

Vector Graphics Software



Adobe Illustrator + Figma

updoug.com/#workshop

Workshop Kit

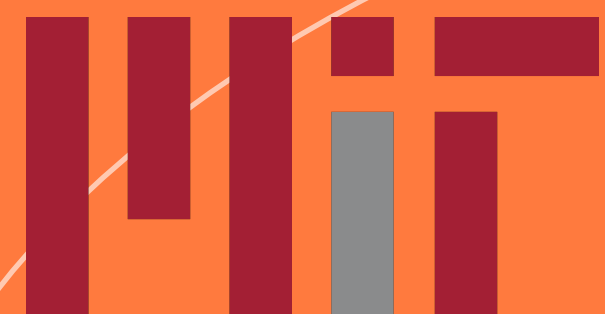
updoug.com/#workshop

Douglas Sanchez

MIT 14' with B. Eng. in Product Design

**Lead product designer at Salesforce
working on Heroku**

**Adobe Certified Expert - Illustrator
and Nielsen Norman Group - UXC**



01 Agenda

Scalable Vector Graphics

SVG (Scalable Vector Graphics)

SVG Applications

Vector vs. Raster (Bitmap)

Vector Graphics Software

Adobe Illustrator vs. Figma

02 Agenda

Vector Graphics Editors

File Management

Canvas

Tools Panel/Bar

Control/Properties

Workspace Panel

Artboards / Frames

Layers Panel

Selection/Move Tool

Pen Tool

Pencil Tool

Shape Tool

Colors & Swatches

Stroke & Fill

Color Contrast

Type/Text Tools

Placing an Image

Figma to Illustrator

Image to Vector

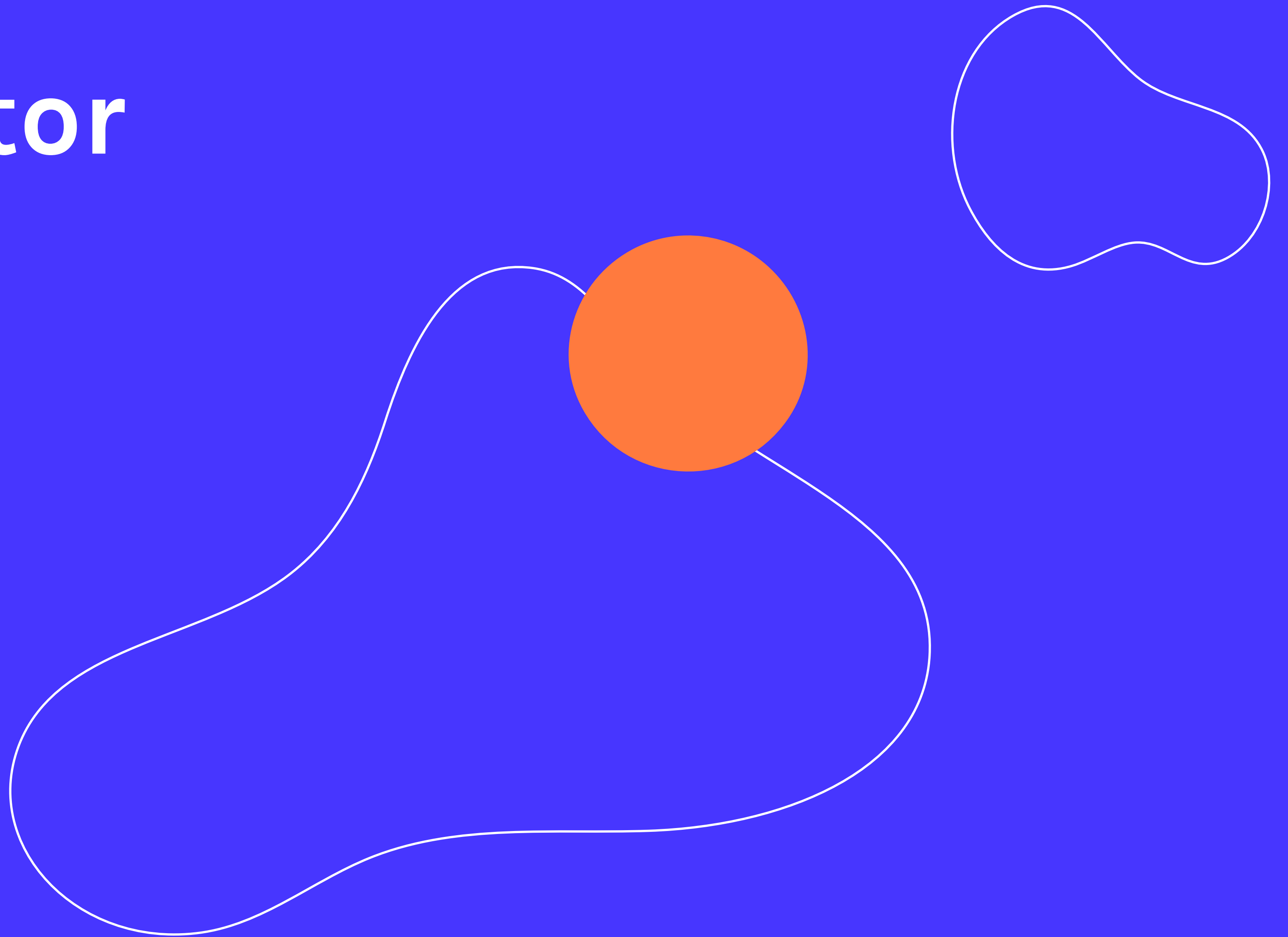
Scalable Vector Graphics

Vector vs. Raster (Bitmap)

SVG (Scalable Vector Graphics)

Vector Graphics Software

Adobe Illustrator vs. Figma



Scalable Vector Graphics (SVG)

Scalable Vector Graphics (SVG) is an XML-based vector image format for two-dimensional graphics with support for interactivity and animation.

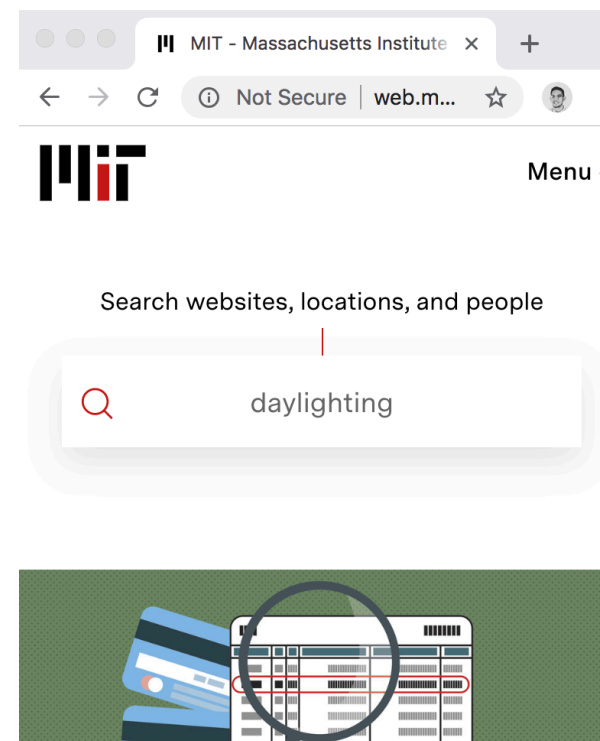


```
MIT_logo.svg
1  <?xml version="1.0" encoding="utf-8"?>
2  <!--MIT Logo-->
3  <svg xmlns="http://www.w3.org/2000/svg" height="166" width="321">
4    <g stroke-width="35" stroke="#A31F34">
5      <path d="m17.5,0v166m57-166v113m57-113v166m57-166v33m58,20v113" />
6      <path d="m188.5,53v113" stroke="#8A8B8C" />
7      <path d="m229,16.5h92" stroke-width="33" />
8    </g>
9  </svg>
10
```

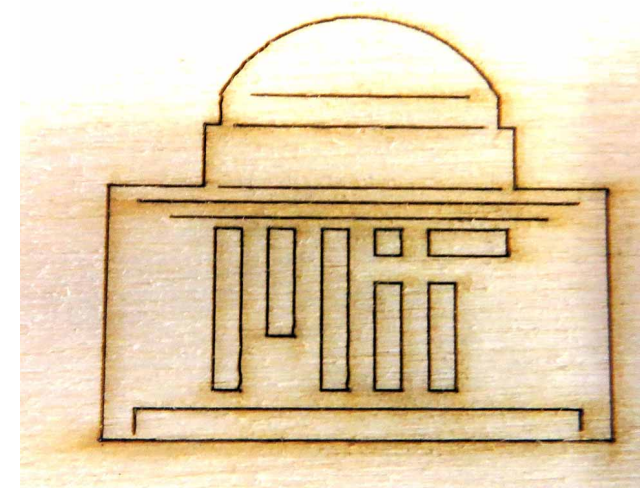

Scalable Vector Graphics (SVG)

Scalable Vector Graphics (SVG) is an XML-based vector image format for two-dimensional graphics with support for interactivity and animation.

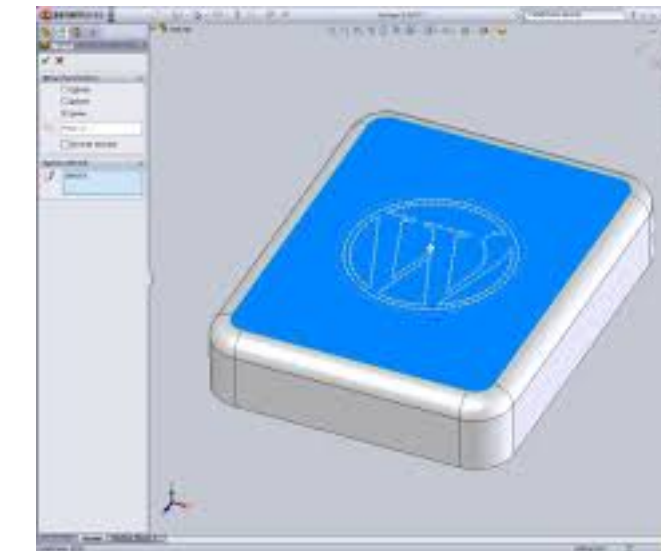
Websites & Apps



Laser Cutter



SolidWorks



Drop the image here

CNC



Vinyl Cutter



Print



Vector vs. Raster (Bitmap)

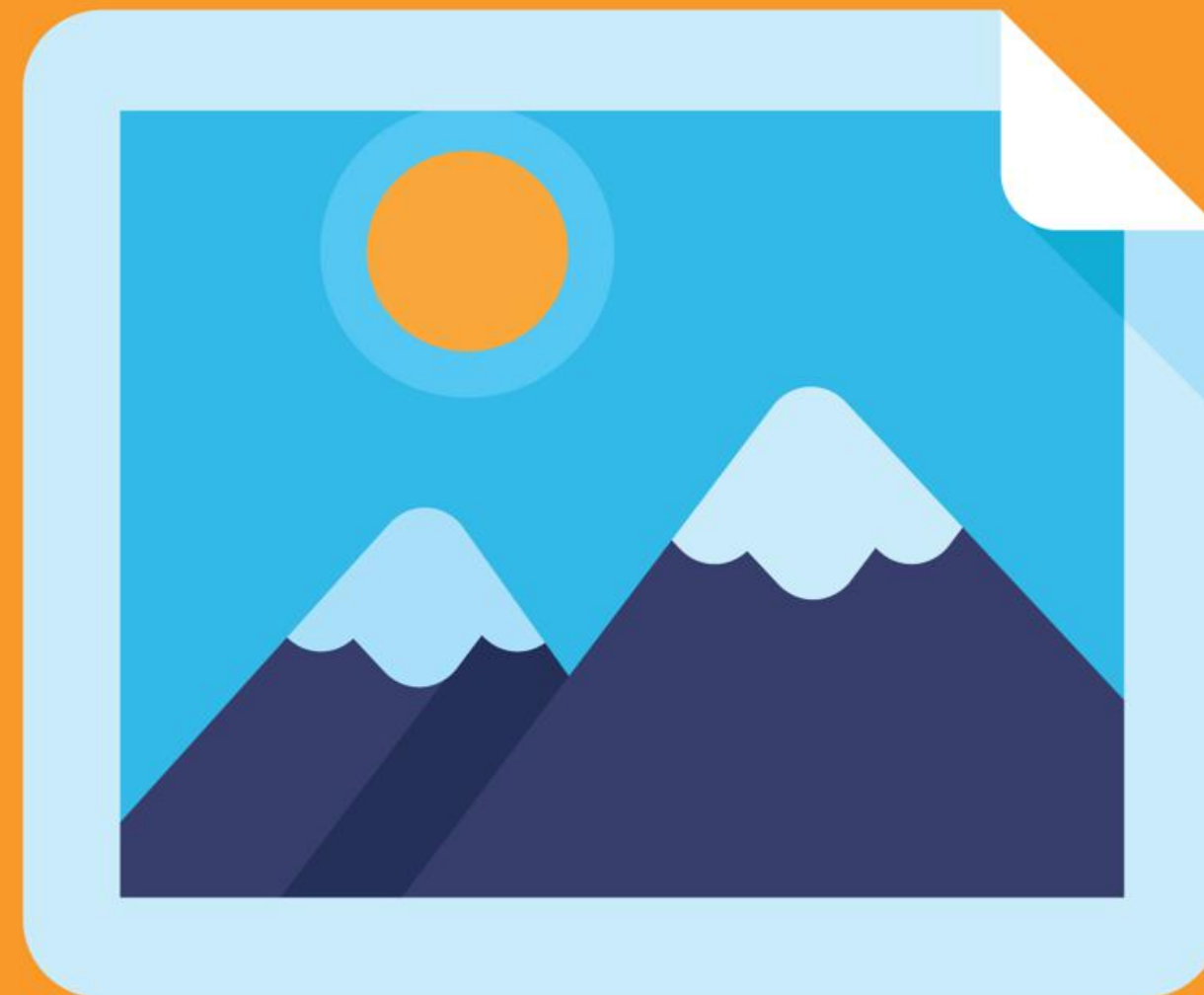
This images illustrate the difference between raster and vector images. The raster image is composed of a fixed set of pixels, while the vector image is composed of a fixed set of shapes. In the picture, scaling the raster reveals the pixels while scaling the vector image preserves the shapes.



