

Sculpture & 3D Form — Workbook

This workbook turns the course into studio practice. Each section pairs hands-on building, carving, and casting exercises with planning worksheets and check-off lists so you move deliberately from a wire armature to a finished, documented sculpture. Use the templates to plan a piece, log a plaster mix that works, and record each finished work — the habits that turn a one-off experiment into a repeatable practice. Work safely throughout: a fitted respirator and wet cleaning are not optional around clay, plaster, and stone dust.

How Sculpture Works — Materials, Mass, and the Two Processes

Train the sculptural eye, choose process and material for an idea, and set up a safe workspace.

Exercise: The Rotation Drill — Seeing Mass, Plane, and Silhouette

Pick three small objects (a pebble, your own fist, a toy figure). Rotate each slowly for several minutes under a single side light. Out loud or on paper, name the big masses, track how the silhouette changes, and find where planes turn from light into shadow. Then sketch one object's silhouette from four different angles.

- Which object had the most interesting silhouette change as it turned, and which was dull and symmetrical?

- Where on the fist do flat planes meet at an edge, and how does the side light reveal those turns?

- When you squint, do the big masses still read, or does detail take over?

- Did any angle of an object look flat or confusing? What would you change if you were building it?

Worksheet: Idea-to-Process Planner

Take one sculpture idea and decide, deliberately, how to make it. Fill this in before touching any material.
Sculpture idea / subject in one line

Process: additive / subtractive / cast / assemblage

Material: clay (oil or water) / plaster / wire / mixed media

Why this process suits the idea (reversible vs committed)

In the round or relief

Rough finished size (height x width x depth)

Is this a maquette/study or a finished piece

Main viewing angle(s) to resolve

Worksheet: Studio Kit and Safety Audit

List what you own and what you still need before starting, with a rough cost for each gap, and confirm your safety setup.

Work surface and turntable / banding wheel

Main directional light source

Clay owned (type, brand, amount)

Modelling tools (wooden, wire-end/loop)

Armature wire (material and gauge)

Plaster on hand (type and amount)

Rasps / Surform / rifflers

Wire-working pliers and cutters

Respirator (N95 / P100) and eye protection

Wet-clean / HEPA-vacuum method confirmed

Gaps to buy and estimated cost

Checklist: Safe-to-Start Studio Setup

- Fitted respirator on hand for any dust, dry powder, or carving
- Wet-clean or HEPA-vacuum plan in place (never dry-sweep)
- No food or soft furnishings in the dust zone
- Plaster kept well away from all drains
- One dominant side light positioned across the work
- Turntable or stand so the piece rotates without handling
- Eye protection ready for carving, wire-cutting, and soldering
- Understood: setting plaster heats up — never cast against skin

Additive Sculpture — Armatures and Modelling in Clay and Wire

Build a stable skeleton, model the figure big-to-small, and draw gesture in space with wire.

Exercise: Build and Test an Armature

Bend an aluminium-wire armature to a simple figure or animal gesture and anchor it to a wood base. Pose it to the line of action FIRST, before any clay. Bulk thick areas with foil. Then hang or cantilever a limb and leave it overnight with a little clay on it.

- Did you fix the gesture and proportion in bare wire before adding clay? What did you adjust?

- Is any part of the armature close to breaking the intended surface? Where, and how will you keep it buried?

- After the overnight test, did the limb hold or sag? What does that tell you about the wire gauge or anchoring?

- Where did you bulk with foil, and why there?

Exercise: Model Big-to-Small

Model a small head or figure over your armature following the sequence: primary masses, then planes, then secondary forms, then surface last. Turn the piece every fifteen minutes and judge from arm's length. Resist finishing any one feature early.

- Were you tempted to detail one feature before the whole form was right? How did you stop yourself?

- Which planes were hardest to find and resolve — and did changing the light help you see them?

- How even is the development across all sides? Is the back as resolved as the front?

- If using water clay: is it hollowed to an even 1-2 cm wall and kept damp between sessions?

Exercise: Wire Gesture Study

Using one or two gauges of aluminium wire, build a figure in motion (running, leaping, reaching) as line in space. Start from a single gesture line, add limbs with tight joins, and use coils to suggest volume. Aim for the fewest lines that still read.

- How few wires could still convey the movement? Which lines were redundant?

- Does the figure read from the side as well as the front, or is one view a tangle?

- How is the empty space (negative space) doing part of the work?

- Did you file or tuck every sharp cut end?

Checklist: Pre-Clay Armature Check

- [] Gesture and proportion resolved in bare wire
- [] Armature anchored solidly to a base, cannot tip or twist
- [] Armature sits smaller than the finished form everywhere
- [] Thick masses bulked with foil to avoid heavy solid clay
- [] Plan made to remove armature and hollow if firing water clay
- [] Correct clay chosen for the goal (oil for studies, water for firing)
- [] Light positioned to read planes before modelling begins

Subtractive Sculpture and Casting — Carving and the Mould

Carve soft material rough-to-fine, capture a form in a mould, and cast a clean plaster positive.

Exercise: Carve a Plaster or Soapstone Block

Cast a small plaster brick (or get a soapstone offcut). Draw your design on every face, mark the highest points, then carve rough-to-fine: coarse rasp for bulk, finer rasps/rifflers to refine, abrasives to finish. Stay outside your lines and take less with each pass. Carve wet and masked.

