

# Isometric Illustration — Workbook

This workbook turns the course into reps. You will set up a real 30-degree grid, build modular objects, lock a consistent light model, and ship a finished tech-explainer scene. Work through each section's exercises in order, fill the worksheets as you go, and keep your saved swatches and components so every later piece stays on-style.

## The Isometric Grid and Why 30 Degrees

Set up true 30-degree grids in both tools and prove you can tell real isometric from the fakes.

### Exercise: Spot the Projection

Collect three isometric-style images from Dribbble, Behance, or app store screenshots. For each, measure the angle of the long 'horizontal' edges of any cube and the internal angles of a top face. Decide whether each is true isometric (30 degrees, 120/60 top), dimetric (~26.57 degrees), or fake. Write your reasoning, not just the verdict.

- What angle are the long edges in image 1, 2, and 3?

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- Which image is true isometric, and what evidence proves it?

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- Which image, if any, mixes angles inconsistently and why does that read as 'off'?

### Exercise: Build Both Grids

Create a true 30-degree grid in Illustrator using the SSR Action (or the manual Scale 86.602 / Shear / Rotate method) AND a usable iso grid in Figma using a plugin or a pasted grid PNG. Save each as a locked, dimmed background layer named GRID. Take a screenshot of both.

- Which Illustrator method did you use, SSR or manual transforms, and why?

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- What did you use to get a 30-degree reference into Figma, since its native grids are only square or column?

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- At what opacity did you set each grid so it guides without fighting your art?

### Worksheet: Grid Setup Record

Fill this in once per tool so you can recreate your exact setup later without re-deriving it.

Tool (Illustrator / Figma)

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Grid method used (SSR Action / manual transforms / plugin / pasted PNG)

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Long-edge angle confirmed (degrees)

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Working scale (1x / 2x / 3x of final)

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Snapping settings turned on (Smart Guides / Snap to Point)

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Grid layer name and opacity

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### Checklist: Grid-Ready Checklist

- Long edges measure exactly 30 degrees from horizontal
- A test cube's top face shows 120 and 60 degree internal angles
- Smart Guides and snap-to-point are enabled
- Grid sits on its own locked layer at 15 to 20 percent opacity
- Working canvas is set to 2x or 3x the final export size

## Constructing Objects on the Grid

Turn flat shapes into solid, editable isometric objects and start a reusable prop kit.

### Exercise: Cube to Box to Prop

Build a perfect isometric cube from three faces, then stretch it into a box of a chosen height (remember height stays vertical, only width and depth obey the 30-degree rule). Then combine and subtract boxes to make one piece of furniture (desk, chair, or drawer unit). Keep every face as a separate filled shape, no outlines.

- Which three transforms or actions put your squares onto the top, left, and right planes?

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- How did you set the box height without re-skewing the shape?

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- Which boxes did you add and subtract to build your furniture piece?

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### Exercise: Start a Prop Kit

Create at least five reusable props (for example chair, plant, laptop, coffee cup, cardboard box) and save each as an Illustrator symbol or Figma component at a known base scale (for example a 1-unit cube equals 100 pixels). Confirm two props placed side by side are correctly to scale.

- What base unit did you set (how many pixels equal one cube unit)?

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- Which five props did you build, and which gave you the most trouble?

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- How did you confirm your props are consistently to scale with each other?

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### Worksheet: Object Construction Log

Log each object you build so your kit stays organized and consistently scaled.

Object name

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Built from (list of boxes / shapes)

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Base footprint size (units)

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Height (units)

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Corner treatment (crisp / rounded radius px)

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Saved as (symbol / component) Y/N

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## Checklist: Clean-File Checklist

- [ ] Every face is a separate filled shape, not an outline
- [ ] All seam anchor points snap to grid intersections at 400 percent zoom
- [ ] Objects are drawn back-to-front and bottom-to-top for correct overlap
- [ ] Each object is grouped and nested into a named zone sublayer
- [ ] Layers are renamed and color-tagged, no anonymous 'Group' entries

## Light, Shadow, and Color That Reads as 3D

Lock one light direction, build value trios, ground objects with shadow and AO, and limit your palette.