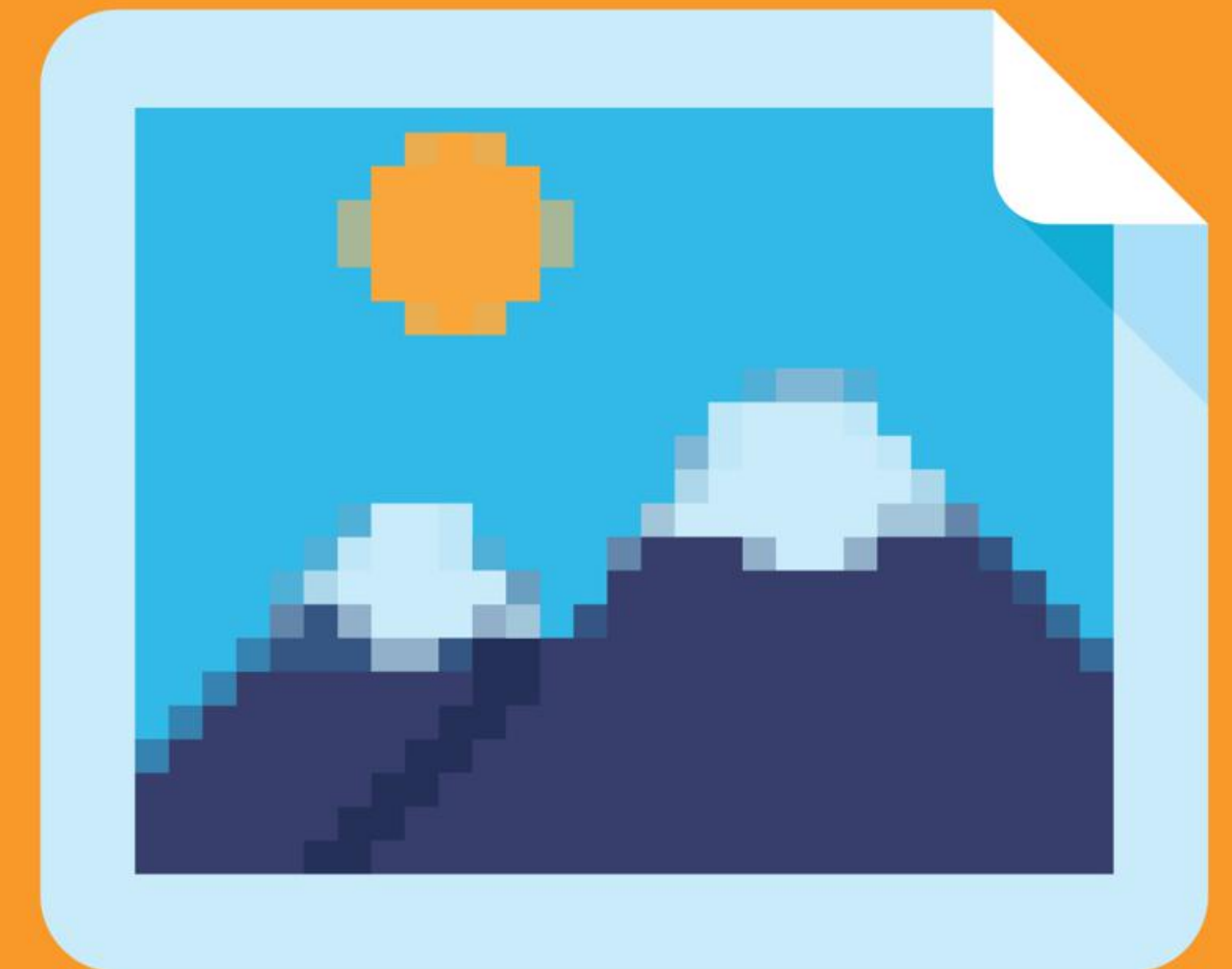
VECTOR



RASTER

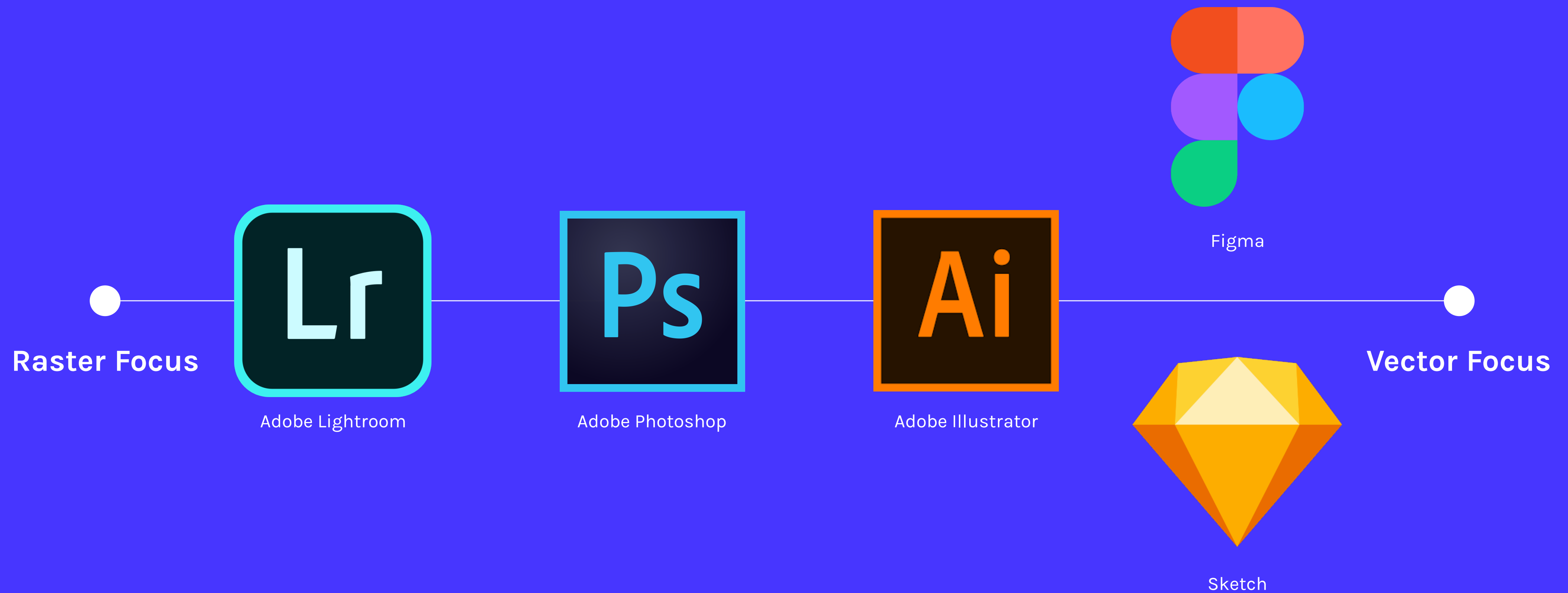


VECTOR



RASTER

Vector Graphics Software



Adobe Illustrator vs. Figma



Desktop App

Digital & Print

Color Spaces (RGB, CMYK)

Units (pts, pixels, inches, mm)

File Support

.png, .jpg, .svg,

.BMP, .css, .dwg, .dxf,

.emf, .swf, .pct, .psd, .tif,

.TGA, .txt, .wmf, .ai



Web App & Desktop App

Digital

Color Space (RGB)

Units (pts)

File Support

.png, .jpg, .svg,

.pdf

Design, Prototype, and Collaborate

Vector Graphics Editors

File Management

Canvas

Tools Panel/Bar

Control/Properties

Workspace Panel

Artboards / Frames

Layers Panel

Selection/Move Tool

Pen Tool

Pencil Tool

Shape Tool

Colors & Swatches

Stroke & Fill

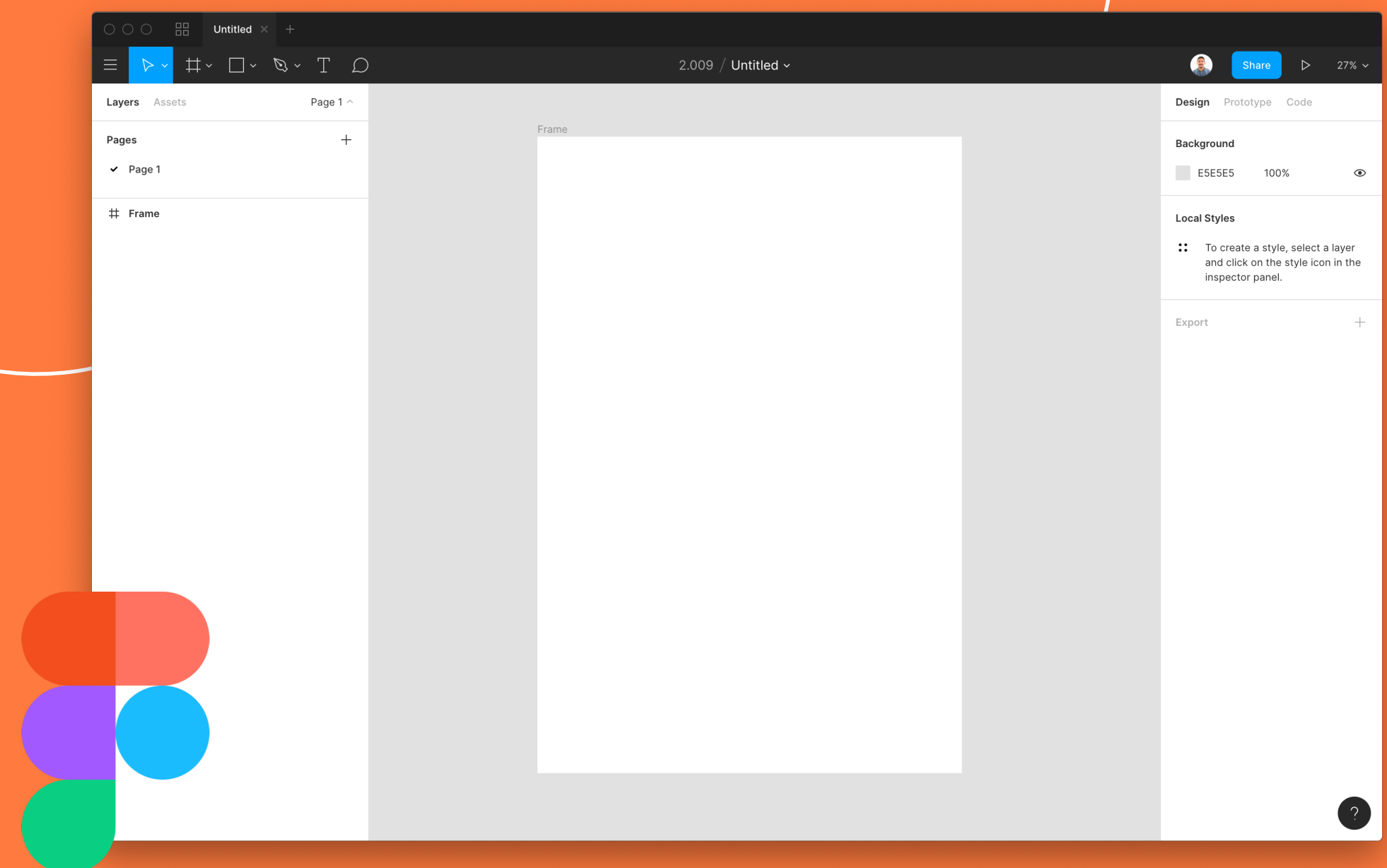
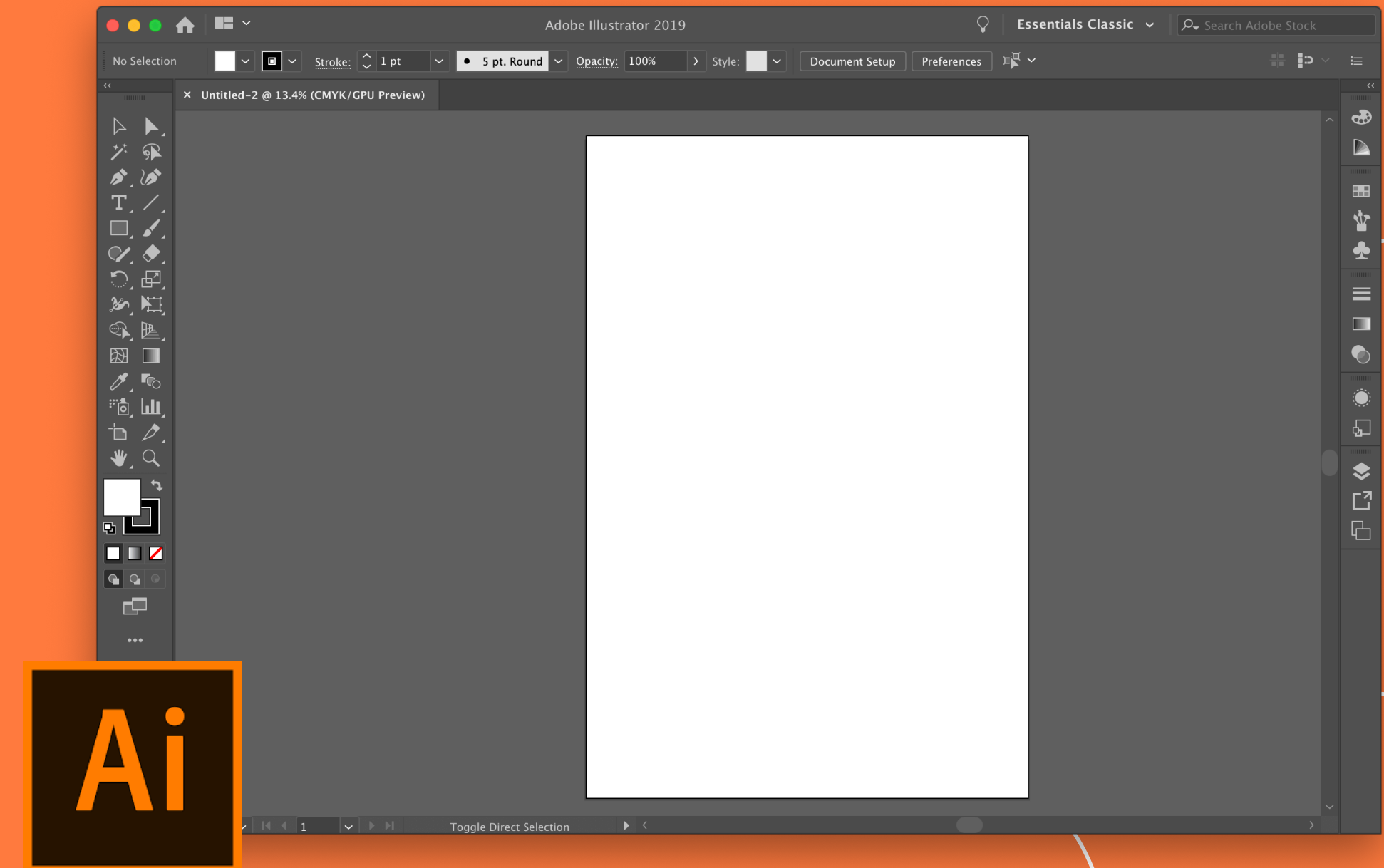
Color Contrast

