

# Foam board displays with HP PageWide XL Pro

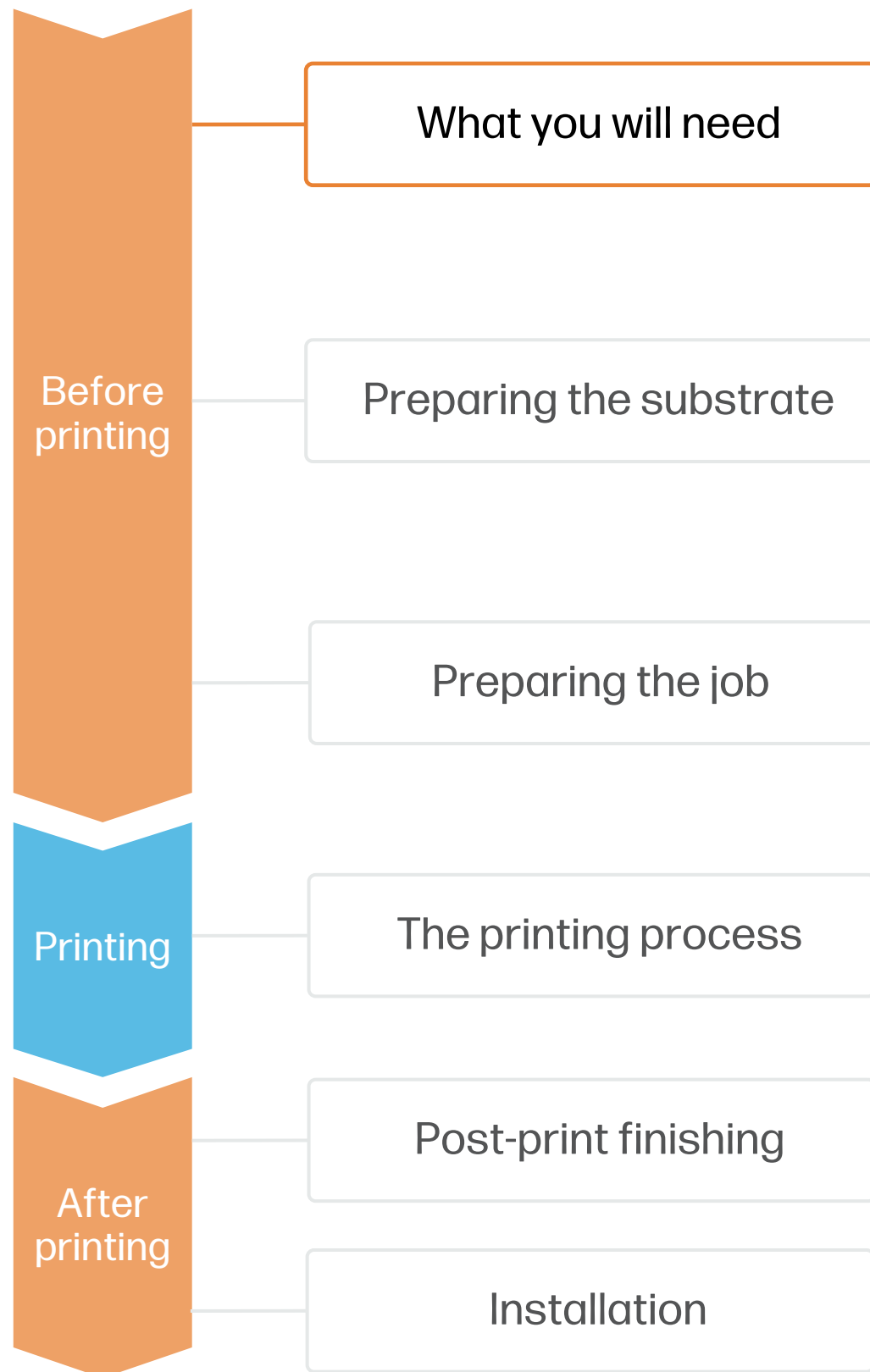
This document will explain how to create foam board displays and 3D applications using HP PageWideXL Pro printers.





# How to create foam board displays

## What you will need



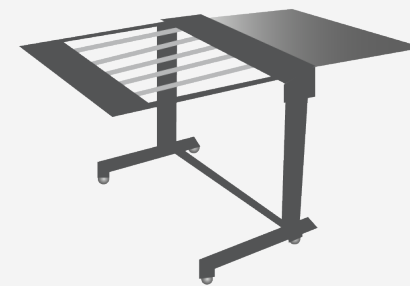
Foam board  
(3-10mm thick)



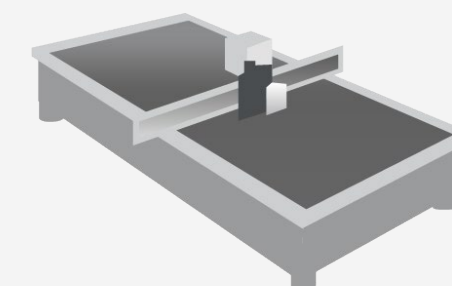
PageWide XL Pro  
printer



SW tools  
(RIP, edition, etc.)



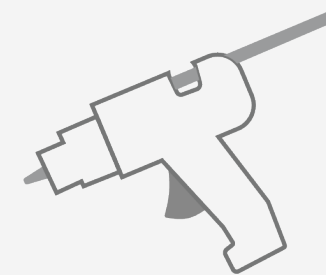
Pro Stacker (optional)



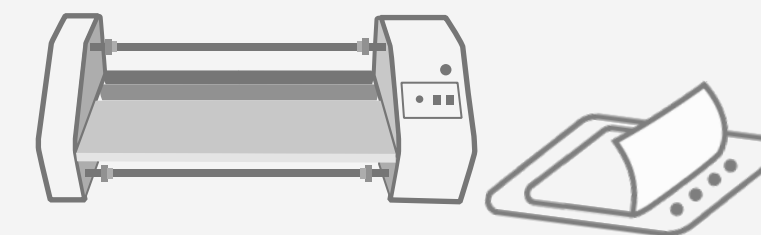
Digital cutting table  
(optional)



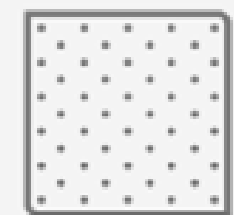
Utility knife &  
foam board V cutter tool  
(optional)



Hot glue gun (optional)



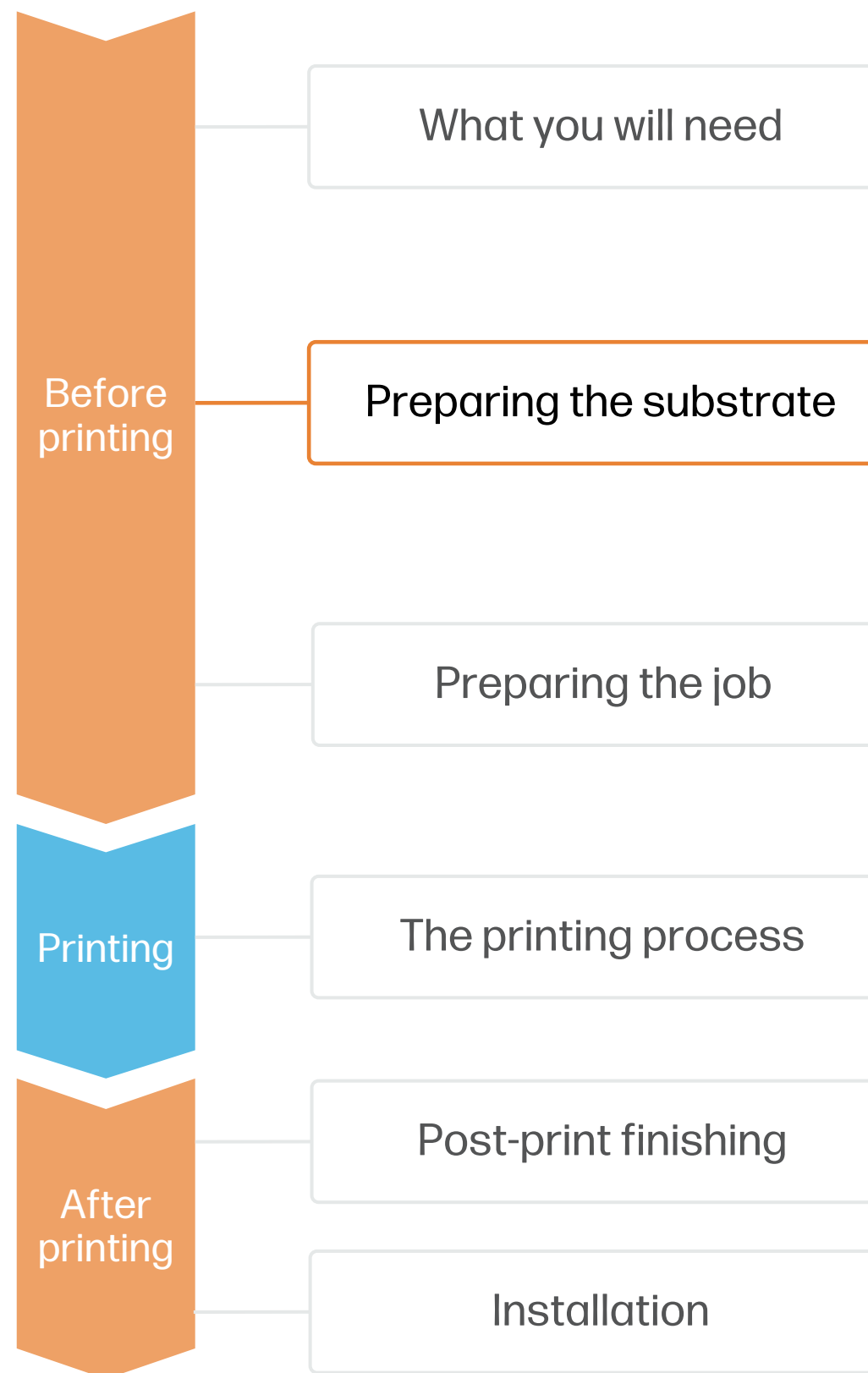
Film laminate & laminator  
(optional)