- Where were you tempted to cut too deep too early? How did leaving extra material save you?

- Which tool in the sequence did the most useful work, and at what stage?

- How did wetting the work and wearing a respirator change the dust in the air?

- What, if anything, did you cut away that you wished you could put back — and what will you do differently?

Worksheet: Mould Plan

Plan a mould of one small original before you mix anything. Resolve the parting line and the release first. Original form to be moulded

One-part or two-part (any undercuts?)

Where the parting line runs

Undercuts present and how handled (avoid / parting line / flexible mould)

Mould material (silicone / alginate / plaster)

Release agent to be used

Registration keys planned (Y/N and where)

Cast material intended (plaster / resin)

Exercise: Mix and Pour a Plaster Cast

Prepare a clean, released, clamped mould BEFORE mixing. Add plaster to water (not the reverse), sift until an island sits proud, slake briefly, mix without whipping air, then pour or slush-cast. Tap out bubbles, let it fully set and cool, demould gently, and fettle the seam.

- Did you add plaster to water and let it slake? How did the 'island' tell you the ratio was right?

- Solid or hollow cast — and why did you choose it for this piece?

- Did the cast heat up as it set? How long until it was cool enough to open?

- Where did bubbles or a seam line appear, and how did you fettle them out?

Checklist: Carve / Mould / Cast Safety and Quality Check

- Respirator worn for all carving, sanding, and dry powder
- Carving done wet where possible to suppress dust
- Block braced; both hands behind every chisel edge
- Parting line and release agent decided before moulding
- Registration keys cut so mould halves seat in one position
- Mould prepped and clamped before plaster was mixed
- Plaster added to water, slaked, mixed without whipping air
- Cast left to fully set and cool before demoulding
- No plaster waste poured down any drain

Composition, Finishing, and Presenting Your Work

Resolve every viewpoint, finish the surface convincingly, then mount, photograph, and document the piece.

Exercise: Resolve It in the Round

Put a finished or near-finished piece on a turntable and rotate it slowly. At each main angle, judge it against the five principles: line of action, contrapposto, negative space, balance/asymmetry, rhythm. Mark any 'dead' angle and adjust until at least three or four views work.

- What is the dominant line of action, and does it carry through the whole form?

- Which angle was weakest, and what made it go flat — silhouette, balance, or empty space?

- Where does negative space let light pass through the form?

- Does the silhouette change interestingly as the piece turns, or stay static?

Exercise: Apply a Patina or Finish

Finish one piece for its material: seal and faux-patina a plaster cast (dark base, dry-brush highs, glaze the recesses, seal and wax), or sand stone through grits, or finish wire/assemblage with a protective coat. Follow the rule: dark in the hollows, light on the raised planes.

- Did sealing first stop uneven absorption? What happened where you skipped or rushed it?

- How did dry-brushing the raised forms only change the read of age and depth?

- Was the result more convincing with restraint or with heavy coats? Why?

- Record your exact recipe (sealer, colours, wax) so you can repeat or repair it.

Worksheet: Presentation & Photography Plan

Plan how the finished piece meets the world and how you will photograph it before it leaves the studio.

Base / plinth material and height

Mounting method (pin / set in plaster / hidden bolt / epoxy)

Designed orientation (rising / leaning / reclining)

Main light position (side, with fill)

Background (colour, seamless?)

Angles to shoot (front, two three-quarter, profile, detail)

Grayscale frame to confirm form reads? (Y/N)

Checklist: Finish, Mount, Document, Store

- Surface finished per material; recipe written down
- Base matched to the piece and mounted securely
- Piece sits at the designed orientation, cannot tip
- Photographed with side light on a plain seamless background
- Multiple angles plus a detail shot captured at the work's level
- Recorded: title, date, materials, process, dimensions, edition
- Cast editions numbered; mould labelled and protected
- Piece padded for storage/transport against chips and bends

Your Action Plan

1. Assemble a starter kit: a block of oil-based clay, wooden and wire-end tools, aluminium armature wire, a bag of pottery plaster, rasps and rifflers, wire pliers and cutters, a fitted respirator, and a wood base — plus a box of found objects.
2. Do the rotation drill until you can name mass, plane, and silhouette on any object at a glance, and set up one dominant side light to work under.
3. Build a stable wire armature anchored to a base, fixing the gesture before any clay, and bulk thick areas with foil.
4. Model a small head or figure big-to-small — masses, then planes, then secondary form, then surface last — turning it constantly.
5. Make a wire gesture study to learn line of action and negative space with the fewest possible lines.
6. Carve a soft plaster or soapstone block rough-to-fine, masked and wet, drawing the design on every face and leaving extra material until late.
7. Plan a mould (parting line, release, registration keys), make it on a simple form, then mix plaster into water and cast a clean positive.
8. Resolve a finished piece in the round on a turntable against the five composition principles, killing any dead angle.
9. Seal and patina (or sand and polish) the surface — dark in the hollows, light on the highs — and record the exact recipe.
10. Mount the piece on a matched base, photograph it with side light from several angles, and log it (title, date, materials, process, dimensions) before it leaves the studio.

