

2D Character Animation — Workbook

This workbook turns the course into a finished, lip-synced character clip. Work through one section per module, filling the worksheets and ticking the checklists as you build your own puppet. Use the editable templates to plan pivots, map your mouth set, and time your dialogue frame by frame, then follow the action plan to ship a vertical short.

From Artwork to a Riggable Character

Prepare and separate your character art into the clean, named, pivot-planned parts a rig requires.

Exercise: Dissect a Character

Pick a simple character (yours or a reference) and list every part that must move on its own. Then mark where each part bends.

- List each separate layer your character needs and the body region it belongs to.

- For each moving part, name the exact joint where its anchor point should sit.

- Identify two places where you must over-draw an overlap so no gap appears when a limb rotates.

- Decide: is this character better suited to puppet rigging or frame-by-frame, and why?

Worksheet: Layer and Pivot Plan

Fill one row per body part before you open any rigging tool. Leave the part count total blank until every row is listed, then count them yourself.

Layer name (plain words)

Body region group

Front-to-back depth order number

Anchor point joint location

Overlap to over-draw (pixels)

Total number of parts (fill in last)

Checklist: Art-Prep Readiness

- Every moving part is on its own named layer in plain words
- Layers are stacked in correct front-to-back depth order
- Each part is drawn fully behind its overlap so rotation reveals no gap
- Canvas is built at least 50 percent larger than final delivery size

- Eyes, brows, and mouth are separate layers for facial control
- File saved as layered PSD or vector AI ready to import

Rigging in Adobe Animate and After Effects

Build a working puppet rig with bones, inverse kinematics, and facial controls in your chosen tool.

Exercise: Rig a Limb Two Ways

Take one arm and rig it first as nested graphic symbols, then with an IK approach. Compare how each feels to pose.

- Which method let you pose the arm faster, and which gave a more natural elbow bend?

- Where did you set the anchor for the upper arm, lower arm, and hand?

- If you used DUIK or RubberHose, which controller did you animate instead of the raw layer?

- Note one thing that broke and what fixed it (usually an anchor point or a rig expression).

Worksheet: Rig Tool Decision Sheet

Decide which tool and method you will use for each part of your rig and why. Fill the reuse-estimate column with your own guess.

Body part

Tool (Animate / After Effects)

Method (graphic symbol / bone IK / RubberHose / DUIK)

Controller you will animate

Reason for this choice

Estimated times you will reuse this rig

Checklist: Facial Control Build

- Five head-turn extremes positioned for Joysticks 'n Sliders (center, up, down, left, right)
- Joystick controller created and tested by dragging through the turn
- Blink slider built with eyelid closed and open extremes
- Eyebrow raise slider built and linked
- Mouth set stored inside one swappable symbol or layer group
- All animation done on controllers, never on raw rigged layers

Timing, Spacing, and the Principles of Motion

Apply timing, spacing, easing, and overlap so your puppet reads as a living character.

Exercise: The Bouncing Ball Diagnostic

Animate a simple ball bounce, the classic timing test. Then push the spacing and easing until it feels weighted.

- Where did you bunch the frames (slow) and where did you spread them (fast)?

- What did pressing F9 (Easy Ease) change, and what did you adjust further in the Graph Editor?

- Add a squash on impact and a stretch in the fast fall: how many frames did each last?

- Compare your linear first attempt to the eased final: describe the difference in weight.

Worksheet: Motion Beat Planner

Plan one character action shot by shot. Leave the duration-in-seconds column blank and compute it yourself from frames and fps.

Action beat (e.g. anticipation, main action, settle)

Start frame

End frame

Frame count for this beat

Easing applied (ease-in / ease-out / both / linear)

Duration in seconds (frames divided by fps, fill in yourself)

Checklist: Principles Applied

- Frame rate chosen and project set (24, 25, or 30 fps)
- Decided on ones or twos for the main action
- Spacing is wide in the middle and tight at the ends, not even
- Anticipation added before the main action
- Follow-through on loose elements settles a few frames after the body
- Overlap staggers parts by 1 to 3 frames so no two stop on the same frame

Lip-Sync and Delivering Short-Form Content

Sync the mouth to dialogue and export a vertical clip to platform spec.

Exercise: Read the Track

Record or source a short line of dialogue, import it, and step through it frame by frame to read the sounds.

- Write out the line and mark the strong accents (the MBP closures and the open vowels).

- For three accented sounds, note the frame number and the mouth shape you placed.

- Did placing each mouth 1 frame before the sound peak improve the sync? Describe it.

- Which secondary motion did you add (brow raise, blink, head nod) and on which word?

Worksheet: Export Spec Sheet

Confirm your delivery settings for each target platform before rendering. Fill any cell you are unsure of after checking the current platform docs.

Target platform (Reels / TikTok / Shorts)

Resolution

Aspect ratio

Frame rate

Codec and container

Max clip length you will respect

Bottom safe-zone pixels kept clear

Checklist: Delivery Pre-Flight

- Composition set to 1080 by 1920, 9:16 vertical
- Exported H.264 MP4 via Media Encoder or equivalent
- Key action and text kept inside the central 80 percent safe zone
- Audio mixed so dialogue sits clearly above music
- Clip reads and communicates with the sound muted
- Final length within the target platform limit

Your Action Plan

1. Choose or draw a simple character and separate it into named layers in Photoshop or Illustrator, over-drawing every overlap.
2. Plan and mark each pivot on the correct joint before opening any rigging tool.
3. Build the body rig in your chosen tool: nested symbols or bone IK in Animate, or DUIK and RubberHose in After Effects.
4. Build the face with Joysticks 'n Sliders for head turn, plus blink and brow sliders, and a swappable mouth set.
5. Animate a short test action applying spacing, easing, anticipation, follow-through, and overlap.
6. Record a line of dialogue and read the track frame by frame, noting frame numbers and mouth shapes.
7. Animate the lip-sync hitting the accents, placing each mouth 1 frame before its sound peak.
8. Layer secondary motion: blinks every 3 to 5 seconds, brow raises on emphasis, head nods on sentence ends.
9. Render to 1080 by 1920 H.264 MP4 and check the central 80 percent safe zone.
10. Post one vertical short and review retention to learn which beats held attention.

