STRETCHLEARN · WORKBOOK

Cinema 4D Basics — Workbook

This workbook turns the course into a hands-on build you can repeat for any motion-graphics shot. You will navigate the interface, model with primitives and splines, animate a MoGraph reveal, light and render multi-pass, and hand off to After Effects. Fill in the worksheets and templates as you build one real scene so you finish with both the skill and a rendered, composited result.

The Cinema 4D Interface and Scene Structure

Get fluent with viewport navigation, the Object Manager hierarchy, and the difference between parametric objects and generators.

Exercise: Navigation Muscle Memory

Add a single Cube and spend ten minutes doing nothing but moving the camera. Drill the 1/2/3 orbit, pan, and dolly moves until they are automatic, and practise framing with H and S.

• Which of the three moves (orbit, pan, dolly) felt least natural, and how will you drill it?

• When did four-view (Top/Front/Right/Perspective) help you understand the shape better than perspective alone?

• What does pressing H do versus selecting an object and pressing S?

Worksheet: Scene Hierarchy Plan

Before building, sketch how your scene will be organised in the Object Manager. Name everything clearly and decide what gets grouped under a Null.

Hero object name

Light group name (Null)

Number of lights planned

Ground/background object name

Master controller Null name

Objects to group with Alt+G

Tags needed (Material/Phong/Compositing)

Checklist: Non-Destructive Habits Check

[ ] Every object renamed from default (no Cube.1, Cube.2 left)
[ ] Related objects grouped under a named Null
[ ] Parametric objects kept editable (not pressed C unless required)
[ ] Fillet enabled on hard-edged primitives for a light-catching edge
[ ] Generators used (Subdivision/Extrude) instead of raw meshes where possible
[ ] Phong Tag checked on smooth surfaces
[ ] Incremental scene file saved (scene_v01)

Modelling with Primitives and Splines

Build objects from primitives and deformers, draw and close splines, and convert them to 3D with Extrude, Lathe, Sweep, and Loft.

Exercise: What Primitives Is It Made Of?

Pick three real objects around you. For each, break it down into the Cinema 4D primitives and generators you would combine to build it before modelling a single one.

• Object 1 and the primitives/generators it breaks down into

_____

• Which object is best built with a Lathe from a half-profile, and why?

_____

• Where would a deformer (Bend, Twist, Taper) save you from modelling by hand?

_____

Worksheet: Spline-to-3D Build Sheet

For each shape you model, record the source spline and the generator that turns it solid. Confirm closed splines are actually closed and that segment counts are high enough to deform smoothly.

Shape name

_____

_____

Source spline (Text/Circle/Pen/imported .ai)

_____

_____

Closed spline? (Y/N)

_____

_____

Generator used (Extrude/Lathe/Sweep/Loft)

_____

_____

Depth or radius value

_____

_____

Bevel/Fillet cap on? (Y/N)

_____

_____

Segments adequate for deform? (Y/N)

_____

_____

Checklist: Clean Modelling Pass

[ ] Fillet/rounded edges added to hard primitives
[ ] Enough Height/Width Segments added before any deformer
[ ] Deformer set to Fit to Parent before adjusting Strength
[ ] Closed splines confirmed via Close Spline setting
[ ] Sweep hierarchy correct (cross-section first, path second)
[ ] Source splines still editable and updating the 3D live
[ ] No object made editable (C) unless a tool genuinely required it

Motion with MoGraph: Cloners and Effectors

Clone an object into an array, drive it with effectors masked by fields, and animate a controller-based reveal.

Worksheet: Cloner Setup Sheet

Record the Cloner configuration for your animation. Keep the source object low-poly if the clone count is high so the Viewport stays responsive.

Source (clone) object

Cloner Mode (Linear/Grid/Radial/Object)

Clone count (per axis)

Spacing or radius

Approx total clones

Source poly count (low for high counts? Y/N)

Object-mode target (if used)

Exercise: Effector and Field Wave

Add a Random effector for variation, then a Plain effector with a Linear Field, and animate the field sweeping across your clones to make a wave of motion.

