



UNIT – II

DESIGN SKETCHING FOR 3D PRINTING

Tools in Sketchbook

Using tools

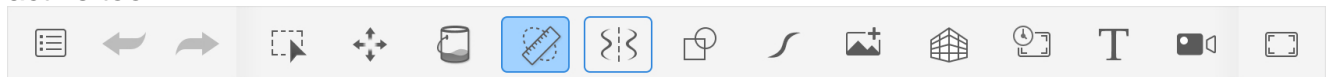
When a tool is active, the icon is highlighted blue.



Using multiple tools

Some tools in Sketchbook can be used in combination with others. When you see a tool icon outlined in blue (not all blue), it means two tools are active. The outlined tool is the secondary tool.

For an example of two active tools, let's say you are working in **Symmetry**, and want to draw a straight line. Select **Guides**, then **Ruler**. Notice how **Symmetry** is still outlined in blue, it is now the secondary tool. Notice how **Guides** is full blue? It's the active tool.



Exiting a tool

Now, what happens when you're finished with one tool, but not the other? Easy – tap on the tool you're finished with, say **Symmetry**.



This makes it active (full blue). Tap it again to exit from the tool. Notice it no longer has a blue outline. Now, **Ruler** is the only active tool (full blue).





Tools in Sketchbook Pro for desktop

There are fill, guide, symmetry, and text tools, as well as cropping, transform, distort, perspective, drawing, and stroke tools. There are also an assortment of editing tools.



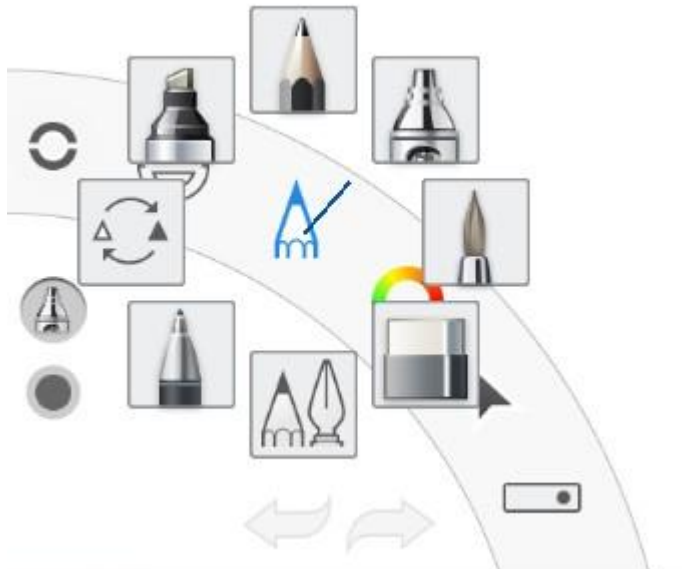
Tool selection

Pick a tool using one of the following methods:


- Tap a tool the toolbar to select it. Some tools have a contextual secondary toolbar containing additional tools



- Use the **marking menus** – right-click and flick toward an icon to select it.



Pen Mode

When Pen Mode  is enabled, only your stylus will make marks on the canvas, you will not be able to draw with touch. This can be useful to people using a 2-in-1 computer, or a tablet PC, who may rest their hand on the screen and wish to avoid inadvertent marks on the canvas. When Pen Mode is on, you can still interact with the palettes and menus using touch, but the canvas will not recognize touch.

Steady and Predictive Stroke



Sketchbook has two stroke tools to help create smooth and uniform strokes: **Steady Stroke** and **Predictive Stroke**. Not every version of Sketchbook has these options.

Steady Stroke



Use **Steady Stroke** to draw uniform smoother strokes. **Steady Stroke** has an option for settings the offset between your cursor and the stroke. This helps when creating smooth strokes. The larger the offset, the longer the offset between your cursor and the stroke.

- To draw large smooth curves, increase the offset.
- To draw small curves with tight turn radii, decrease the offset.

Increasing the offset affects your stylus response time. When drawing short curves, if you have difficulties, lessen the smoothness setting.

How to exit Steady Stroke

To return to freestyle stroke mode, exit **Steady Stroke** or the **Draw Style** tools.

Predictive Stroke




Predictive Stroke helps to improve your stroke quality when drawing with your finger or drawing slowly.