Type/Text Tools

Placing an Image

Figma to Illustrator

Image to Vector



File Mangement



Files (.ai)



Teams > Projects > Files (.fig) > Pages

File Mangement



Teams > Projects > Files (.ai)

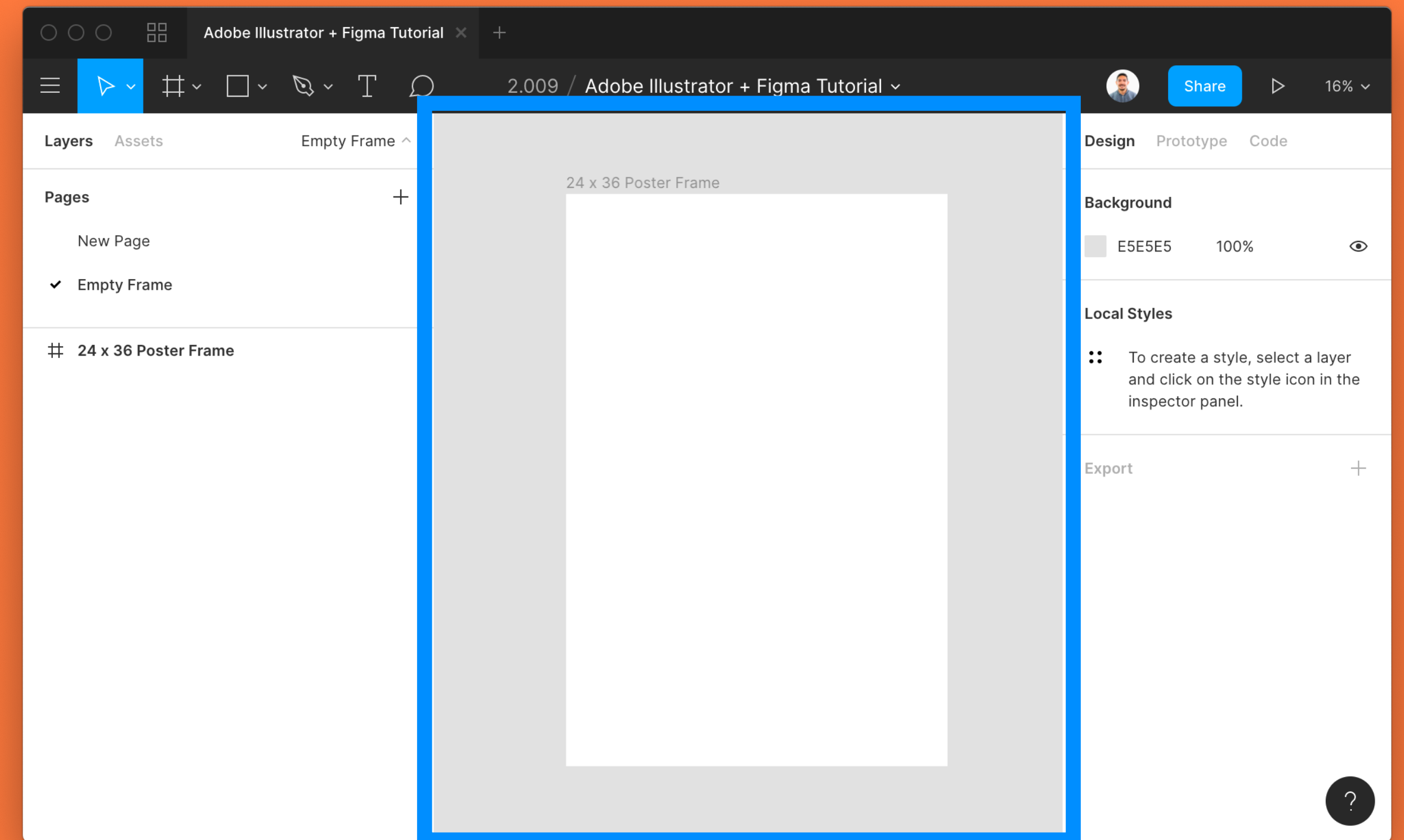
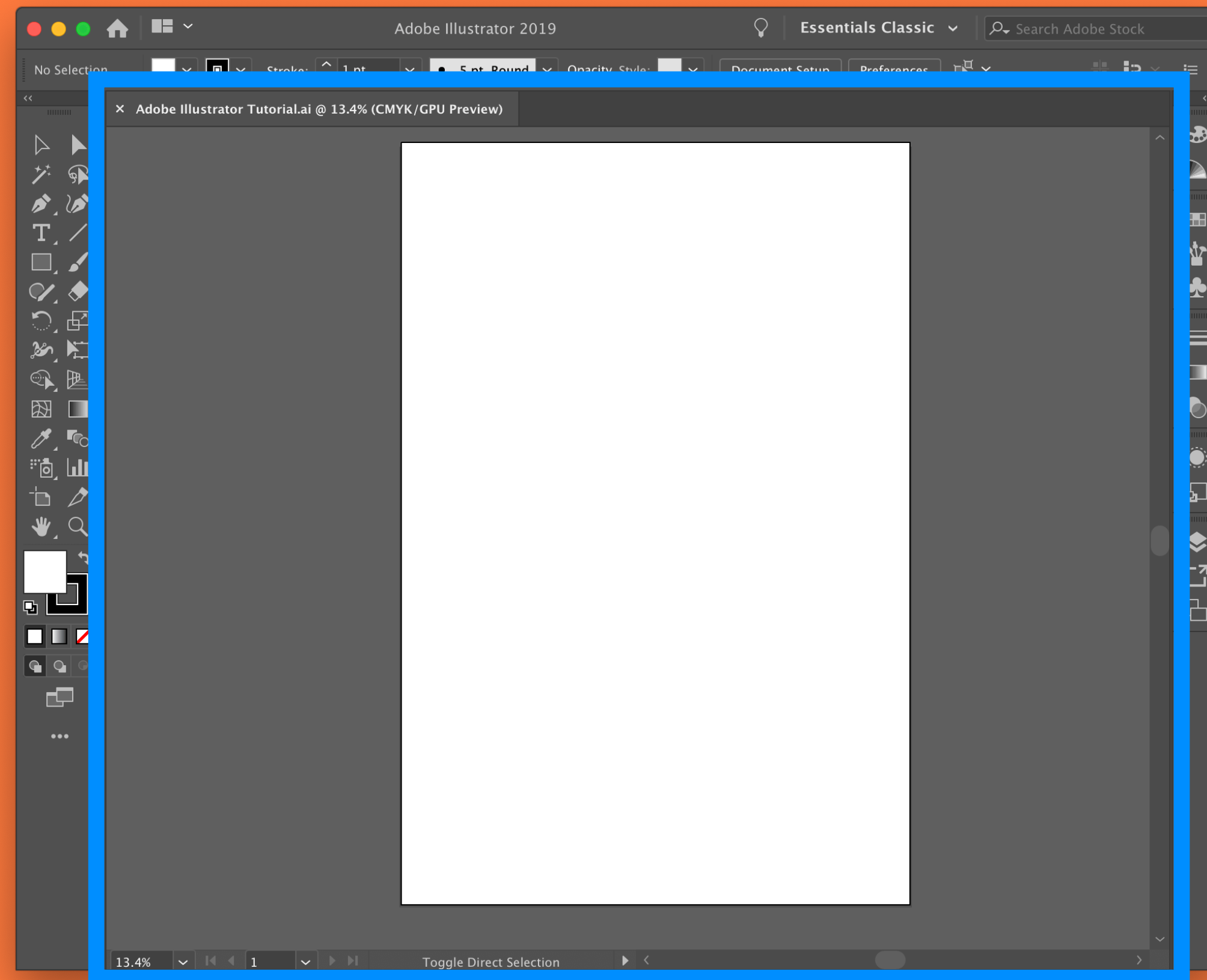
Dropbox / Google Drive Folders



