Institution, Washington, DC
- The Greek Slave*, 1843, Hiram Powers, Yale University Art Gallery, New Haven, Connecticut
- John Trumbull*, 1834, Robert Ball Hughes, Yale University Art Gallery, New Haven, Connecticut
- Schuylkill Freed*, c. 1828, William Rush, Philadelphia Museum of Art, Pennsylvania
- Water Nymph and Bittern*, c. 1828, William Rush, Philadelphia Museum of Art, Pennsylvania

American Victorian Sculpture

- Bacchante and Infant Faun*, 1894, Frederick MacMonnies, Philadelphia Museum of Art, Pennsylvania