If you don't have a stylus, this provides a bit more control. If you're a beginner, you might draw slowly, creating tentative strokes, so this can come in handy.




Notice in this first image, how jagged the lines are. The second was made

with  **Predictive Stroke**. See how smooth the lines are.

Keep in mind, just because you're drawing with your finger, doesn't mean you have to

use . There are times when you might not want or need smooth lines. Want to draw a perfect ellipse, circle, triangle, rectangle, or line?

With  **Predictive Stroke** activated and Level set to for or 5, draw any one of these on the screen and see the tool fix them.




Setting the level of smoothness

Use the smoothness **Level** slider to set just how much you want your stroke to be smoothed. The higher the number, the smoother the stroke. A higher level also makes it easier for Sketchbook to recognize a circle, ellipse, or straight line when drawing freehand. If you want to draw a straight line, sharp corners, a circle or ellipse freehand, set **Level** to 4 or 5. The higher the number the better the shape recognition.

Snapping

Predictive stroke tries to understand your objective when drawing shapes such as lines, triangles, rectangles, and ellipses. However sometimes this can get in your way - an example is if you are trying to draw a straight line with a slight angle, Predictive Stroke will flatten that line.

To avoid this problem, you can turn off snapping  in the Predictive Stroke sub-toolbar.

Note: turning off snapping will not affect rectangular shapes, their angles will still snap to 45 degrees.

Effect of zoom on Predictive Stroke

Your view in the canvas can also influence the amount your stroke is changed. More detail is removed from your stroke, making it smoother when you're zoomed out. When zoomed tightly into your image, less detail is lost.

How to exit Predictive Stroke


To return to freestyle stroke mode, tap  to exit **Predictive Stroke**.

Shape Tools


In Sketchbook, **Draw Style** tools are there to help you create shapes such as ovals, circles, rectangles, and lines.



Using Shape tools in Sketchbook Pro for desktop


In the toolbar, tap a **Draw Style**  tool to help create shapes and lay down lines.

Lines


Use  to draw lines. To change the size of the line, increase or decrease the size of your brush.

For a horizontal or vertical line, hold down the **Shift** key. Then, tap-drag.

Rectangles

Use  to draw a rectangle. The starting point becomes one of the corners.

Ovals

Use  to draw an oval or circle. The starting point will be the **center** point of the oval or circle.

Polylines

Use  to draw a polyline. Double-tap the last point to change the line to a solid line and complete your line.



Exiting the Draw Style tools

Once you are finished with the **Draw Styles**, tap  to exit the tools and return to freestyle stroke mode.

Hiding the UI while you draw

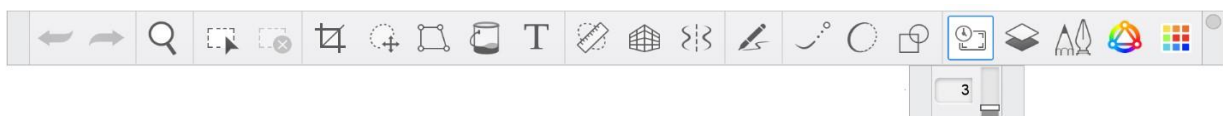
If you prefer to have no UI around while you draw, there are a few different ways you can hide the UI in Sketchbook, depending on which platform you are on.

You can also [customize your UI](#) settings to suit your own preferences.

Auto Hide UI

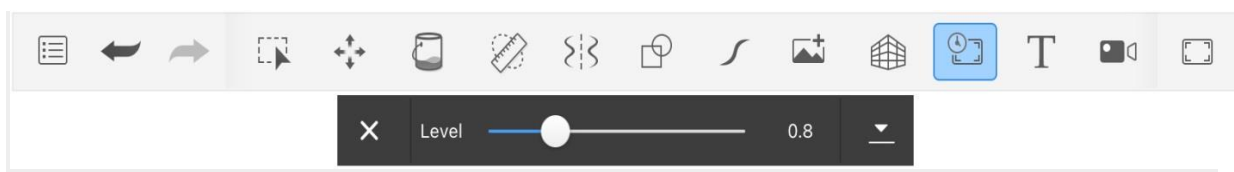
Auto Hide UI is available in Sketchbook Pro 9.0, and Sketchbook 6.0 on mobile.