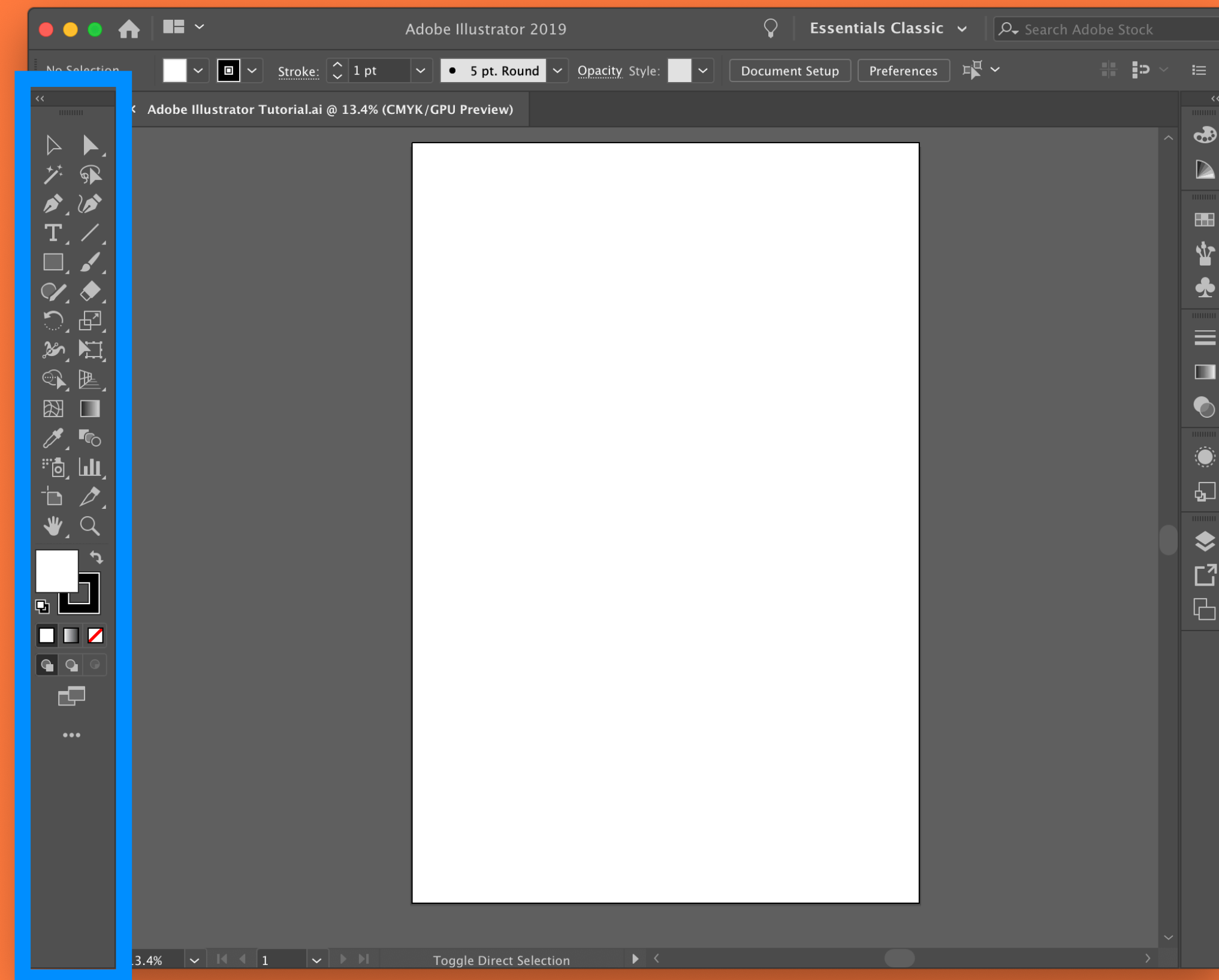
Teams > Projects > Files (.fig) > Pages



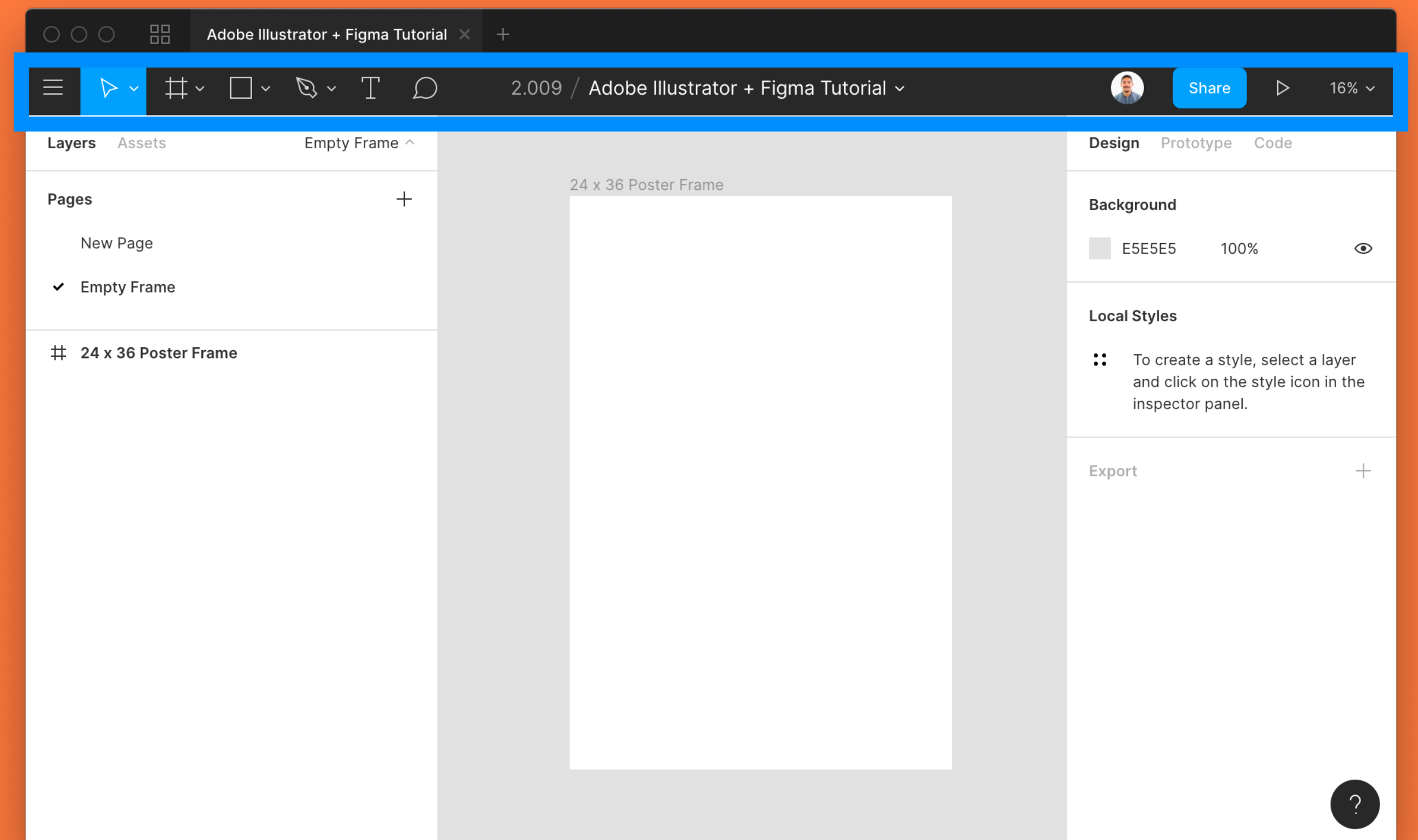
Canvas



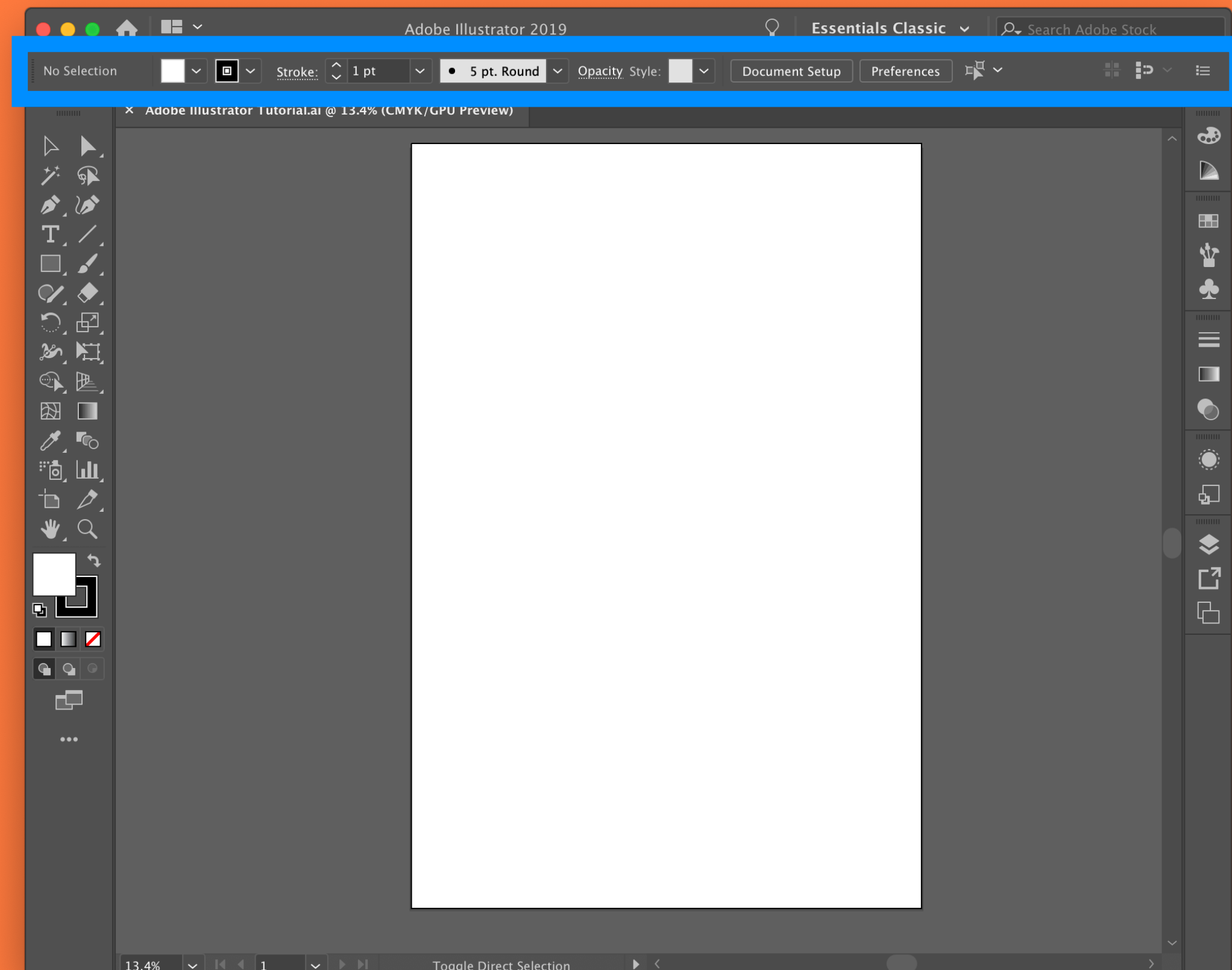
Tools Panel



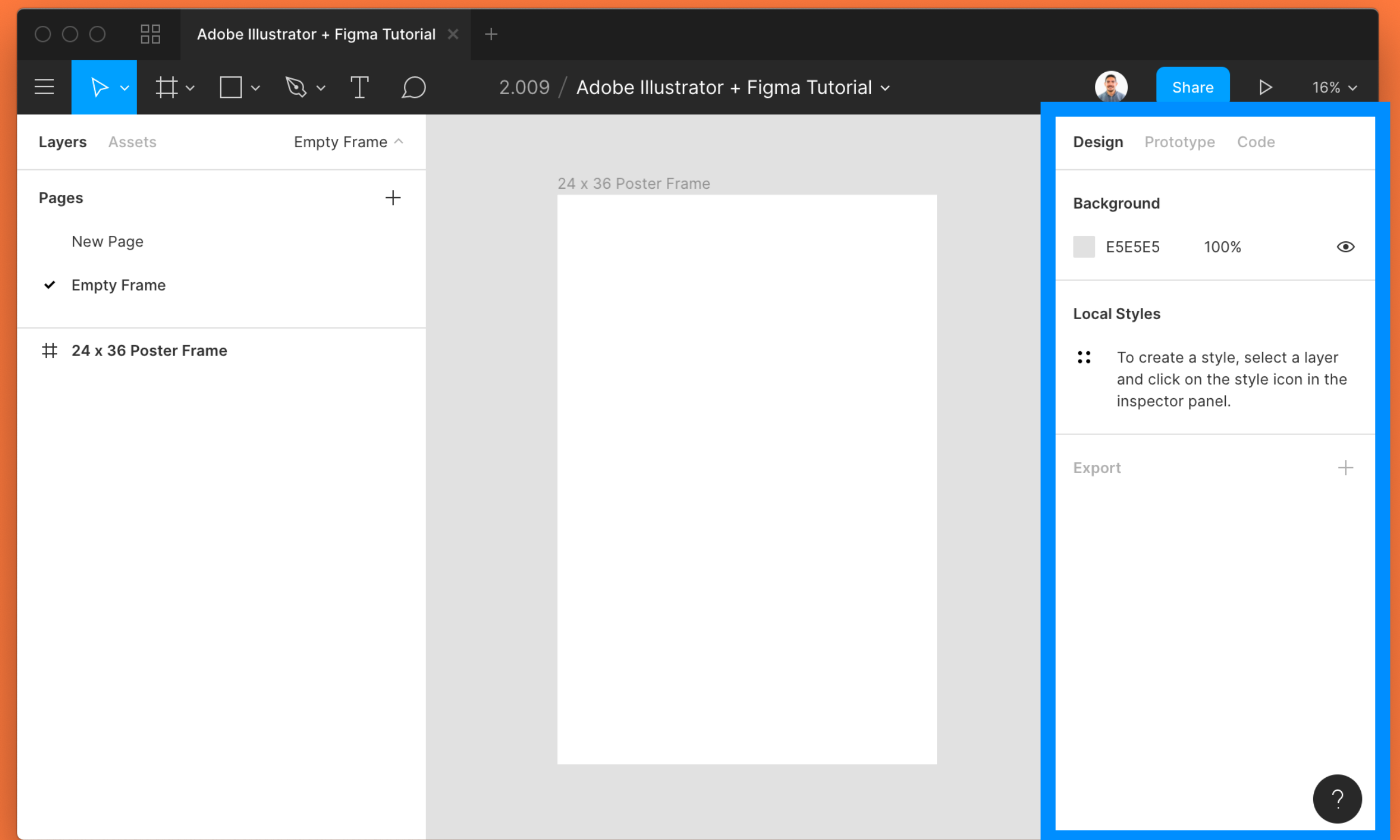
Tool Bar



