STRETCHLEARN · WORKBOOK

Blender for Product Visualisation — Workbook

This workbook turns the course into a repeatable modelling pipeline you can run on any product. As you work through it you will set up a reference-driven file, subdivision-model a clean form, unwrap and procedurally shade it, and export a hero still plus a looping turntable. Fill in the worksheets and templates against a real product so you finish with both the skill and a delivered model, still, and turntable.

References, Units, and Reference-Driven Setup

Configure Blender for real-world product work, import accurate CAD and SVG references, and block out correct proportions before any detail.

Exercise: Choose and Gather Your References

Pick a real product you can measure or find a full spec for, then collect every reference you can: a front and side photo, any dimensions, and a vector logo or label. Decide which references you will trace and which you will model from directly.

• What product are you modelling, and what are its real width, depth, and height in millimetres?

• Which references are flat images (to model over) and which are vector or CAD (to model from)?

• Where will the product's real artwork (logo, label) come from, and is it available as an SVG?

Worksheet: File Setup Sheet

Record the configuration of your starter file so every new product begins the same correct way. Confirm units and clip range before importing anything.

Unit System (Metric Y/N)

Length unit (mm / m)

Unit Scale (should be 1.0)

Camera Clip Start (m)

Add-ons enabled (Images as Planes, Node Wrangler, LoopTools)

Default cube deleted? (Y/N)

Startup file saved? (Y/N)

Worksheet: Reference Import Log

Log each reference you bring in, how it was imported, and whether it has been scaled to the product's real dimensions.

Reference name

Type (front photo / side photo / SVG / CAD)

Import method (Images as Planes / Import SVG / Import OBJ-STL)

Scaled to real size? (Y/N)

Set to display In Front? (Y/N)

Locked from selection? (Y/N)

Checklist: Setup and Block-Out Readiness

[ ] Units set to Metric, Unit Scale 1.0, Length in millimetres
[ ] Camera Clip Start lowered (around 0.001 m) for close zoom
[ ] Required add-ons enabled (Images as Planes, Node Wrangler, LoopTools)
[ ] Front and side references imported, upright, and scaled to real size
[ ] SVG logo or label imported as a curve and scaled
[ ] References grouped in a Reference collection with render visibility off
[ ] Product blocked out with primitives matching the silhouette in two views
[ ] Each blocking object named (Body, Cap, Base, etc.)

Subdivision-Surface Modelling

Refine the block-out into a smooth product form with clean topology, controlled edges, and symmetry.

Exercise: Cage-to-Surface Study

Add a Subdivision Surface modifier to your main body, then move cage vertices while watching the smooth result update. Toggle the On Cage display so you can see both at once and learn how spacing controls curvature.

• How few cage vertices can hold your main body shape and still match the reference?

• Where did even edge spacing improve the curve, and where did bunched edges create a tighter curve?

• Did any triangle or n-gon pinch the surface? Where, and how did you make it a quad?

Worksheet: Edge Control Plan

List the edges that must read as sharp versus soft, and how you will control each one (support loops, Bevel modifier, or crease). Add a small consistent bevel everywhere for manufactured realism.

Edge / feature name

Sharp or soft?

Method (support loops / Bevel modifier / crease)

Bevel width at product scale (mm)

Bevel segments

Modifier order correct (Bevel above Subdivision)? (Y/N)

Worksheet: Mirror and Detail Sheet

Record your symmetry setup and the detail features you add. Keep the Mirror modifier live until you genuinely must break symmetry.

Symmetrical product? (Y/N)

Mirror axis (X / Y / Z)

Origin on the line of symmetry? (Y/N)

Clipping enabled on Mirror? (Y/N)

Detail features added (seams / buttons / screen / deboss)

Features faked in shader instead of modelled

Checklist: Modelling Quality Pass

[ ] Mesh is mostly quads, with poles hidden on inconspicuous areas
[ ] Subdivision cage is as light as possible for the shape
[ ] Sharp edges held by support loops or a weighted Bevel modifier
[ ] A small consistent edge bevel applied for a realistic highlight
[ ] Mirror modifier used for symmetry, with Clipping on
[ ] Detail features (seams, buttons, screen) have support loops near new edges
[ ] Shade Smooth applied and the surface reads clean with no ripples

UV Unwrapping and Procedural Shading

Unwrap the model with minimal distortion, build flexible procedural materials, and place crisp labels and logos.

Exercise: Seam and Stretch Audit

Mark seams along natural product joins, unwrap, and turn on the Stretching overlay. Move seams until important areas (especially any label area) read mostly blue rather than red.

• Where did you place seams so they hide on the back or underside of the product?

• Which area showed the most stretching (red), and what seam change fixed it?

• Is your label area a single undistorted island ready for artwork?

Worksheet: Procedural Material Sheet

For each material on the product, record the Principled BSDF values you used. Keep Metallic at a clean 0.0 or 1.0 and tune Roughness as the main look dial.

