STRETCHLEARN · WORKBOOK

T-Shirt Design — Workbook

This workbook turns the course into reps on real artwork. You will pick a method for a real design, reduce a palette to a screen-print budget, build vector art that survives the press, plan placement and mockups, and export files that a print-on-demand platform or screen shop will accept without a single follow-up email. Work one section per module and finish with a complete, press-ready design package you could send to a printer today.

How Shirts Get Printed Decides How You Design

Match a real design to the right decoration method, learn to think in spot colours and screens, and design for the garment, not just the graphic.

Exercise: Method Match: One Design, Three Methods

Take one design idea you want to put on a shirt. Sketch or describe how it would have to change to print well by screen printing, by DTG, and by embroidery. Be specific about colours, detail, and garment, because the same idea becomes three different files.

• For screen printing: how many spot colours would it use, and would a dark garment force a white underbase (adding a screen)?

• For DTG: does it benefit from full colour or photographic detail, and which garment colour would you proof it on?

• For embroidery: what detail, text, or gradient would you have to simplify or remove so a needle can stitch it?

• Which single method best fits this design and why, and what is the cheapest way to print it at small quantity?

Worksheet: Project Brief and Constraints

Lock the facts that will shape every later decision before you draw. Fill one brief per design.

Design name / concept (one line)

Primary decoration method (screen print / DTG / embroidery)

Garment colours to be offered (list)

Fabric (100% cotton / 50-50 blend / tri-blend)

Spot colours intended (count, and Pantone numbers if known)

White underbase needed? (yes on darks / no)

Print location(s) (full front / left chest / back / sleeve)

Quantity (one-off / small batch / volume)

Checklist: Pre-Design Readiness

[ ] I have chosen the decoration method before starting the artwork
[ ] I have written down the exact garment colours and fabric
[ ] I know whether a dark garment will require a white underbase (extra screen)
[ ] I have a target colour count and a sense of the per-colour screen cost
[ ] I have decided where the print(s) will sit on the garment
[ ] I have my source assets and any brand colours as hex and Pantone numbers

Building Vector Artwork That Holds Up

Set up a clean vector file, draw paths and type that survive the press, and prove the art holds at real print size.

Exercise: Build It at Real Size

Open Illustrator or Affinity Designer and set an artboard to the actual decoration size (for example 12 inches wide for a full front). Build or rebuild your design as true vector with a transparent background and each colour as a named Pantone spot swatch. Then view it at 100 percent at print size and at a small left-chest size.

• Confirm the artboard is set to the real print dimensions, not a tiny or arbitrary canvas.

• List each design colour and the named Pantone spot swatch you assigned it.

• Check for stray points, open paths, and overlapping shapes, and note what you cleaned up.

• At small size, does any line or detail disappear, and what would you simplify if so?

Worksheet: Vector File Setup Record

Record the technical setup of your working file so handoff later is painless.

Software (Illustrator / Affinity Designer / other)

Artboard size at real print dimensions (width x height)

Colour mode (RGB / spot swatches / CMYK for process)

Named spot swatches used (Pantone numbers)

Background (transparent? yes/no)

Layers organized (artwork / type / guides separated? yes/no)

Fonts to be outlined before handoff (list typefaces)

Exercise: Type Prep Pass

On the typographic part of your design, set the text to the real print width, tune the spacing by eye, then make an outlined copy while keeping an editable backup. Confirm legibility small and at distance.

• Is the text sized to the actual decoration width with comfortable breathing room?

• Did you adjust kerning so heavy letters neither collide nor float apart?

• Have you saved an editable backup, then outlined all fonts on the handoff copy?

• Does the type read clearly at small size and from across the room?

Checklist: Clean Art Gate

[ ] Artwork is true vector, built at real print size, on a transparent background
[ ] No stray points, open paths, or accidental overlaps remain
[ ] All strokes are expanded to filled shapes
[ ] Adjacent colours overlap slightly or use a keyline so registration shifts will not show bare fabric
[ ] Fine detail and small text survive at the chosen method's reproduction floor
[ ] All fonts are outlined on the handoff copy, with an editable backup kept

Colour, Separations, and Method-Ready Art

Reduce to a limited palette, separate a screen-print design into screens (including the underbase), and ready art for DTG and embroidery.

Exercise: Cut the Colour Count

Take a design with more colours than it needs and reduce it to the fewest that keep the idea. Use the garment as a colour, merge near-duplicates, and replace at least one gradient with a flat or a halftone.

• What colour count did you start at, and what did you reach?