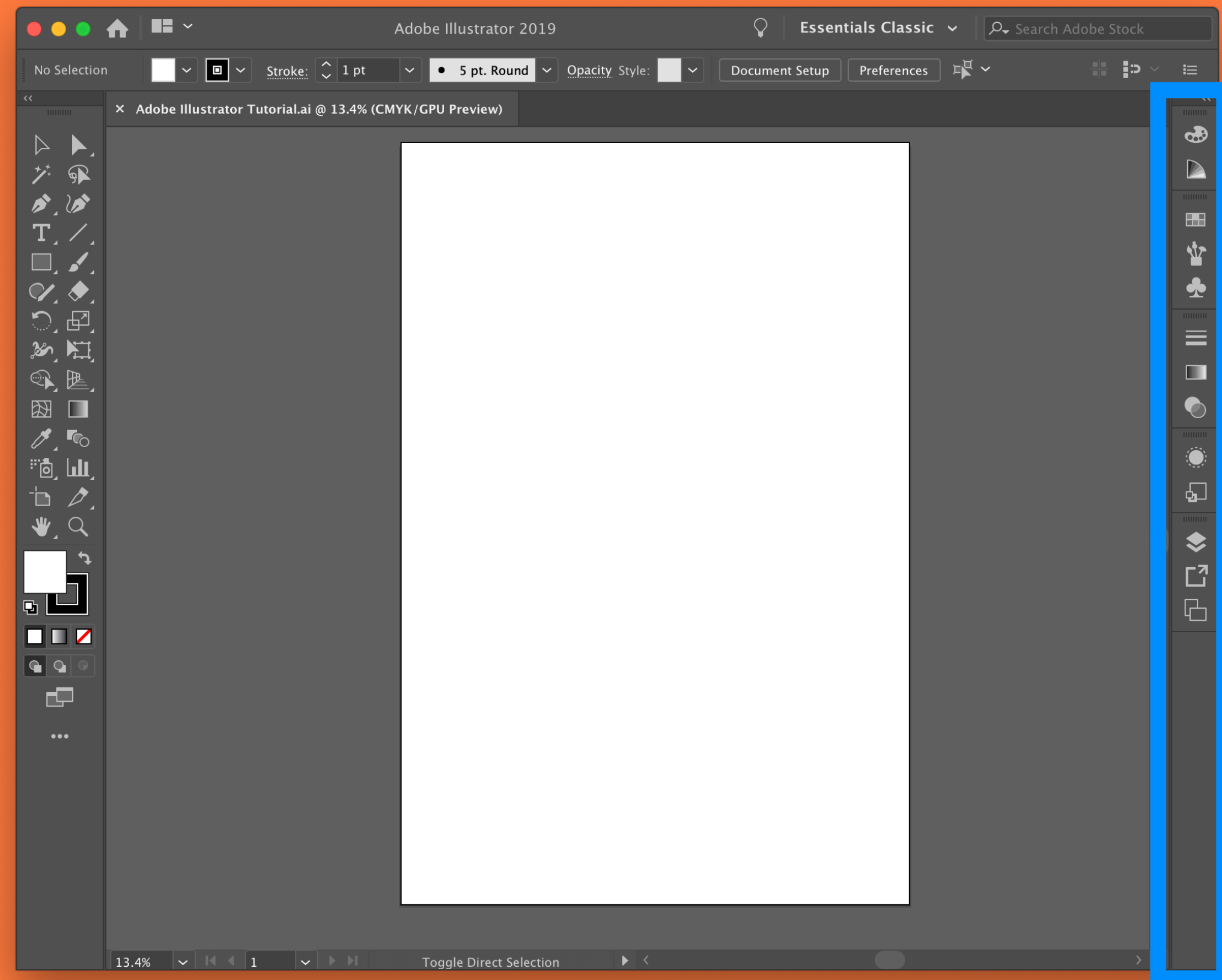
Control Panel



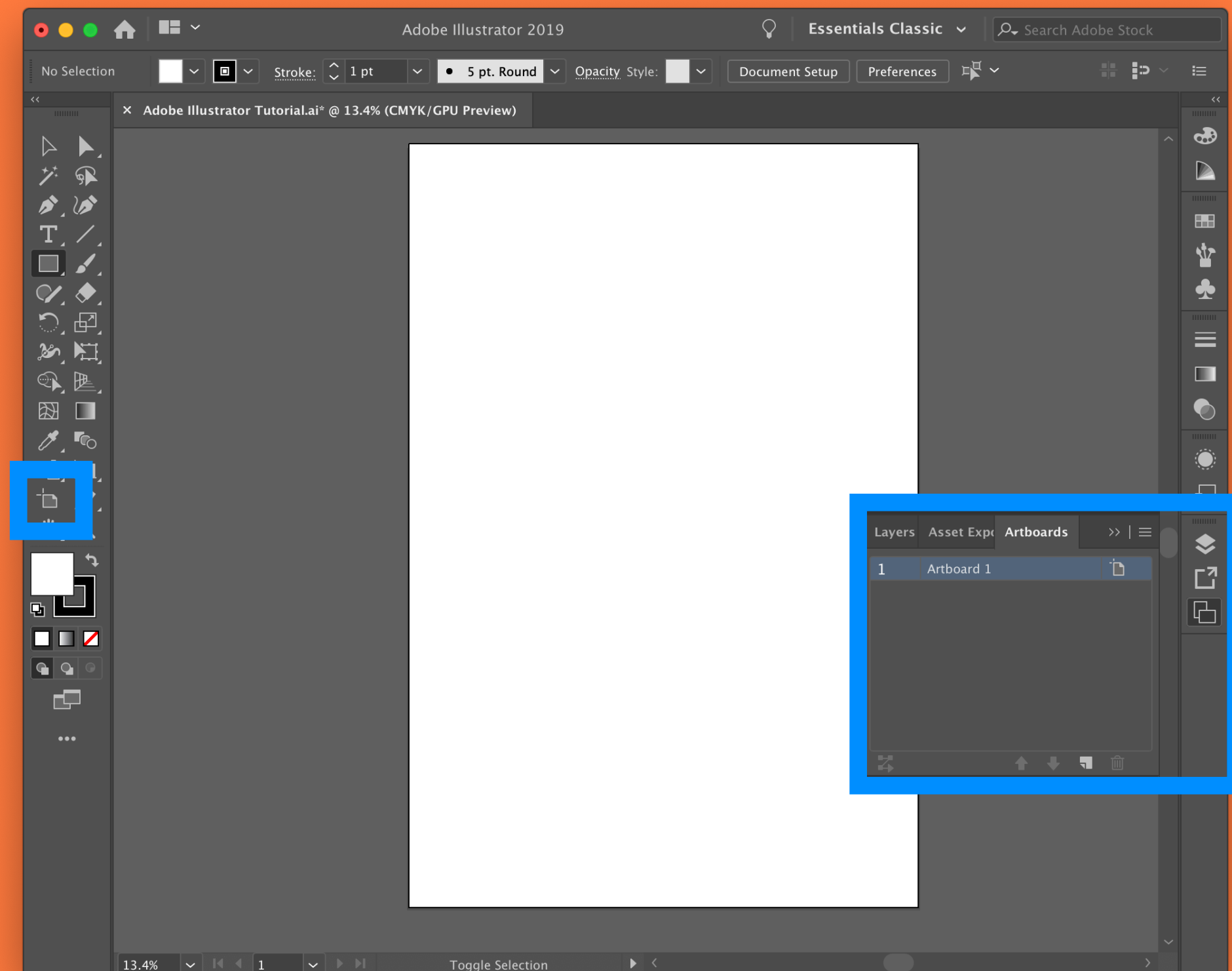
Properties Panel



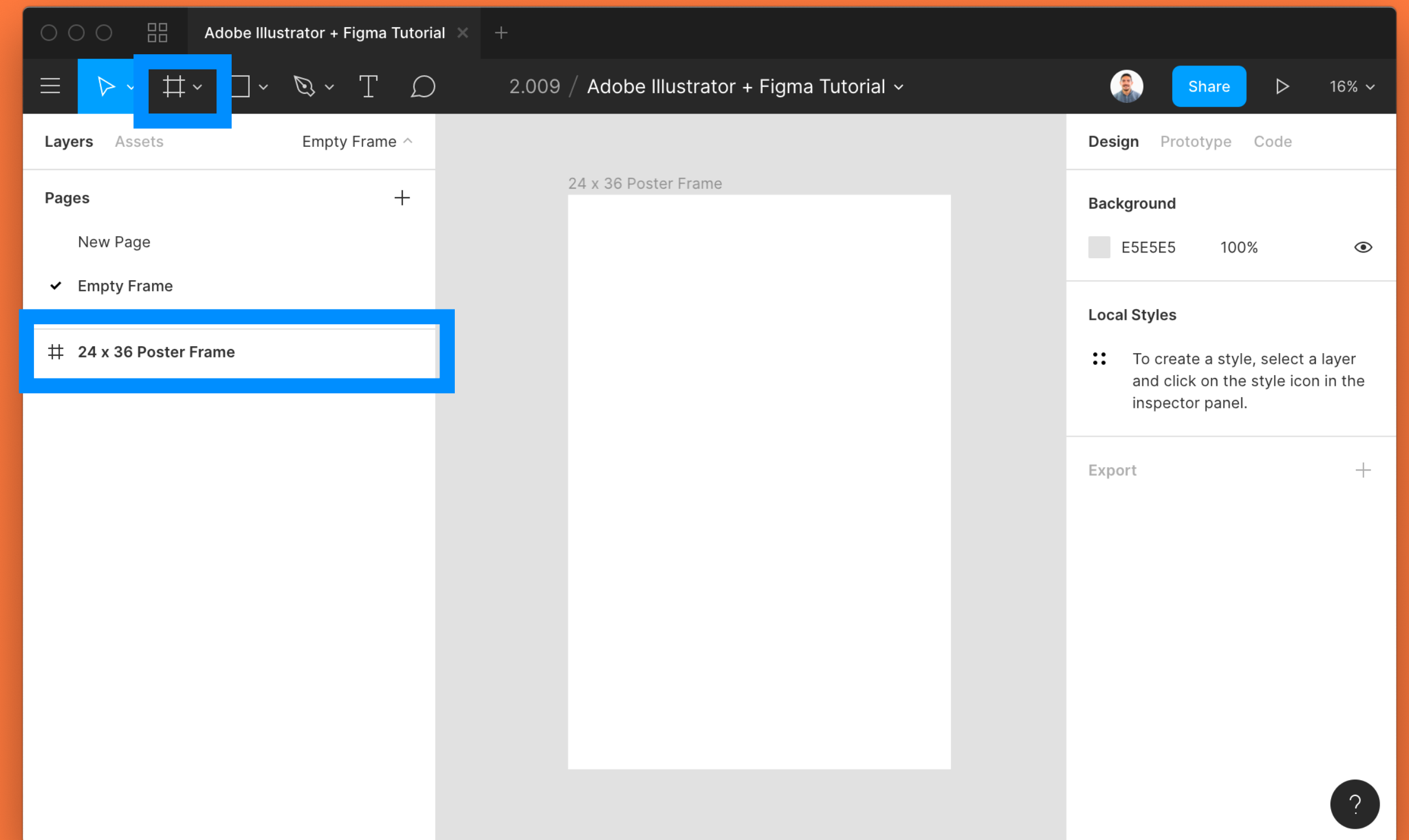
Workspace Panel



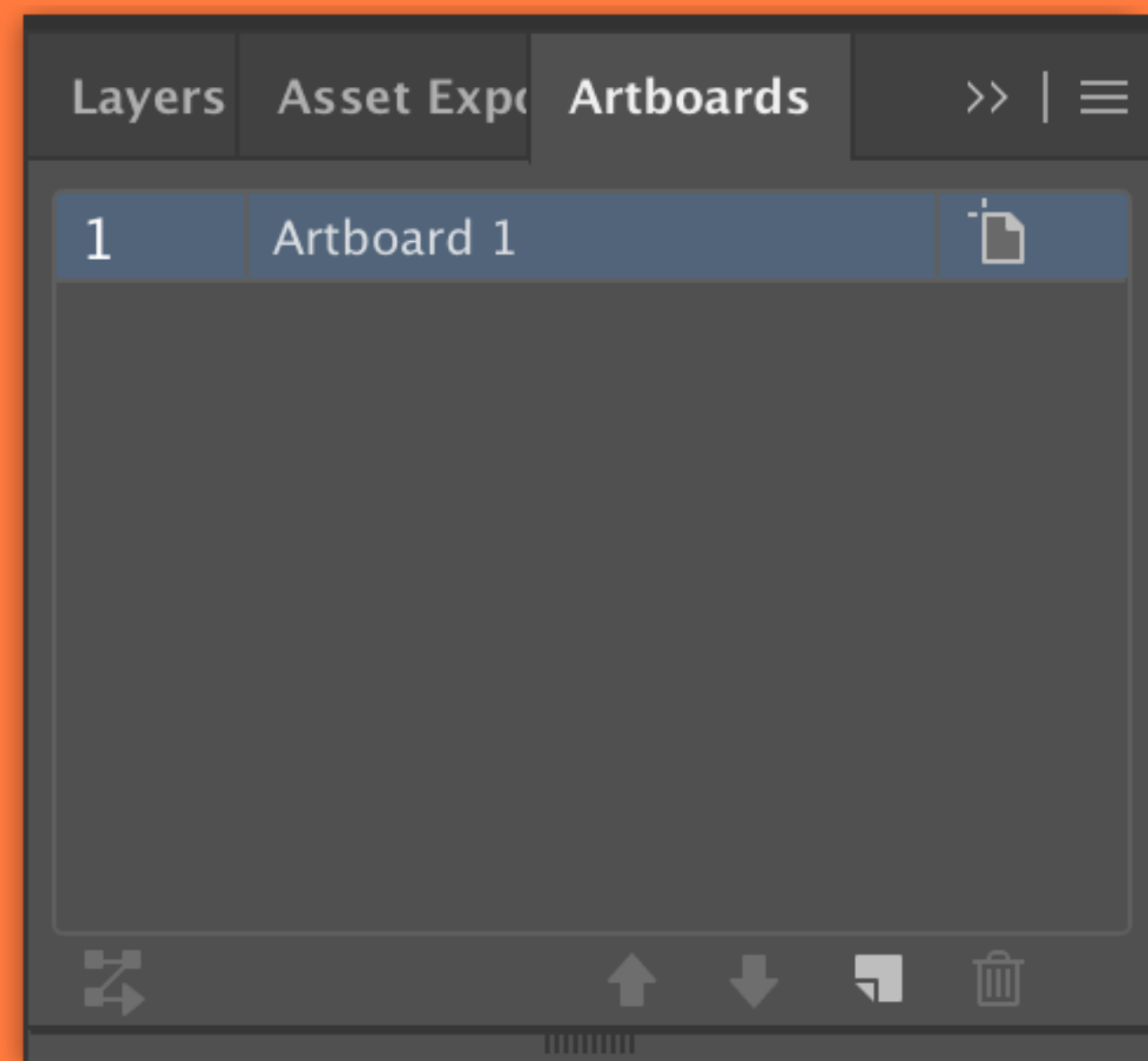
Artboards



Frames



Artboards



Shift