Lint-free cleaning cloth  
(optional)

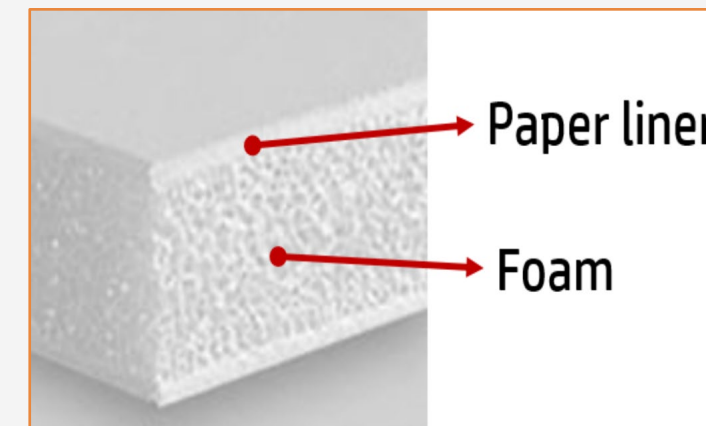
# How to create foam board displays

## Preparing the substrate



## 1. Substrates for rigid displays

- Foam boards are lightweight rigid materials that are **easy to transport, install, and store**. Most foam boards can also be easily **cut and bent** to custom shapes using simple tools, making them **highly versatile** materials.
- PageWideXL Pro printers can print directly on foam boards that have a face layer compatible with aqueous pigment inks. These are usually coated, inkjet treated, or uncoated papers:



Some examples of compatible boards:

- 3A Fome-Cor Sirius
- Gilman Brothers InSite BCNT
- Neofoam POP Heavy Coated Matt
- Aerpanel Graphic
- JSP Mirakoa Snow

- You can find a list of compatible boards that have been tested by HP in the [HP Media Locator](#).

**NOTE:** The printer accepts board sizes between A2 (420 × 594mm) up to B1 (707 × 1000mm) up to 10mm thick. Longer boards (up to 1500 mm) can also be printed if using an external support, such as an adjustable table.

**NOTE:** Check the [HP PageWideXL Pro - Substrates training kit](#) for a detailed explanation on how to choose the right media substrate to fit your needs.

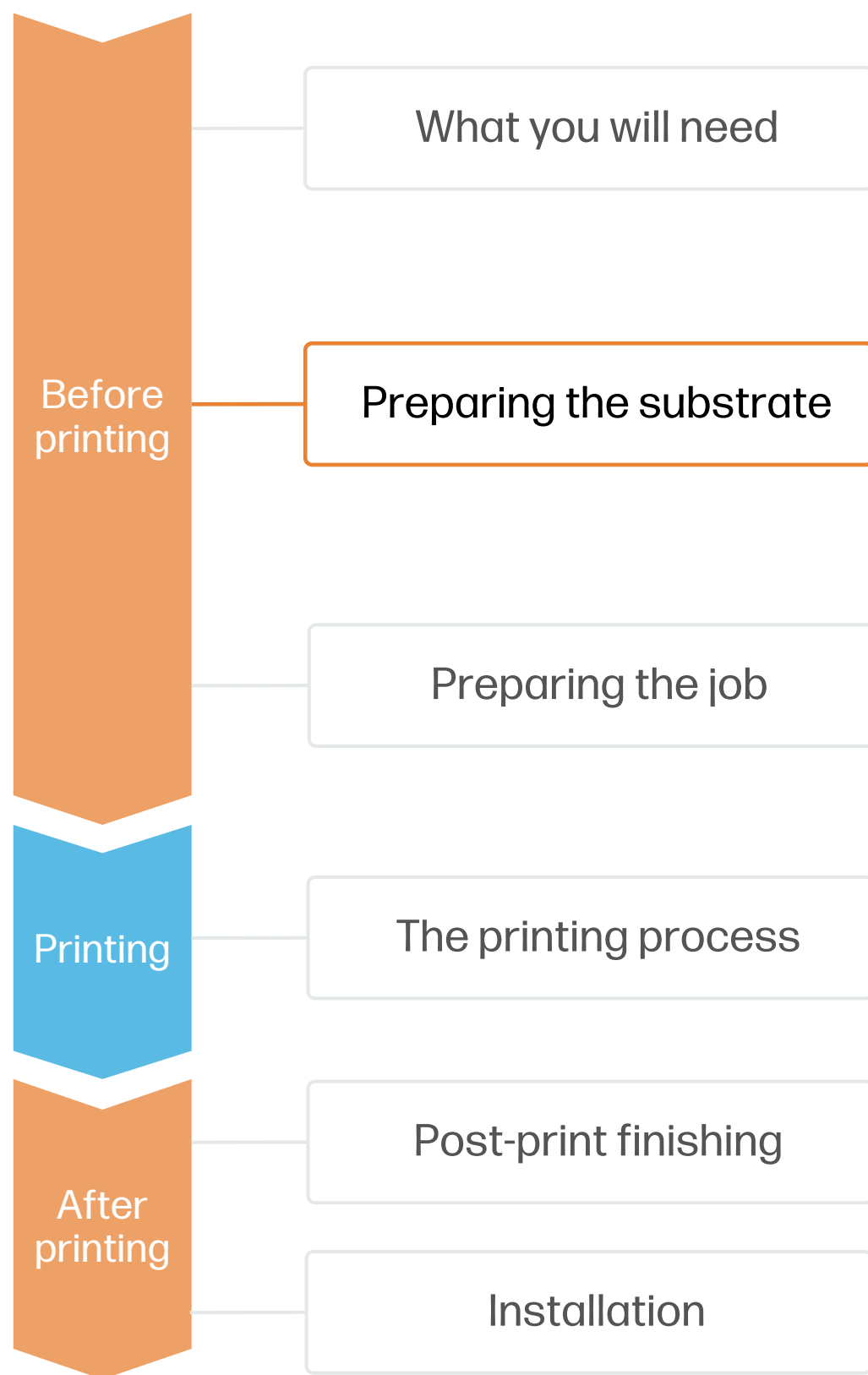
## 2. Usage and applications

- Rigid displays are normally used for **short to mid-term indoor** applications, such as promotional campaigns, events, retail displays, business presentations, construction signage, or educational infographics.
- For **long-term** or **outdoor** use cases, it is recommended to protect the printed boards with **film lamination**.

**TIP:** Enroll on the [HP Learn course on Rigid board applications](#) for a step-by-step guide on how to prepare, submit and print rigid boards.

# How to create foam board displays

## Preparing the substrate



### 3. Storage

Store the boards horizontally in a flat surface and in their original packaging. Keep them in a clean, dust-free environment, within the temperature and humidity range specified on their label. If the label gives no specification, try to store the boards at 20°C and a relative humidity of 40-60%.

Avoid stacking too many boards on top of each other, as pressure can deform them.

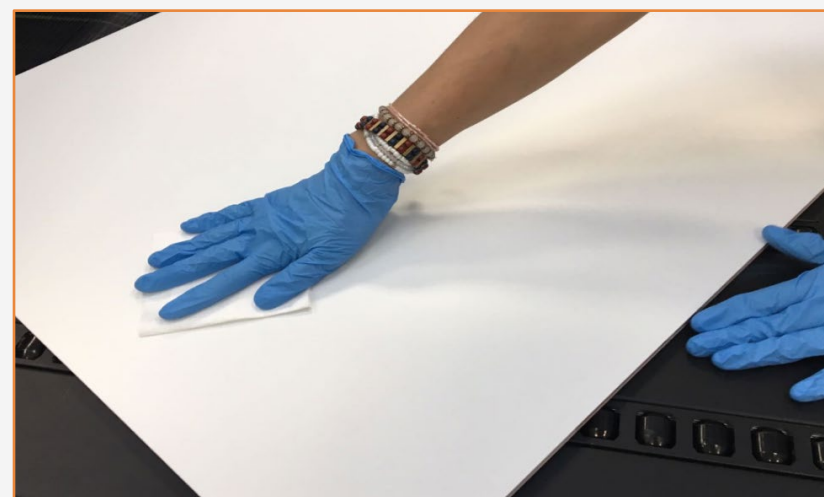
Allow boards to adapt to room conditions, out of the packaging, for 24 hours before printing.



### 4. Handling

Handle the boards with care. Foam boards are susceptible to dents and can easily be damaged if improperly handled, especially on the corners and edges.