Auto Hide UI temporarily turns off visibility of the interface during drawing or interaction with UI handles.



The amount of time it takes to restore the UI is adjustable, so you can set the amount of delay that best suits your natural drawing style.


The range is displayed as levels between 1-16 where 1 is 0.5 seconds and 16 is 2 seconds.



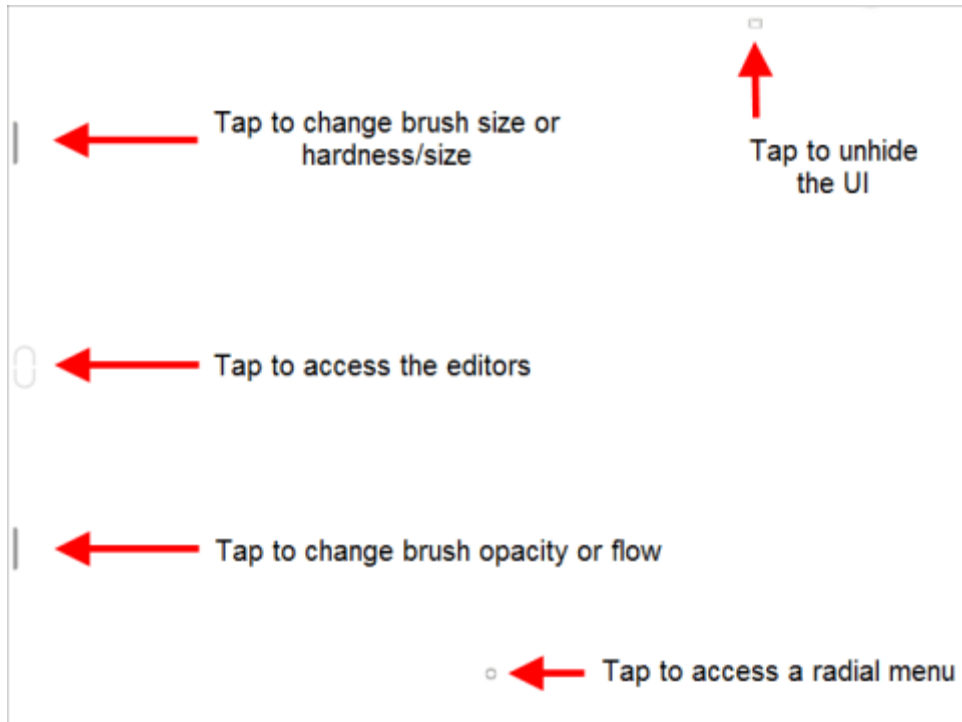


Rapid UI mode

Rapid UI mode is only available in Sketchbook on mobile devices

For mobile users, **Rapid UI** mode provides a full-screen working environment. Work with the UI hidden, yet still have quick access to it, all as you continue drawing. In the toolbar, tap  to enter this mode.

Here is an overview of the UI that will be visible when working in this mode:



Along the side are the **Palette Sliders** and the **Trigger**.

Using Palette Sliders

These change basic brush settings. A readout appears on-screen, indicating the numeric changes. A brush stamp appears showing the new brush stamp.






- To change brush size or hardness and size (depending on the brush), tap-drag the **top** slider.
- To change brush opacity or flow, tap-drag the **bottom** slider.

Using the Trigger

This feature has two functions:

To switch the UI from right-handed to left-handed, drag it to the other edge of the screen.

To quickly access the Brush, Color, and Layer Editors and their settings, with your non-

dominant hand, tap the **Trigger** , then drag-hold up or down to select an editor. Then with your other hand, tap whatever you want to select it in the editor or tap-drag values to change settings.

Flipping the UI

If you're left-handed, here's another reason you'll love this. You can flip the UI to the other side of the screen – where it's not obscured by your hand.

To flip the position to optimize left-handed usage, drag the 'Trigger' UI handle to the other side.

No matter which hand you draw with, your non-dominant hand can now help. Use it to access the UI, as you continue drawing. Change brushes, brush settings, colors, color settings, even layers and layer properties, as you draw with your other hand. Use the radial menu to access other tools.

Marking Menu

At the bottom of your canvas, you'll find the **marking menu**. Tap it to access a radial menu of tools and the [Corner tools](#).

You can customize which tools appear in the marking menu in [Preferences](#).