+

O

Frames



▼ # 24 x 36 Poster Frame



F

A

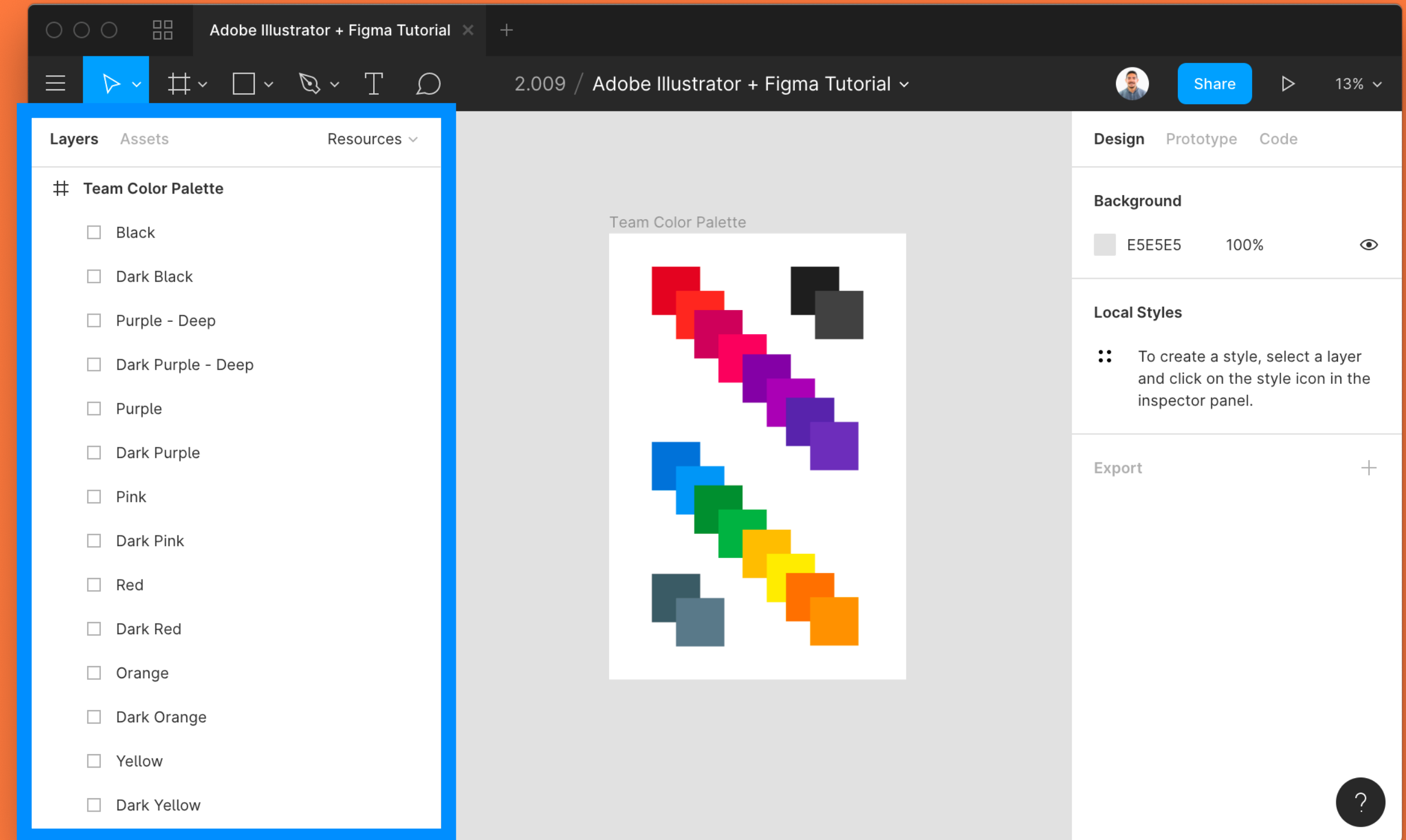
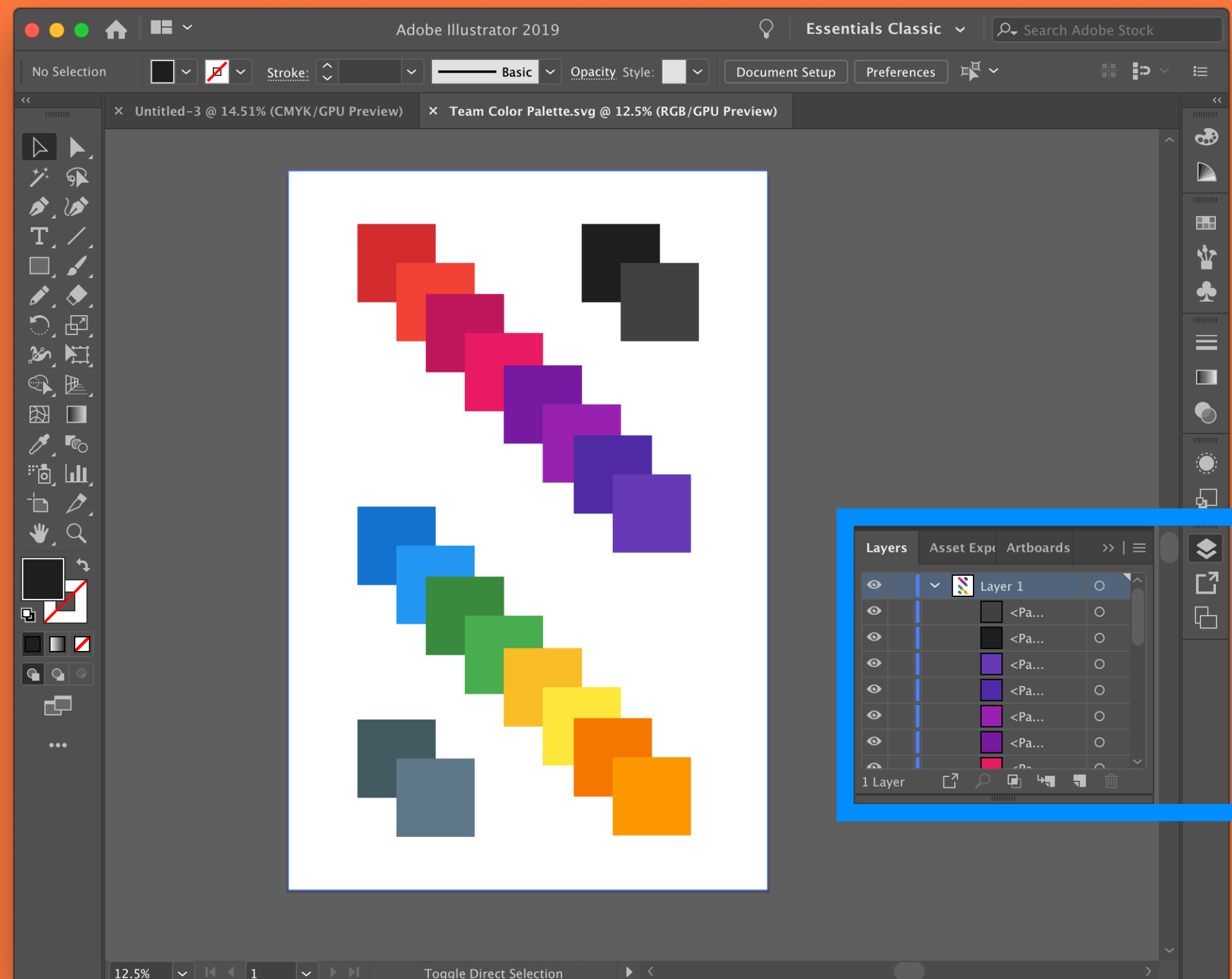


1 inch = 72 pts

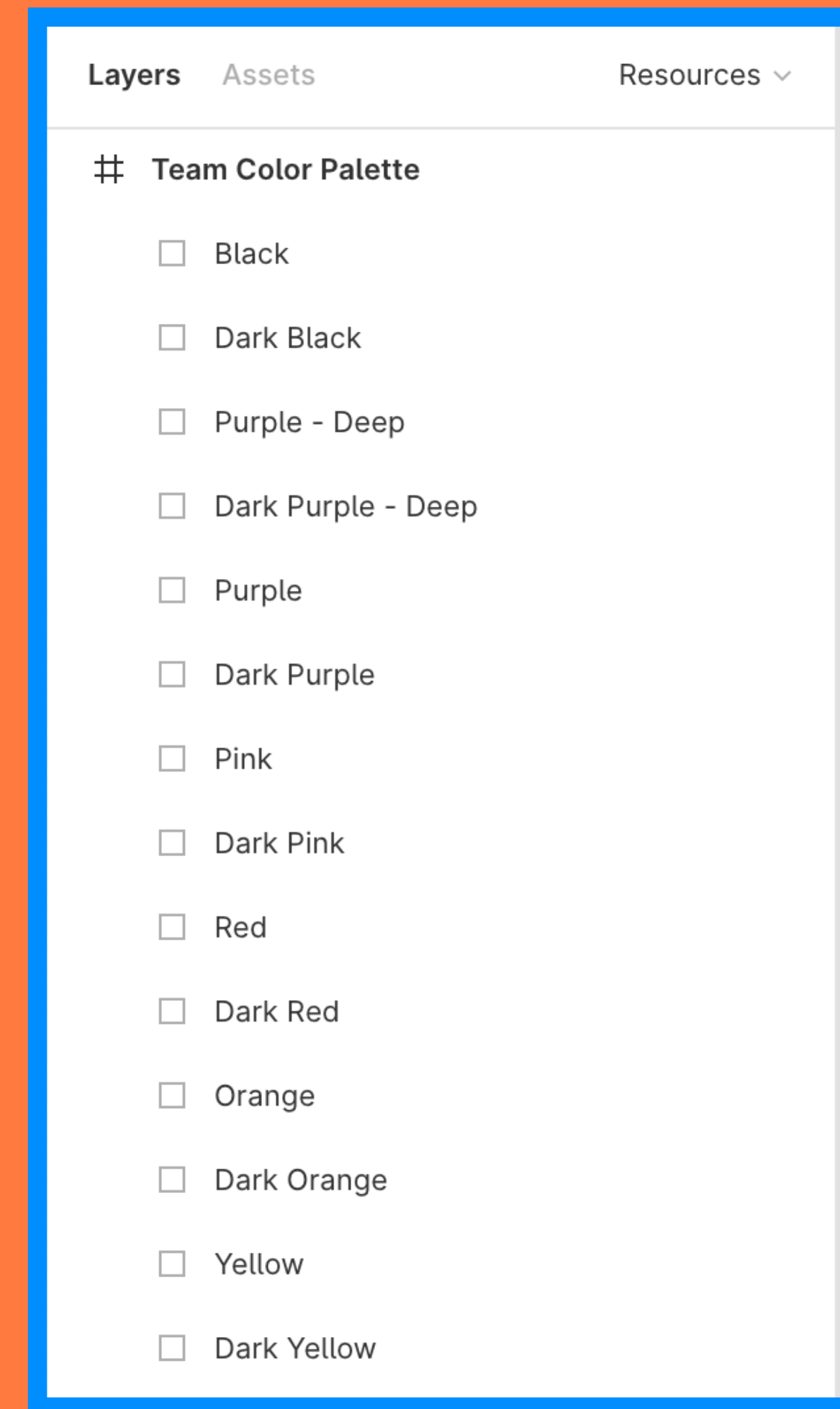
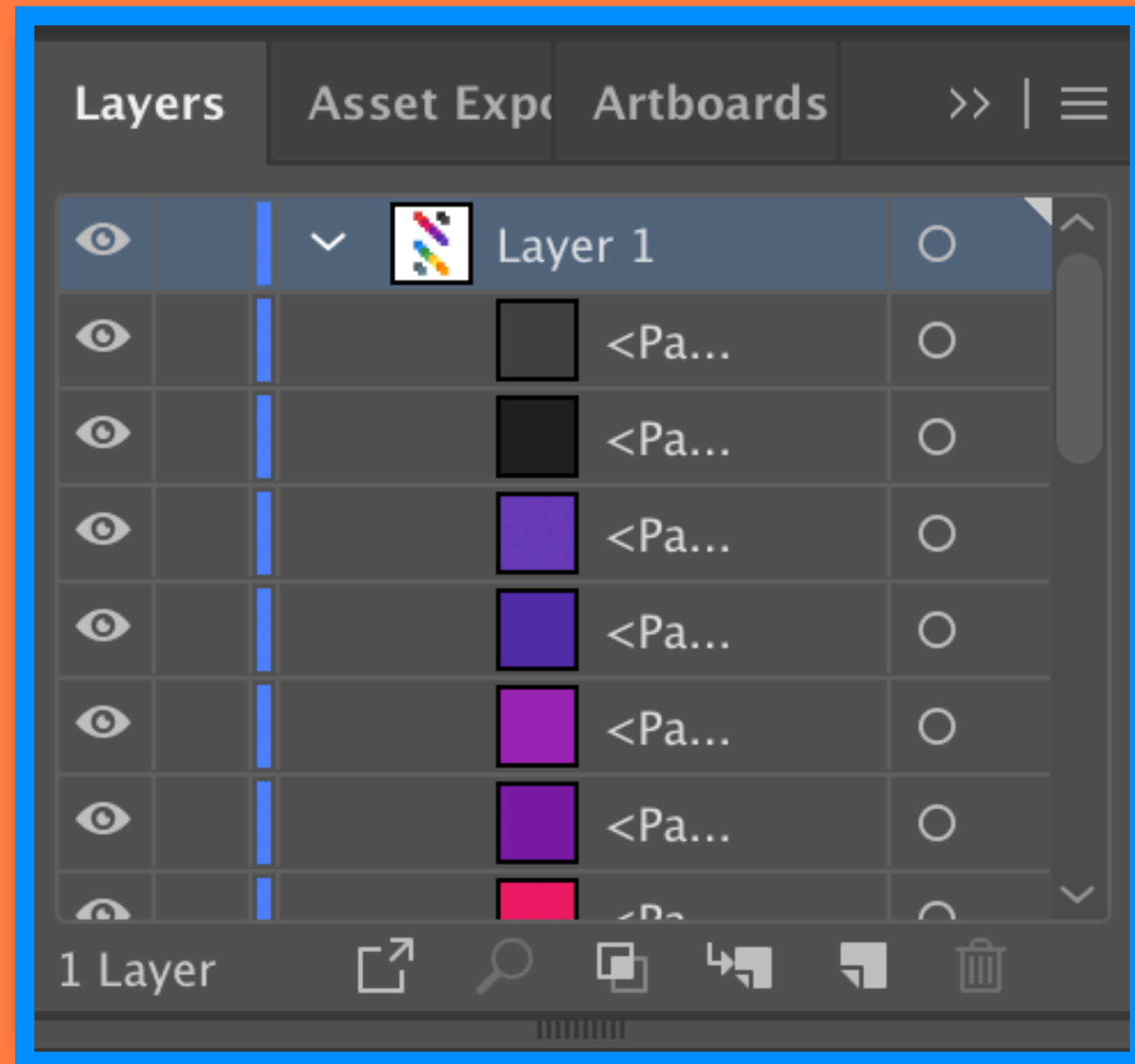
24 in x 36 in =