• Which Random parameters (Position/Scale/Rotation) sold the variation best?

• As you moved the Linear Field, where did the wave start and end across the array?

• What changed when you stacked the Random and Plain effectors together?

Worksheet: Animation Timing Sheet

Log the keyframes that drive your reveal. Animate the controller (the field or effector), not each clone, and always shape the timing in the F-Curve.

Frame rate (fps)

Reveal start frame

Reveal end frame

What is keyframed (Field position / effector strength)

Ease-in applied? (Y/N)

Ease-out applied? (Y/N)

Master Null used as controller? (Y/N)

Checklist: MoGraph Reveal Check

[ ] Cloner built and source object kept low-poly
[ ] Random effector adds natural variation
[ ] Plain effector linked to a Field for masking
[ ] Field animated to create a sweeping reveal
[ ] Motion eased in and out in the F-Curve (not linear)
[ ] Animation driven by a controller, not per-clone keys
[ ] Incremental versions saved as the animation grew

Lighting, Rendering, and the After Effects Handoff

Light with a three-point rig, render an image sequence with multi-pass alpha and depth, and composite the result in After Effects.

Worksheet: Three-Point Lighting Sheet

Record your lighting rig in whichever engine you chose. Bigger Area lights give softer shadows; balance Fill to roughly a third of the Key.

Render engine (Standard/Redshift)

Key light type and angle

Key intensity

Fill intensity (approx 1/3 of key)

Rim light position

HDRI used for ambient/reflections? (Y/N)

Key material roughness value

Exercise: Multi-Pass Render Test

Render a few sample frames as an image sequence with Multi-Pass on. Confirm the alpha is transparent and the depth pass reads correctly before committing to the full range.

• Which passes did you enable (Beauty, Alpha, Depth, AO, Object Buffer)?

• Did the alpha channel come through transparent, ready for compositing?

• What anti-aliasing or lighting issue did the sample frames catch before the full render?

Worksheet: Render Output Log

Record the exact output settings so you can reproduce or resume the render. Always render an image sequence for animation, never a single movie file.

Resolution (px)

Frame range

Save format (PNG alpha / OpenEXR)

Image sequence? (Y/N)

Passes enabled

Object Buffer assigned via Compositing Tag? (Y/N)

Output folder and filename token

Checklist: After Effects Handoff Check

[ ] Rendered as a numbered image sequence with alpha
[ ] Imported into After Effects as a sequence (one clip, not stills)
[ ] Background reads transparent over a placed footage layer
[ ] No fringe or halo at the alpha edges
[ ] Depth pass used for depth-of-field without re-rendering
[ ] Camera data brought across (Cineware / External Compositing Tag) if camera moves
[ ] Final graded, polished, and exported in the delivery codec

Your Action Plan

1. Open Cinema 4D, learn the four-area layout, and drill 1/2/3 viewport navigation until it is automatic.
2. Plan and name your scene hierarchy in the Object Manager, grouping related objects under named Nulls.
3. Model your hero object from primitives and deformers, adding fillets and enough segments to deform cleanly.
4. Draw or import splines, close them, and convert to 3D with Extrude, Lathe, or Sweep, keeping everything non-destructive.
5. Build a MoGraph Cloner from a low-poly source object and choose the right mode (Grid, Radial, or Object).
6. Add a Random effector for variation and a Plain effector with a Linear Field for a controlled reveal.
7. Animate the field across the clones, then ease the timing in the F-Curve so the motion accelerates and lands.
8. Light the scene with a three-point rig in Standard or Redshift and assign materials with the right roughness.
9. Set Render Settings to an image sequence with Multi-Pass (Beauty, Alpha, Depth, AO) and render sample frames first.
10. Import the sequence into After Effects, composite over a background using the alpha, refine with the depth pass, grade, and export.