Material name (e.g. glossy body)

Surface type (plastic / metal / glass)

Base Colour

Roughness (0.0-1.0)

Metallic (0.0 or 1.0)

Transmission (for glass, 0.0-1.0)

IOR (glass, around 1.45)

Procedural variation added (Noise into Roughness / Bump)? (Y/N)

Saved to asset library? (Y/N)

Worksheet: Label and Decal Sheet

Record how each piece of printed artwork is applied. Use your UVs for full labels and an empty-driven projection for small logos.

Artwork name (label / logo / regulatory text)

Method (UV-mapped label / UV Project decal)

Source artwork (SVG / high-res PNG)

Color Space set to sRGB? (Y/N)

Blended via alpha so only print shows? (Y/N)

Label roughness differs from base surface? (Y/N)

Embossed or debossed? (Y/N)

Checklist: Unwrap and Shading Check

[ ] Seams placed on hidden areas (back, underside, inside handles)
[ ] Stretching overlay reads mostly blue across important areas
[ ] Label area is a single undistorted island
[ ] Every material has Metallic at exactly 0.0 or 1.0
[ ] Roughness tuned per surface for plastic, metal, or glass
[ ] Glass parts use Transmission 1.0 with IOR around 1.45
[ ] Subtle procedural variation added so surfaces are not sterile
[ ] Labels and logos are crisp at full zoom from vector or high-res artwork

Cameras, Stills, and Turntable Output

Frame a hero still, build a clean camera-orbit turntable, and export both to web-ready specifications.

Exercise: Hero Angle Test

Set an 85 mm camera and try several angles, three-quarter front, straight-on, slightly low, and top-down, capturing each. Pick the one that best shows your product as three-dimensional and on-brand.

• Which angle best showed the product's form and key features?

• What focal length and f-stop kept proportions honest and the product sharp?

• Where did you place the hero detail relative to the rule-of-thirds guides?

Worksheet: Turntable Setup Sheet

Record your camera-orbit turntable settings. Orbit the camera via a parented empty, use Linear interpolation, and end one frame before the loop closes.

Empty placed at product centre / origin? (Y/N)

Camera parented to empty? (Y/N)

Start Z rotation (degrees) / frame

End Z rotation (360) / frame

Interpolation set to Linear? (Y/N)

Playback End one frame before loop point? (Y/N)

Frame rate (fps)

Loop length (seconds)

Worksheet: Export Settings Log

Log the exact output settings for both deliverables so you can reproduce or re-export them. Render animation as a PNG sequence first, then assemble to video.

Still resolution (px)

Still format (PNG 16-bit / JPEG)

Transparent background on still? (Y/N)

Turntable resolution (px)

Samples per frame

Denoiser used

Approx render time per frame

Rendered to PNG sequence first? (Y/N)

Final video format (MP4 H.264 / WebM alpha)

Checklist: Delivery Spec

[ ] Hero still rendered at 2000 x 2000 px and saved as a 16-bit master
[ ] Camera framed at 85-100 mm with the product on a thirds line
[ ] Turntable orbits the camera, not the product, so lighting stays fixed
[ ] Orbit uses Linear interpolation for an even spin
[ ] Loop ends one frame before closing to avoid a stutter
[ ] Animation rendered as a PNG sequence, then assembled to MP4
[ ] Denoiser enabled to keep per-frame render time reasonable
[ ] Editable .blend saved with model, materials, camera, and turntable

Your Action Plan

1. Configure a starter Blender file: Metric units at 1.0 scale, millimetres, a low camera clip start, and the Images as Planes, Node Wrangler, and LoopTools add-ons.
2. Import front and side references as planes and any SVG logo as a curve, scale all to real dimensions, and lock them in a hidden Reference collection.
3. Block out the product with primitives, matching the silhouette in front, side, and top views before adding any detail.
4. Add a Subdivision Surface modifier and shape a light, all-quad cage so the smooth surface matches the reference.
5. Hold sharp edges with support loops or a weighted Bevel modifier, add a small consistent edge bevel everywhere, then Mirror symmetrical products with Clipping on and add seams, buttons, and debosses with support loops near each new edge.
6. Mark seams on hidden joins, unwrap, and use the Stretching overlay to keep important areas (especially label areas) low-distortion.
7. Build procedural materials on the Principled BSDF: set Metallic to 0.0 or 1.0, tune Roughness, use Transmission and IOR for glass, and add subtle noise variation.
8. Apply labels via UVs and small logos via an empty-driven UV Project decal, using SVG or high-res artwork so branding stays crisp.
9. Frame an 85 mm hero still at a three-quarter angle, render it at 2000 x 2000 px, and keep a 16-bit master.

10. Build a camera-orbit turntable (camera parented to a centre empty, Z rotation 0 to 360 on Linear interpolation, ending one frame before the loop), render it as a denoised PNG sequence, assemble to MP4, and save the editable .blend.