1728 pts x 2592 pts

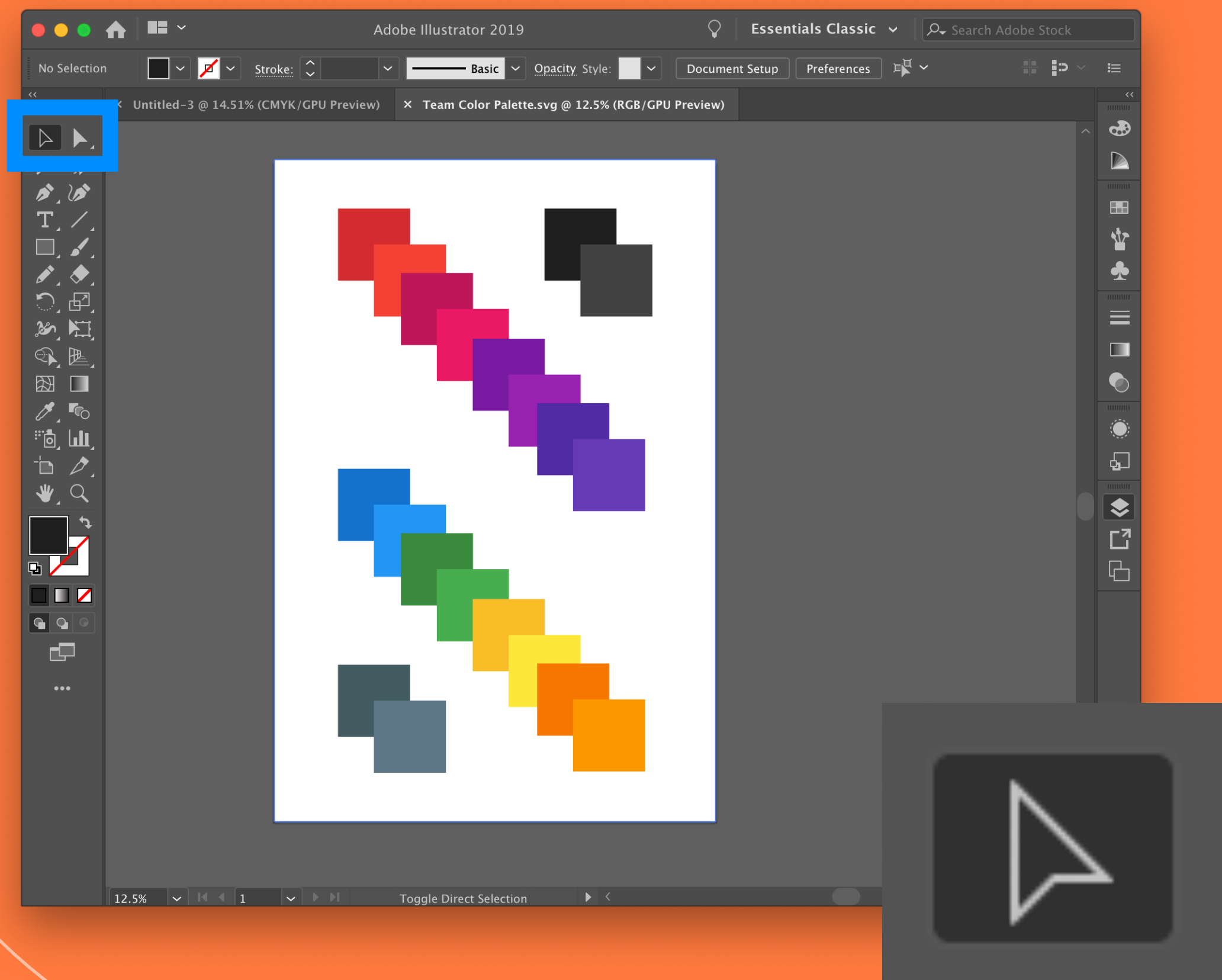
Layers Panel



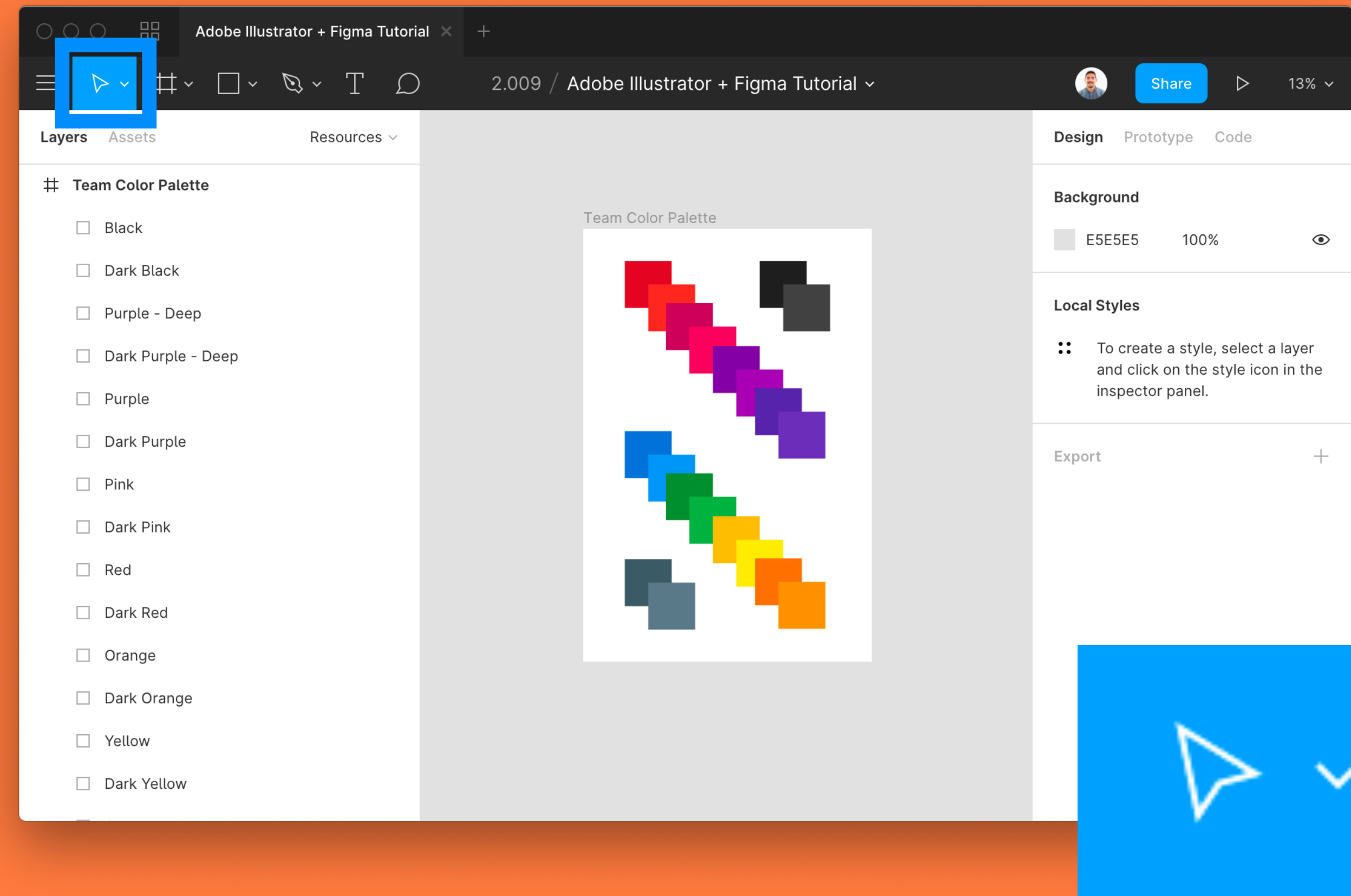
Layers Panel



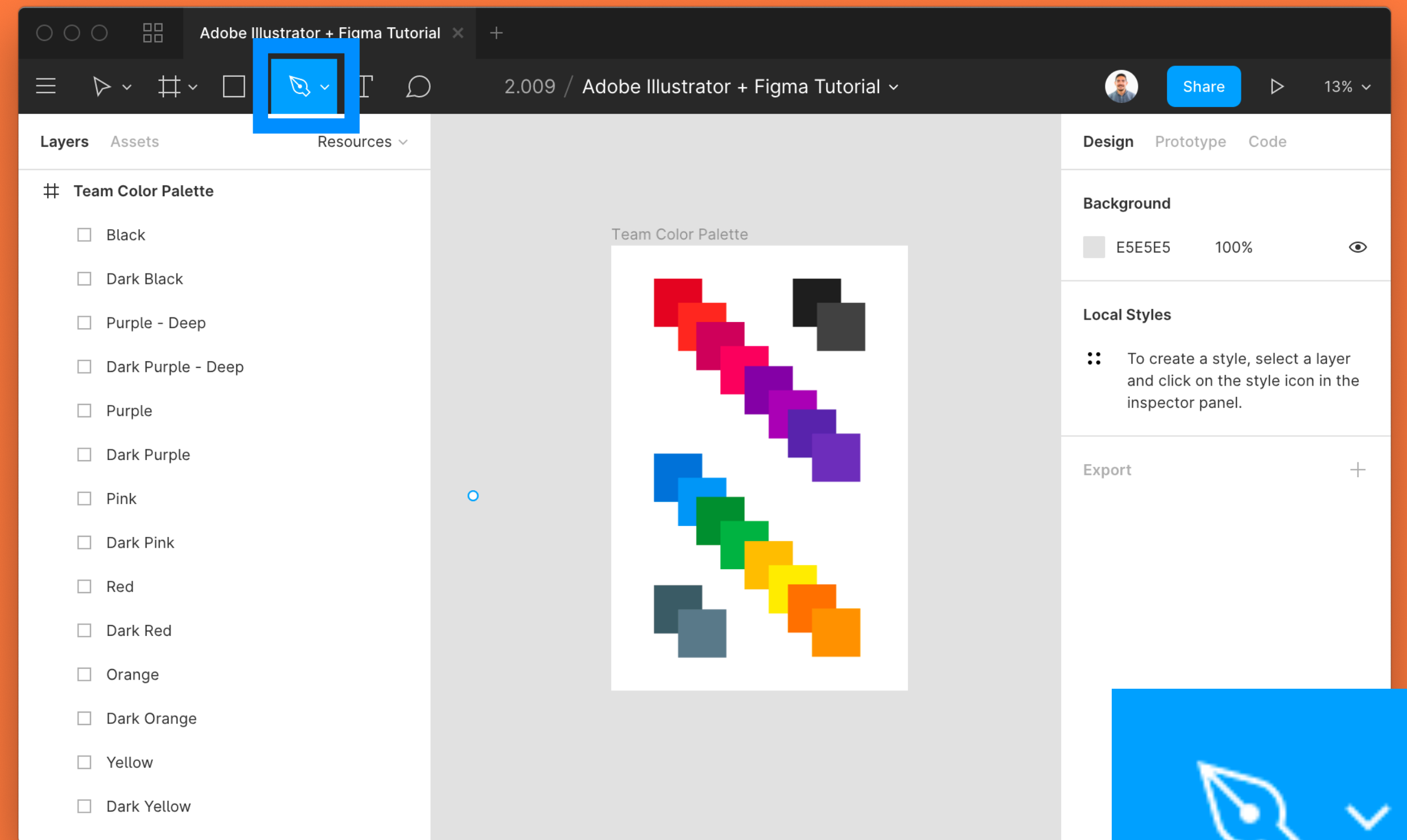