Wear gloves when handling the boards to avoid leaving fingerprints on the surface which may become visible after printing.



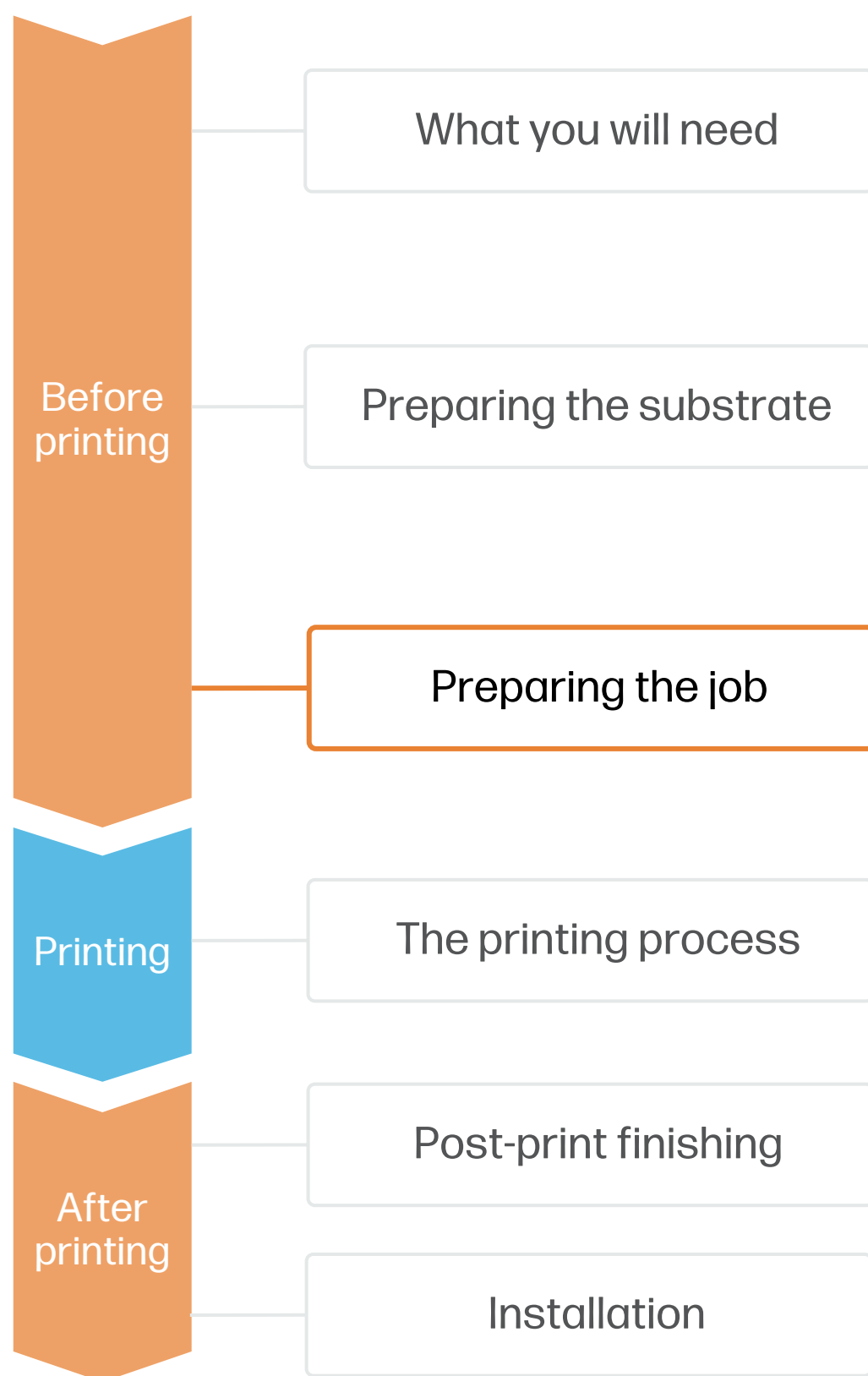
### 5. Cleaning

Dust particles may tend to adhere to boards with certain coatings. If you detect any dust or debris on the boards, use a lint-free cloth to remove it before printing.



# How to create foam board displays

## Preparing the substrate



## 6. Substrate presets (Paper types)

- Check if the material you are going to use has its own custom optimized substrate preset:
  - a) On the printer's **front panel** online Paper Library search ([tutorial](#))
  - b) On the **web**, in the [HP PrintOS Media Locator](#):  
On the Filter tab, select your Printer Model, then select **"Type: Foam board"**.
  - c) On the **web**, from the substrate vendor's or RIP vendor's websites
- Download and install.



Select a preset based on the surface & thickness of your board

**NOTE:** If you cannot find custom substrate presets for your material of choice, you can always use the **generic presets** already installed in your printer:

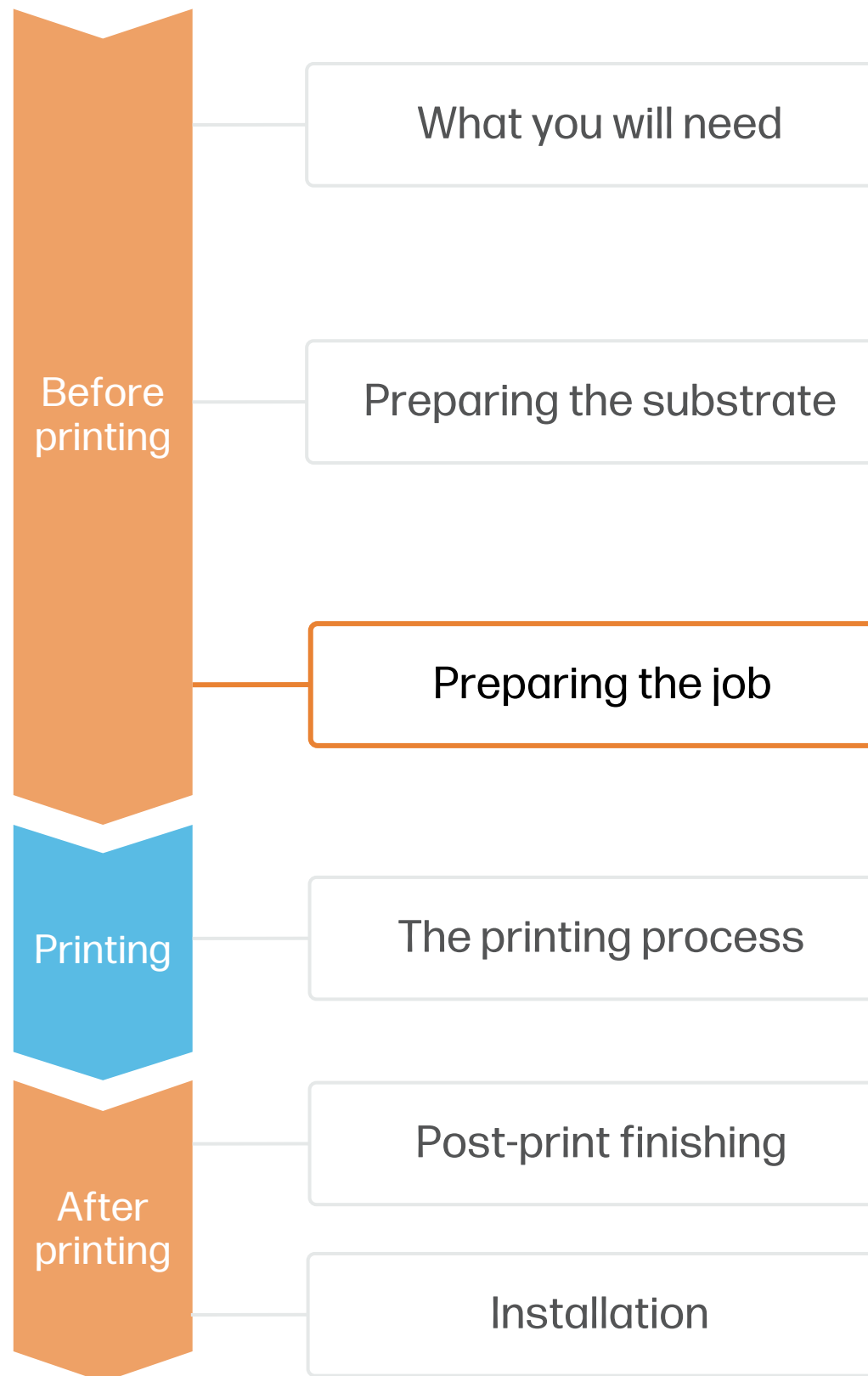
- For foam boards with a coated paper liner, try using the **WaterBased Coated Foam Board** generic preset.
- For foam boards with an uncoated paper liner, try using the **Plain/Uncoated Foam Board** generic preset.
- For foam boards < 2mm thin, try using a **Cardstock** generic preset, such as the **WaterBased Coated Paper >400gsm**.