• Where did you let the shirt colour show through to save a screen?

• Which near-duplicate colours did you merge into one decisive colour?

• Where did a single-ink halftone stand in for a gradient or a second tone?

Worksheet: Separation and Underbase Plan

Plan the screens a printer will need for one screen-print design. Leave the screen-count total for you to add up after you list every layer.

Design name

Garment colour (light / dark)

Ink colour 1 (Pantone number)

Ink colour 2 (Pantone number, if any)

Ink colour 3 (Pantone number, if any)

White underbase required? (yes on darks / no)

Trapping / keyline between touching colours (describe)

Total number of screens (you calculate: inks + underbase)

Worksheet: DTG and Embroidery Readiness

Capture what each non-screen method needs from this design so the supplier gets usable art.

DTG resolution at print size (target 300 DPI)

DTG file format and background (PNG, transparent)

Garment colour to proof DTG against

Embroidery: detail / text to simplify or remove

Embroidery: thread colours to specify

Embroidery: stitch file needed (DST / PES) and who digitizes it

Checklist: Method-Ready Gate

[ ] Palette is reduced to the fewest colours that keep the idea
[ ] The garment colour is used as part of the palette where it helps
[ ] Each ink sits on its own layer (or is selectable by colour) for separation
[ ] A white underbase layer is planned for dark garments and counted as a screen
[ ] DTG art is 300 DPI at print size, transparent, and proofed on the real garment colour
[ ] Embroidery art is simplified, with thread colours specified and a digitizer identified

Placement, Mockups, and Shipping the Files

Place and size the print to standards, present it on an honest garment mockup, and export the exact files the destination needs.

Exercise: Place It on a Real Garment

Decide and measure the placement for your design. Set the print width and the distance down from the collar, confirm it fits inside the printable area, and check how it sits on the body, not just on a flat artboard.

• What is the print width and how far down from the collar does the top edge sit?

• Does the whole design fit inside the method and garment's maximum printable area?

• Does anything important cross a seam, collar, or pocket awkwardly?

• How will placement scale between a youth size and a 2XL in the same run?

Exercise: Build an Honest Mockup

Present the design on a garment-accurate mockup using a Printful/Printify generator or a Photoshop smart-object template. Render it on the real shirt colours, at the real placement and scale.

• Which tool did you use, and on which actual garment colours did you render it?

• Does the print's size and position on the mockup match your real placement spec?

• Is the colour contrast honest for each garment colour (not flattered by a fake bright render)?

• Would a client who approved this mockup be satisfied by the printed shirt?

Worksheet: Placement and Export Spec Sheet

Write the single spec sheet you will hand off with the files so the printer or platform needs no clarifying email.

Print location(s) and width(s)

Top-edge distance from collar / position reference

Maximum printable area for this method and garment

Destination (screen shop / Printful or Printify / embroiderer)

Delivered file format(s) (vector AI/EPS/PDF / transparent PNG at 300 DPI)

Colour map: every ink and its Pantone number

Fonts outlined and strokes expanded? (yes/no)

Editable master saved separately? (yes/no)

Checklist: Final Ship Gate

[ ] Placement and size match a measured standard and fit inside the printable area
[ ] The mockup shows real garment colours, scale, and placement honestly
[ ] All fonts are outlined and all strokes expanded on the handoff file
[ ] Colour mode and named spot swatches are correct for screen work; DTG art is 300 DPI, transparent
[ ] The right format is exported for the destination (vector for screen/embroidery, transparent PNG for DTG/POD)
[ ] A clearly named file ships with a colour and placement map, and an editable master is kept safe
[ ] The export meets the print-on-demand platform's published spec for that product

Your Action Plan

1. Pick one real design and write its brief: method, garment colours, fabric, and intended print locations.
2. Decide the decoration method and a target colour count, noting whether dark garments force a white underbase.
3. Set an artboard to the real print size and build the design as clean vector with named Pantone spot swatches.
4. Reduce the palette to the fewest colours that keep the idea, using the shirt colour and halftones to save screens.
5. Clean every path, expand all strokes, outline fonts on a handoff copy, and keep an editable master.
6. Plan the separations and white underbase, and count the total screens so the design fits a real budget.

7. Ready the art for DTG (300 DPI, transparent, proofed on the garment) and simplify any embroidery version.
8. Measure and set placement and size to a standard, keeping everything inside the printable area.
9. Build an honest garment mockup on the real shirt colours at the true scale and placement, and get approval.
10. Export the right files for the destination with a colour and placement map, meeting the platform or shop spec.