### Exercise: One Light, Three Values

Choose a single light direction for your scene (top-light is easiest). For every material, build a light/mid/dark trio in HSB: hold hue roughly fixed, step brightness down for shadowed faces, nudge saturation up, and shift hue slightly cool in the dark and warm in the light. Apply the same top-lightest, one-side-mid, opposite-side-darkest logic to every object.

- What light direction did you commit to for the whole scene?  
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- For one material, what are the exact HSB values of your light, mid, and dark faces?  
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- How did you keep the light logic identical across at least three different objects?  
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### Exercise: Ground It With Shadow and AO

Add a grid-aligned cast shadow (offset opposite the light, 15 to 25 percent opacity, small blur), a tight darker contact shadow where each object meets the floor, and subtle ambient occlusion gradients in inner corners. Compare a before/after of one object with and without grounding.

- What opacity and blur amount did you use for the cast shadow?  
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- Where did you add ambient occlusion, and how subtle did you keep it?  
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- What changed in how 'placed' the object looks after adding the contact shadow?  
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## Worksheet: Material Value Sheet

Record the value trio for each material so your whole scene (and future scenes) stays consistent. Leave any derived contrast notes for after you compare them on canvas.

Material name (wood / plastic / metal / glass / fabric / wall)

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Base hue (H, S, B)

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Light face (H, S, B)

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Mid face (H, S, B)

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Dark face (H, S, B)

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Saved as swatch group / style Y/N

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## Checklist: Light and Palette Checklist

- One light direction is used on every object with no exceptions
- Every material has a saved light/mid/dark swatch trio
- Shadows use raised saturation and a slight cool hue shift, not flat grey
- Each object has a cast shadow plus a tight contact shadow
- Palette is limited to 3 to 5 base hues plus 1 to 2 reserved accents

## Composition, Scenes, and Tech-Explainer Work

Compose a full scene with a clear focal point, add explainer conventions, and export it crisp for a portfolio piece.

### Exercise: Compose the Scene

Assemble your props into one finished scene. Choose a focal element and place it off-center, pick a layout (floating diorama or cutaway room), cluster supporting objects to lead the eye, and use overlap plus detail falloff for depth. Reserve your highest contrast and accent color for the focal element only.

- What is your focal element and where did you place it?

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- Which layout did you choose and why does it suit your subject?

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- Which leading lines, overlaps, or clusters direct the eye toward the focal point?

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### Exercise: Make It Explain

Add at least two explainer conventions to the scene: callout labels with thin leader lines, a cutaway, an exploded view, grid-aligned flow arrows, or numbered step badges. Keep arrows on the 30-degree axes and keep label text upright and legible, not skewed onto the grid.

- Which explainer conventions did you add and what do they clarify?

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- How did you keep flow arrows feeling part of the isometric world?

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- What typeface and size did you use for labels, and is it legible when viewed small?

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### Worksheet: Export and Delivery Sheet

Plan each export before you produce it so every placement gets the right format and resolution.

Placement (web / app store / deck / social / print)

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Format (SVG / PNG / PDF)

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Scale or DPI (2x / 3x / 300 DPI)

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Background (transparent / solid color)

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Final pixel dimensions

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Layered master file kept and named Y/N

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## Checklist: Ship-It Checklist

- [ ] Final seam pass done at 400 percent, no hairline cracks
- [ ] Anchors snapped to whole pixels so raster exports stay sharp
- [ ] Raster exported at 2x or 3x; vectors exported as minified SVG where used
- [ ] Focal element has the strongest contrast and the accent color
- [ ] Layered master file saved as the source of truth, not just a flattened export

## Your Action Plan

1. Set up and verify a true 30-degree grid in your primary tool, saved as a locked GRID layer.
2. Build a reference cube and confirm 30-degree edges and a 120/60 top face.
3. Construct five reusable props and save them as symbols or components at a fixed base scale.
4. Choose one light direction and commit to it for the entire project.
5. Create light/mid/dark swatch trios for every material and save them as a swatch group or styles.
6. Add cast shadows, contact shadows, and ambient occlusion to ground every object.
7. Lock a limited palette of 3 to 5 base hues plus 1 to 2 accents.
8. Compose a full scene with an off-center focal point and a chosen layout.
9. Add at least two explainer conventions (callouts, flow arrows, cutaway, or exploded view).
10. Export crisp final files at the right format and scale, keep the layered master, and package one portfolio piece.