The screenshot shows the HP PrintOS Media Locator interface. The main content area displays a table of substrate presets. The table has columns for 'Device family', 'Name', 'Board', 'Manufacturer', 'Surface', and 'Saturation'. The 'Name' column includes various preset names like 'POP-COLOR 5mm', 'POP-Matt Coated 10mm', etc. The 'Manufacturer' column lists 'NEOFOAM' and 'COLORPRO TECHNOLOGY'. The 'Surface' column lists 'Uncoated Paper Surface' and 'Coated Paper Surface - White'. The 'Saturation' column lists 'Board High Saturation, D...' and 'Board Mid Saturation, Du...'. A 'FILTER' sidebar is open on the right, with 'Type' and 'Printer Models' highlighted. The 'Type' filter is set to 'Foam board' and 'Printer Models' is set to 'HP PageWide XL'.

Device family	Name	Board	Manufacturer	Surface	Saturation
HP PageWide XL	POP-COLOR 5mm	Board	NEOFOAM	Uncoated Paper Surface	Board High Saturation, D... B1
HP PageWide XL	POP-Matt Coated 10mm	Board	NEOFOAM	Coated Paper Surface - White	Board High Saturation, D...
HP PageWide XL	POP-Art 10mm	Board	NEOFOAM	Uncoated Paper Surface	Board Mid Saturation, Du...
HP PageWide XL	POP-Art 5mm	Board	NEOFOAM	Uncoated Paper Surface	Board Mid Saturation, Du...
HP PageWide XL	POP-Art 3mm	Board	NEOFOAM	Uncoated Paper Surface	Board Mid Saturation, Du...
HP PageWide XL	POP-Matt Coated 5mm	Board	NEOFOAM	Coated Paper Surface - White	Board High Saturation, D...
HP PageWide XL	Fome-Cor®Sirius, 3/16" and 3/8"	Board	COLORPRO TECHNOLOGY	Uncoated Paper Surface	Board High Saturation
HP PageWide XL	Fome-Cor®plus, 5 and 9.5mm	Board	COLORPRO TECHNOLOGY	Uncoated Paper Surface	Board High Saturation

# How to create foam board displays

## Preparing the job



### 7. Create the file

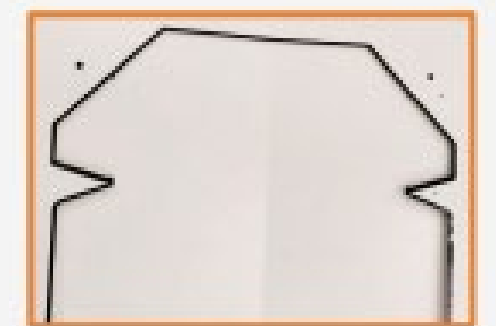
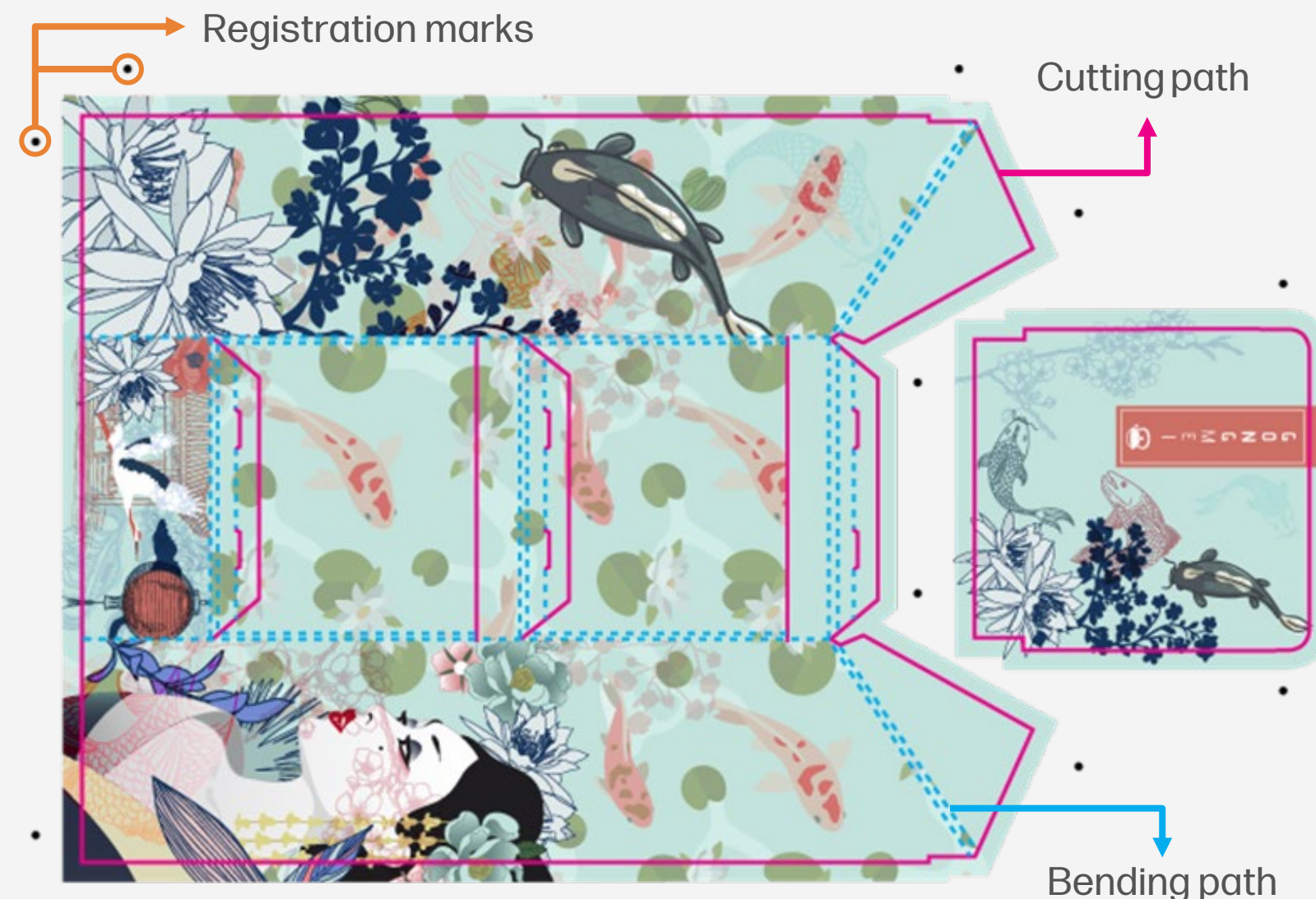
Design the content and structure of the display using tools such as Adobe Illustrator, Photoshop, or any other program that will allow for export to a vector format.

You can also use a 3D modeling program or plugin to help you visualize how the final product will look.

### 8. Job edition

One of the key editing attributes when designing displays is the **cutting** and **creasing path** definition.

1. **Draw the cutting path:** it should follow the graphic's silhouette interior, leaving 3mm bleed margin. It should also include all necessary holes and grooves needed for assembly.
2. **Create a new color swatch** and assign it to the cutting path, saving it to its own unique layer.
3. **Draw a bend path.** It should follow all edges that need to be bent for the final assembly.
4. **Create a new color swatch** and assign it to the bending path, saving it to its own unique layer.
5. **Add registration marks** for your digital cutting table and save them to all layers.

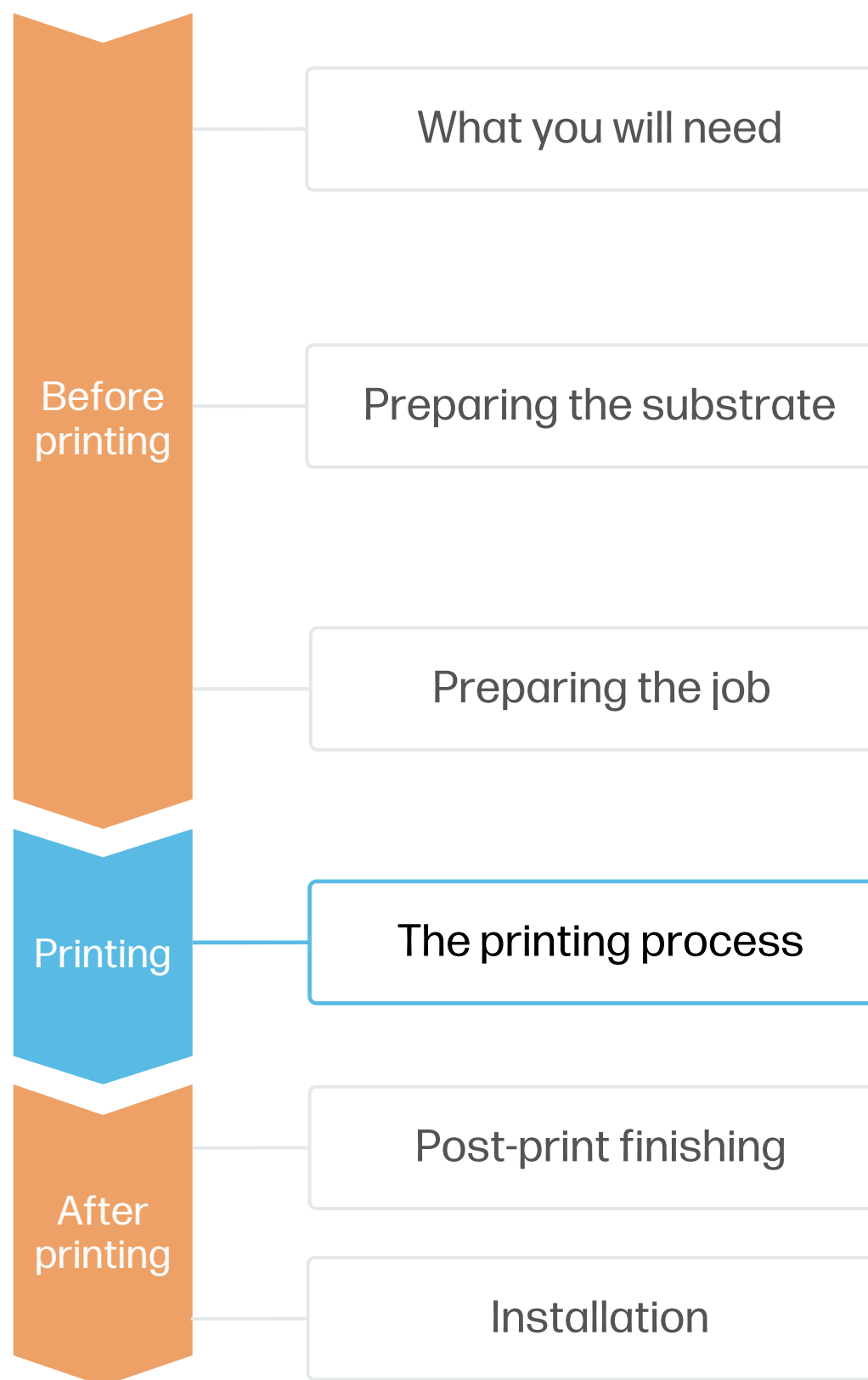


**TIP:** Leave 3mm bleed margin between the printing image edge and the cutting path to ensure there will not be any unprinted surfaces in the final product.



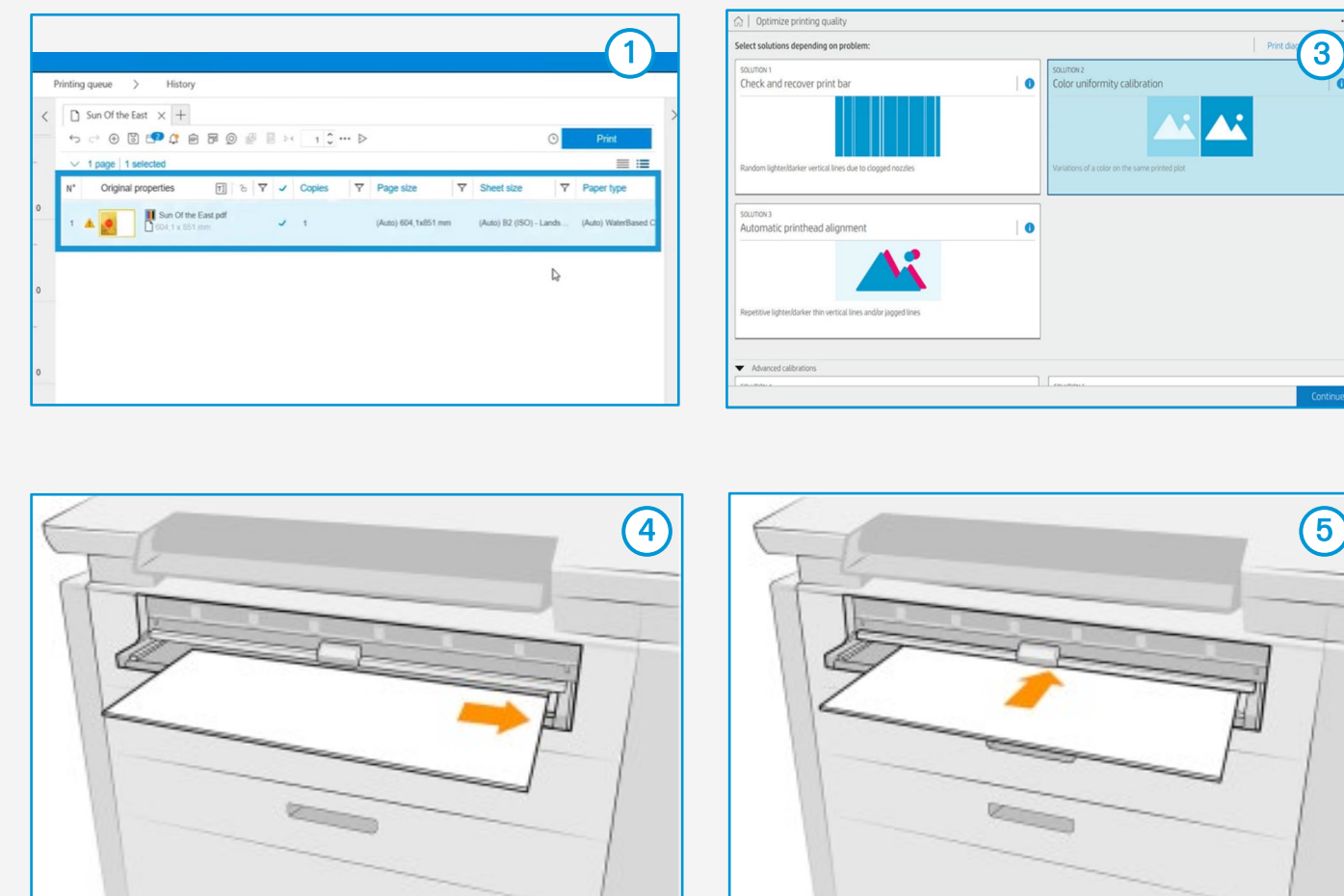
# How to create foam board displays

## The printing process

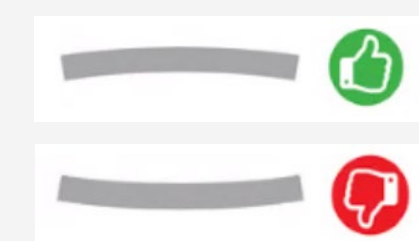


## Loading a board

1. Load your printing file into **HP SmartStream** or other third-party compatible RIPs, like Onyx or Caldera.
  2. On HP SmartStream, select the **Sheet view** icon on the toolbar, then choose the parameters such as paper type, thickness, size, print quality, or double-side settings.
  3. If it's your first time using this substrate, perform a basic **Color Uniformity Calibration** and **Automatic Printhead Alignment** before printing. You can follow this [Calibration guide](#).
  4. Click **Print** and follow the instructions of the Front Panel. First open the input tray, then load the sheets **aligning its edge with the right side of the printer**.
  5. Load the next sheets one by one when the Front Panel prompts you to do so.
- If printing a **double-side job**, wait for the Front Panel prompt to flip the printed sheet(s) vertically, align them to the right, and load them to print side B.
- 6.



**TIP:** Check your foam board for bent corners or warping before printing. If the boards have a **concave** side, make sure it's **facing down** when loading.



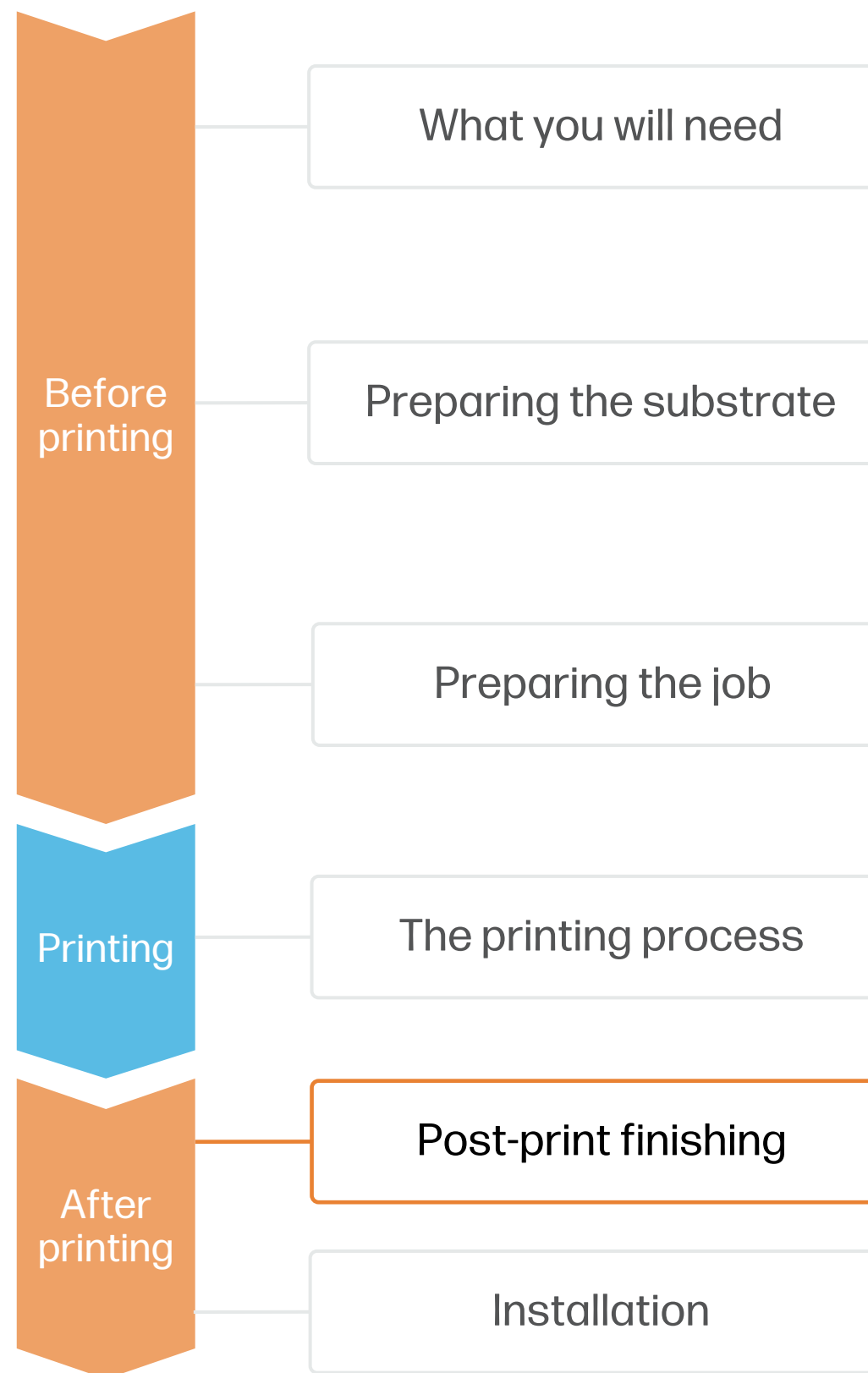
When printing on double-side, if you notice deformation after printing on side A, **leave the boards on a flat surface** for a few minutes to allow them to recover their shape before printing side B.

**TIP:** Check this [short video guide](#) if you have any doubts about the loading process.

**NOTE:** Learn how to boost your workflow efficiency using HP SmartStream by enrolling on the available training: "[Advanced certification - PWXLPRO5200and8200](#)" on the HP PrintOS Learn website.

# How to create foam board displays

## Post-print finishing



### 1. Laminating (optional)

Laminating the printed boards will make them more durable, ideal for long-term or outdoor applications.

We recommend using a gloss transparent film for lamination. You can use either hot or cold laminating processes, depending on your needs and available equipment.

If unsure about which lamination settings to use, contact your laminate manufacturer.



**! IMPORTANT!** Recommended for long-term usage, high-transit areas, and surfaces that will be cleaned frequently.

### 2. Cutting (optional)

Create 2D & 3D structures to make your designs stand out or optimize resources by nesting:

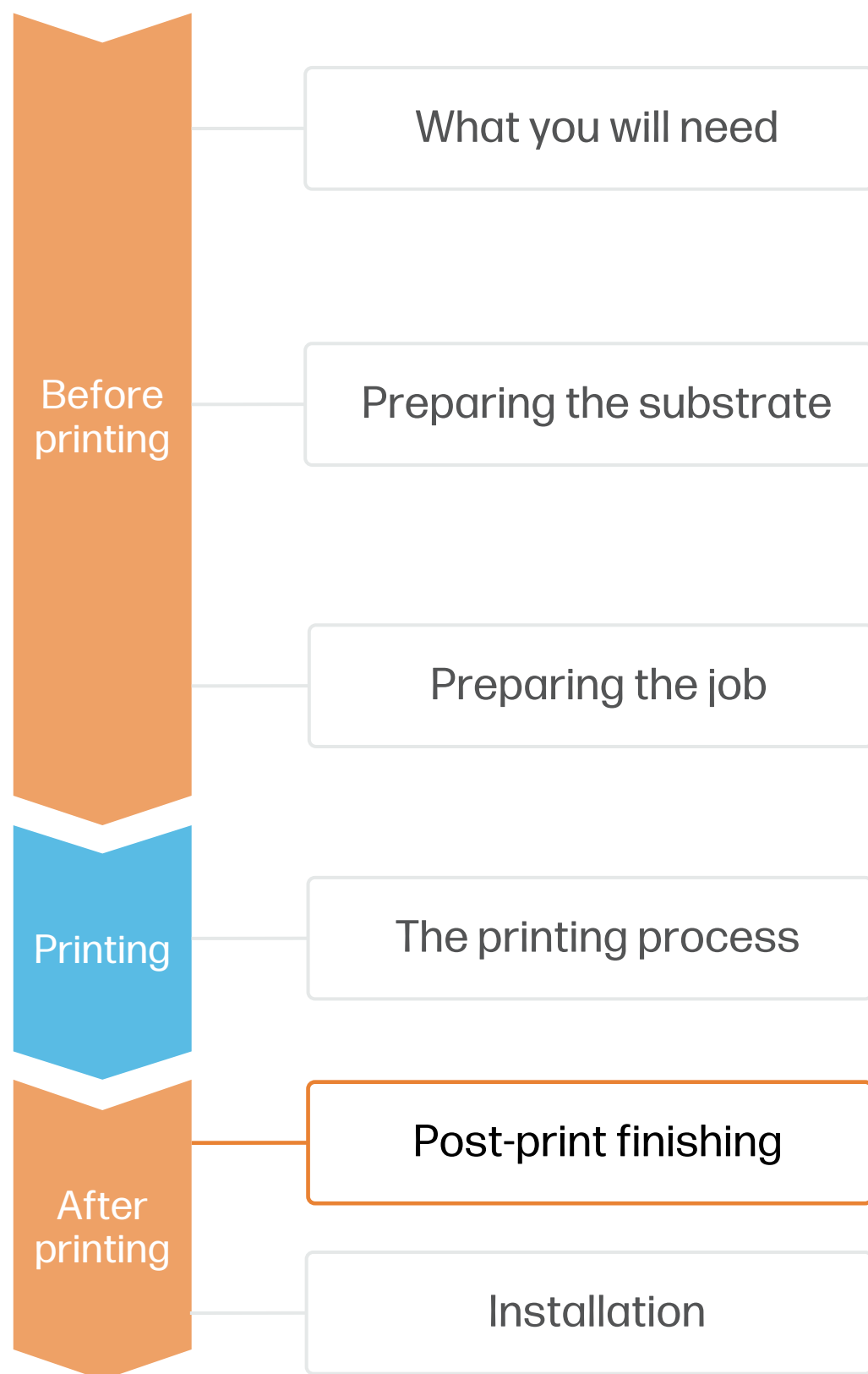
A. **Manual cutting:** Use a sharp **utility knife**, a straight edge ruler and a cutting mat for basic cuts. For complex shapes, use a **hobby knife**, or ideally a digital cutter.

- TIP:** To avoid leaving jagged edges when manually cutting boards:
- Always use sharp blades.
  - Cut at an angle, using 2-3 passes for each cut.
  - Lightly wax your blade to make it go smoothly into the board.



# How to create foam board displays

## Post-print finishing



## 2. Cutting

### A. Digital cutting table:

1. Import the cutting path created in previous steps into the digital cutter.
2. Assign the material, settings, and tools to the operation. Use a sharp light duty EOT Electric Oscillating Tool for thin boards, or a POT Pneumatic Oscillating Tool for thicker boards.
3. Place the printed board on the flatbed. Turn on the vacuum and give a small push to the board to test if it's firmly set.
4. Use the registration marks on your printed design to align the machine.
5. Run the cutting operation, preferably on best quality mode.

**TIP:** Calibrate the right cutting depth parameter for your flatbed cutter



Example of proper cutting depth

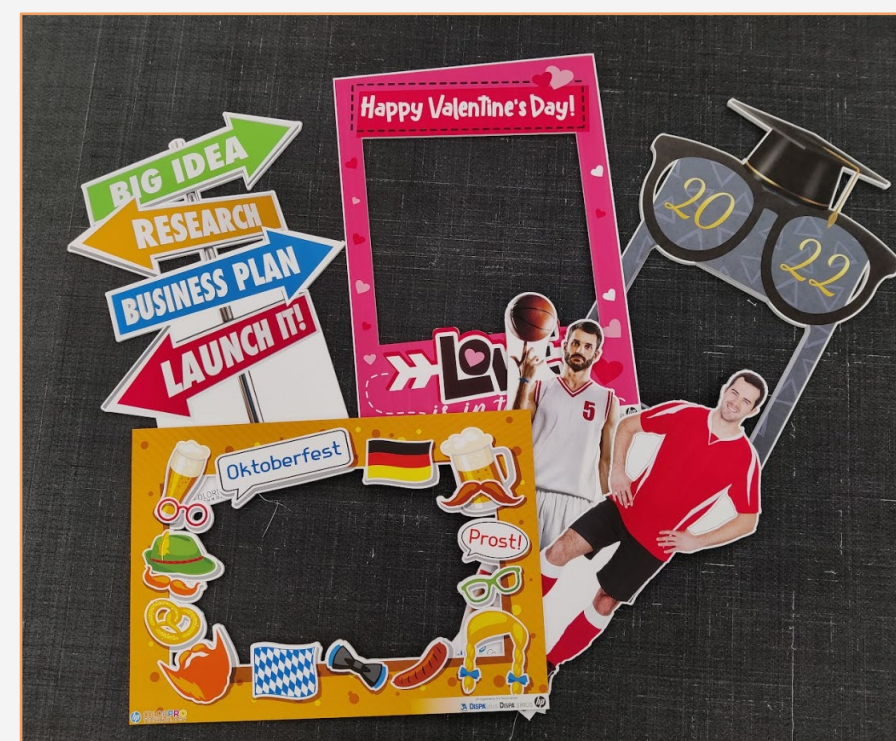


Example of too deep cutting depth



EOT tool

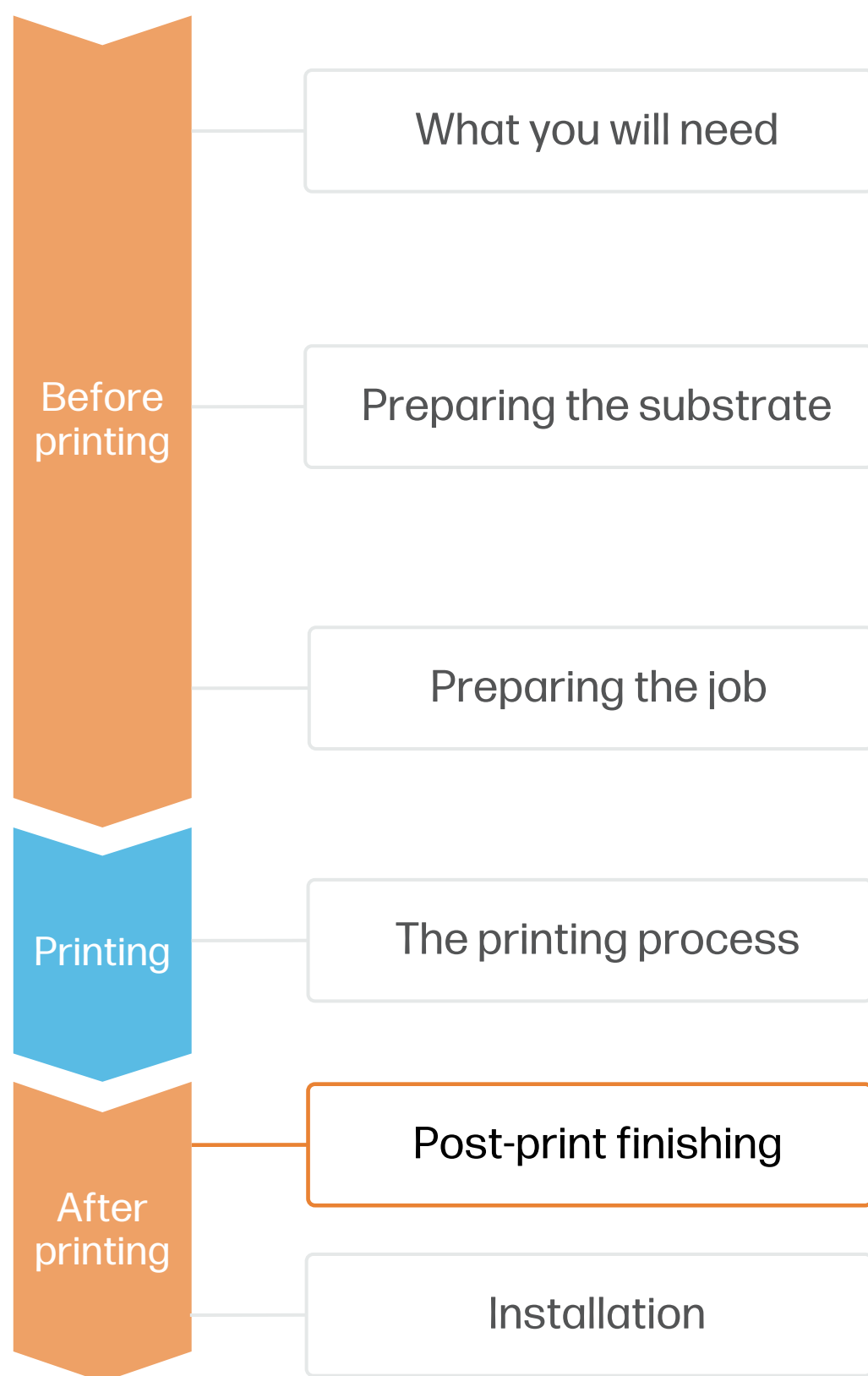
**TIP:** If printing a double-sided design, run the cutting operation on side B. This will give a cleaner finish to the front-facing face.





# How to create foam board displays

## Post-print finishing



### 3. Bending (optional)

Create complex 3D structural designs by bending your foam boards. You will need to create V shaped grooves that go almost all the way through the board but leave the face liner intact.

- A. **Digital cutting table:** Use a **V-cut tool (VCT)** at low speed for best results. The blade will cut on both sides of the cutting path you define. Angle must be set physically on the tool as well as in the software.
- B. **Manual cutting:** Use a **V shaped manual cutting tool** with adjustable height and angles and a straight ruler to create the grooves.

You can adjust the angle of your V cutter to get different corner angles.

After creating the grooves, fold your board leaving the cuts on the **“inner” side**, leaving the main printed face intact.

If necessary, use **hot glue** to fix the corners in place.



**TIP:** If you don't have a V shaped foam board cutting tool, you can use a sharp utility knife to score the boards and a blunt object to crush the foam and widen the groove.



V cut manual tool for foam boards

**TIP:** If your face layer cracks during folding, try creating a softer corner radius by making multiple smaller V cuts instead of a single large one

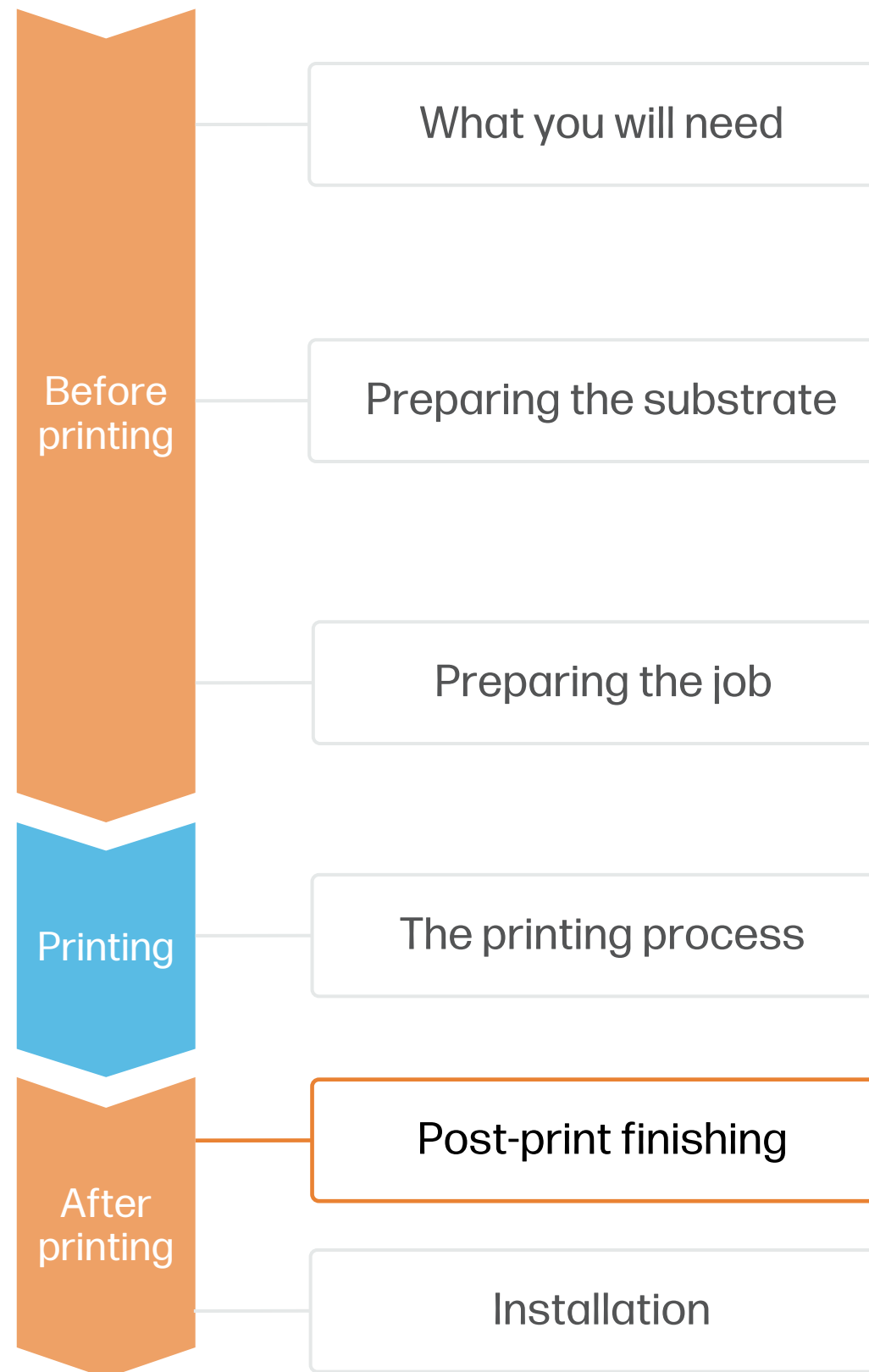
To make a 90° soft radius corner, use two 45° parallel grooves separated 1cm from one another.





# How to create foam board displays

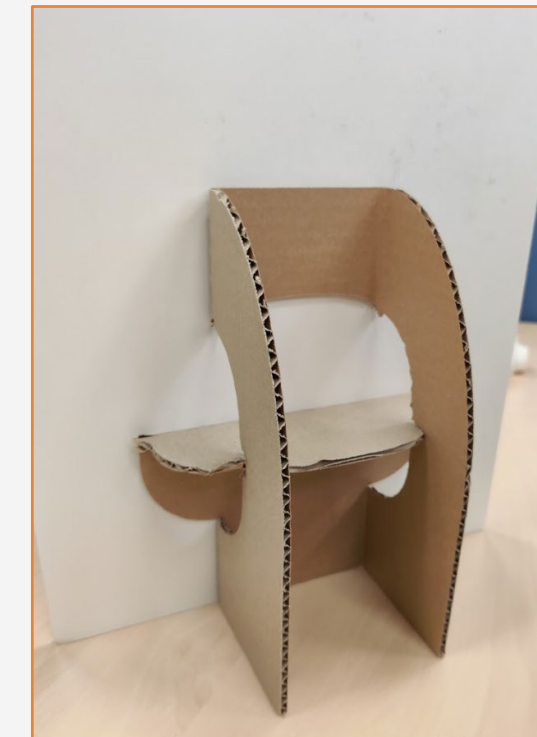
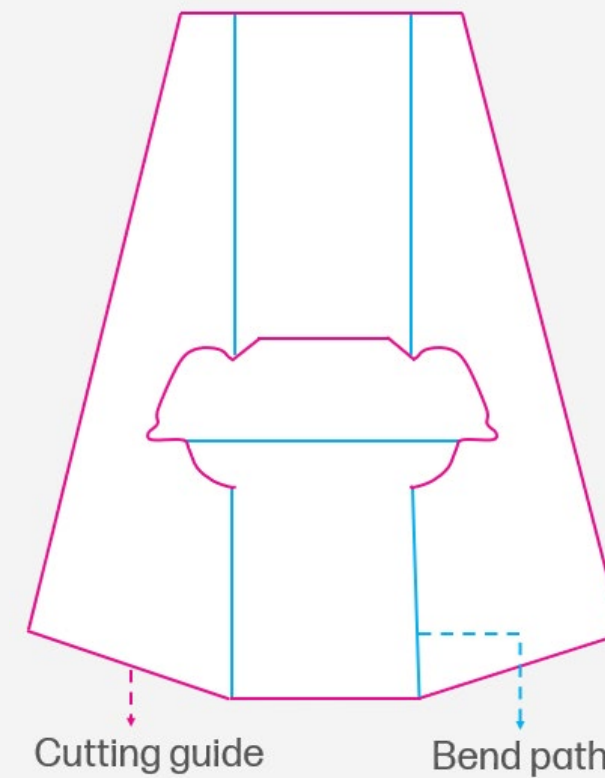
## Post-print finishing



### 5. Stands (optional)

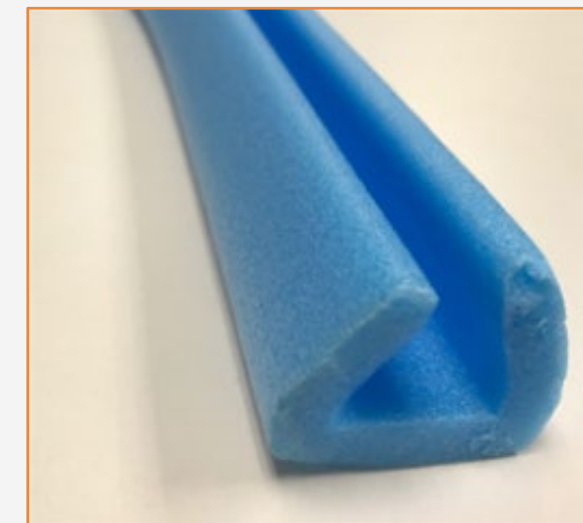
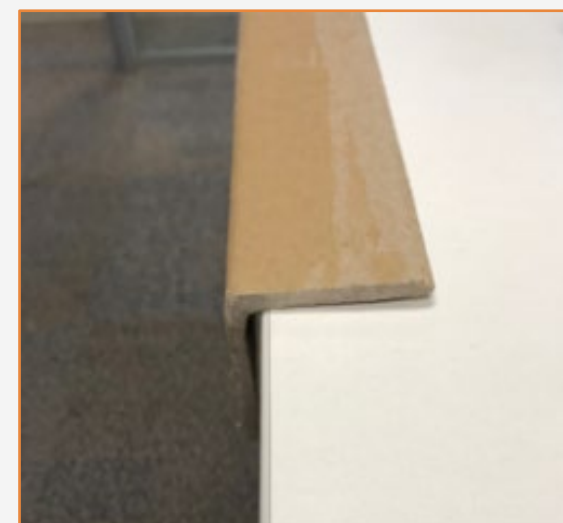
You can use cardboard to create a cost-effective stand that can be quickly folded for easy storage and fix it to the back of the board using adhesive.

Alternatively, use a weighted rigid stand for long-term applications.



### 6. Shipping

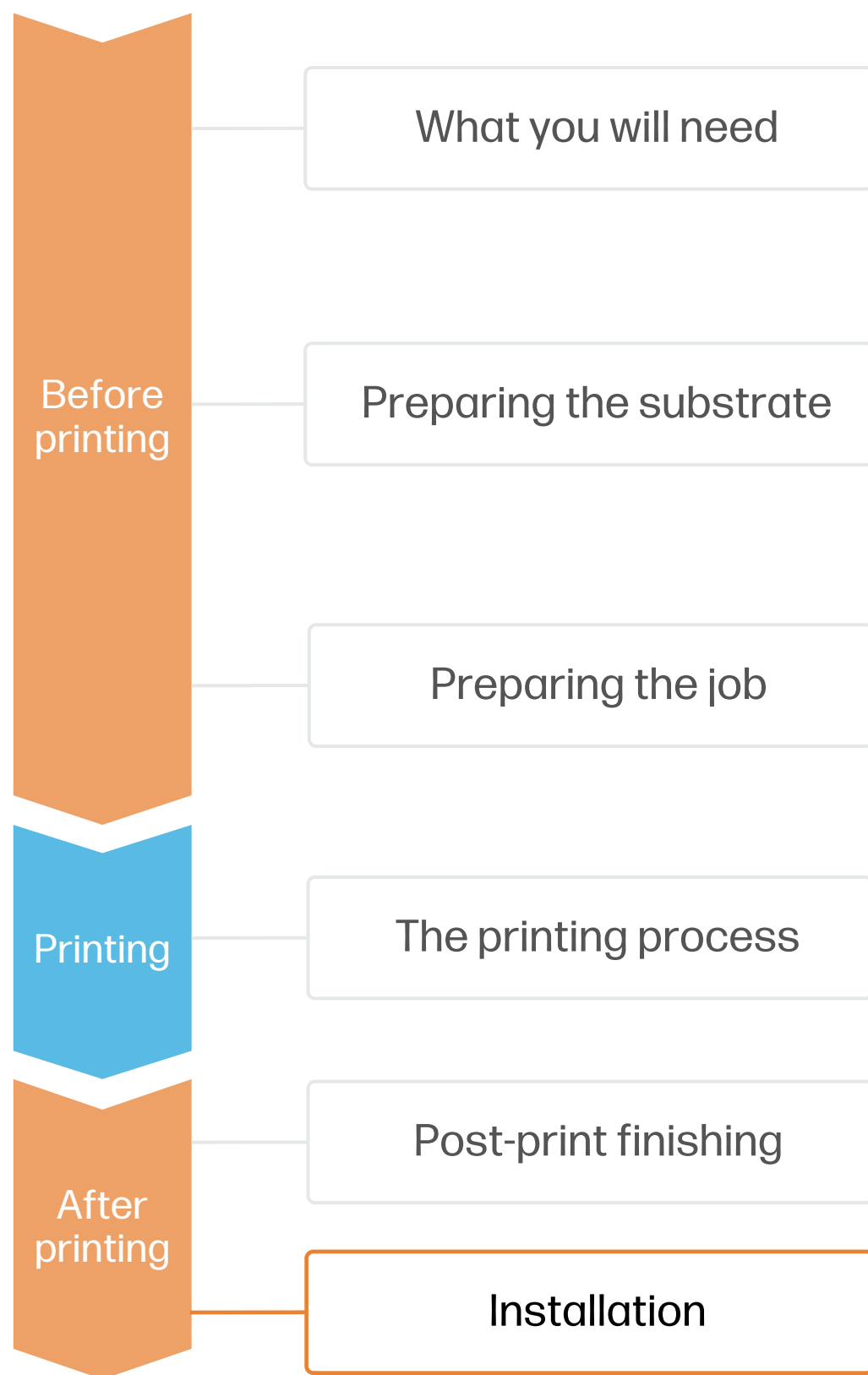
When sending jobs to customers, use **edge protectors** to protect the board edges during shipping:





# How to create foam board displays

## Installation



## 7. 3D foam board applications



The combination of **cutting** and **bending** can be used to create all sorts of 3D applications, such as:

- Countertop displays
- foam board canvas
- Product glorifiers
- Cutouts & standees
- Cubes / totem displays
- Decorative furniture
- Photocall frames



**NOTE:** All samples printed on a PageWideXL Pro 8200.

Substrates used: 3A Fome-Cor Sirius, Gilman Brothers InSite BCNT, Neofoam POP canvas.