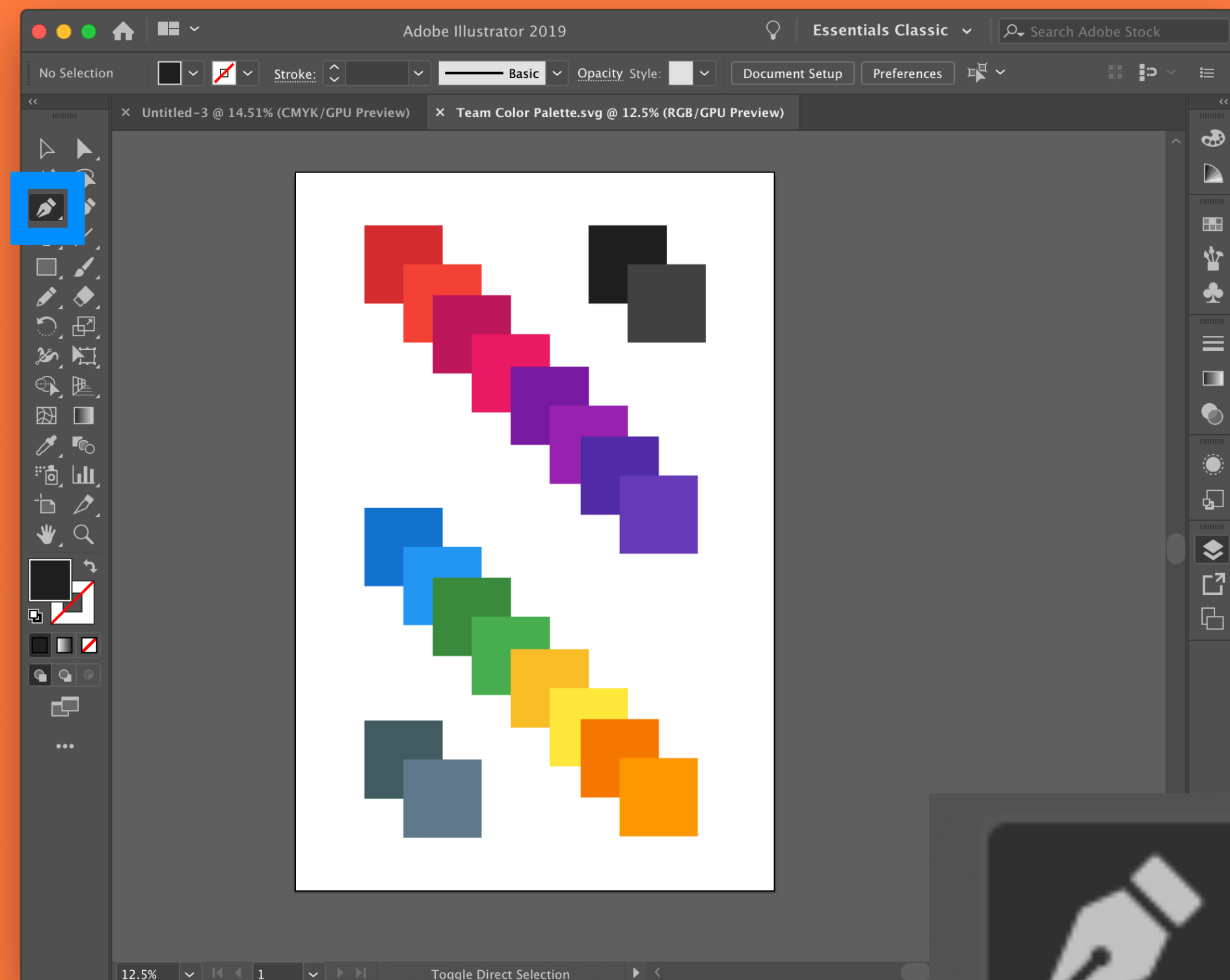
Selection Tools



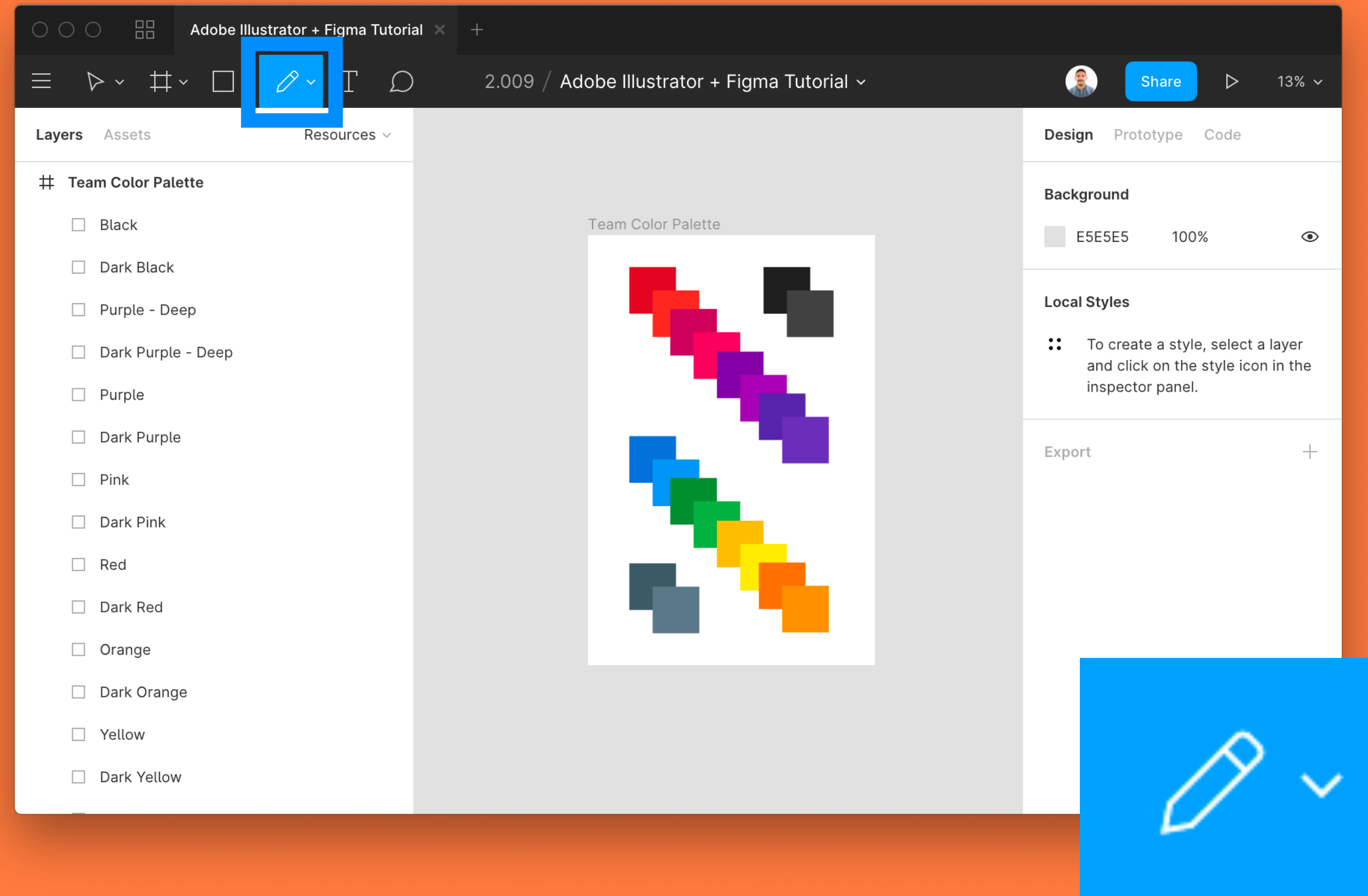
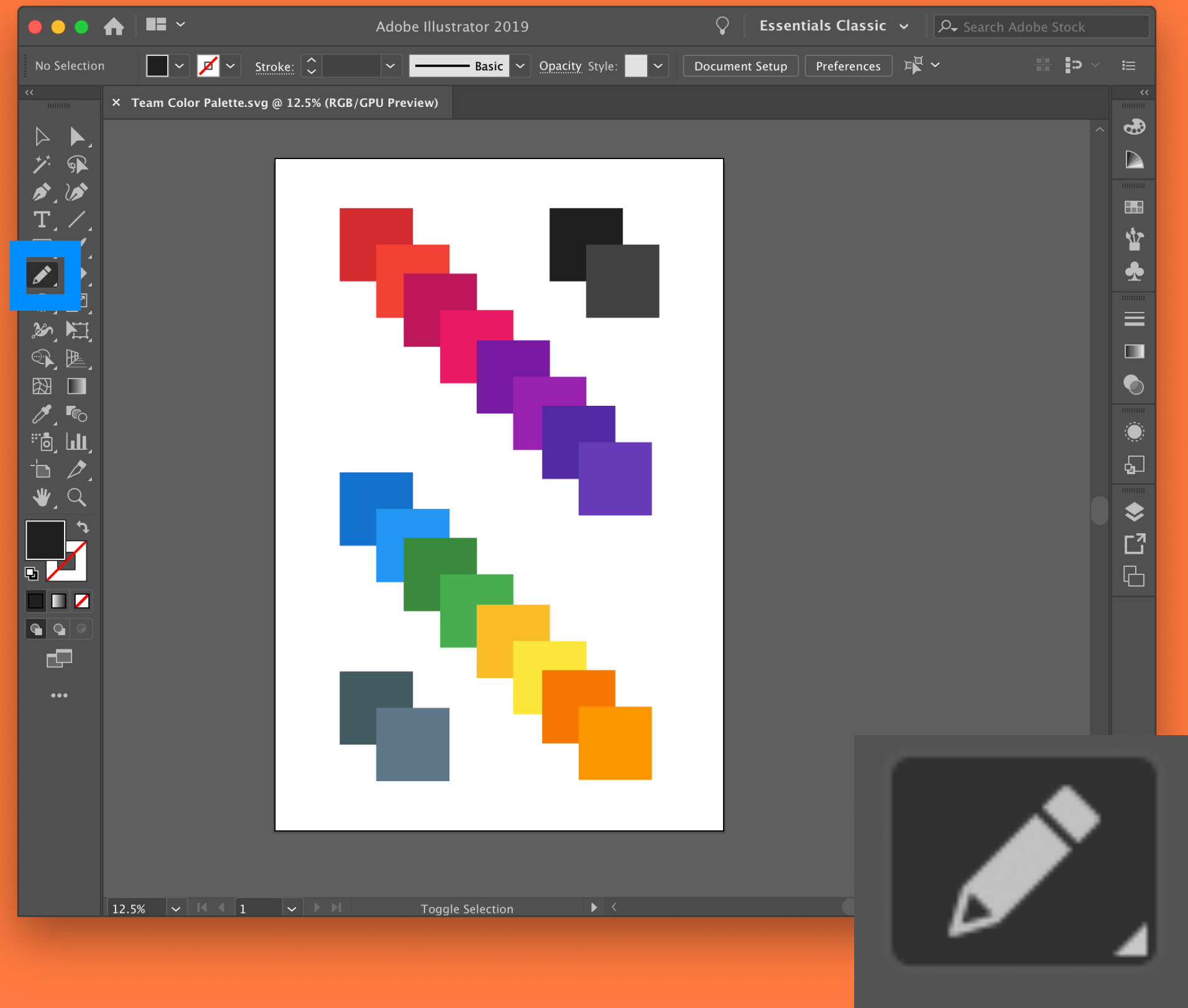
Move Tool



Pen Tool



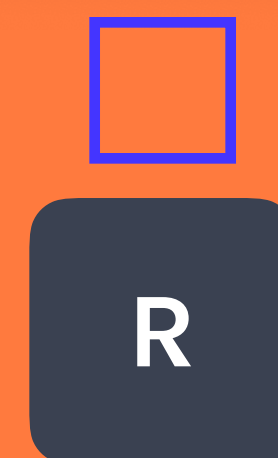
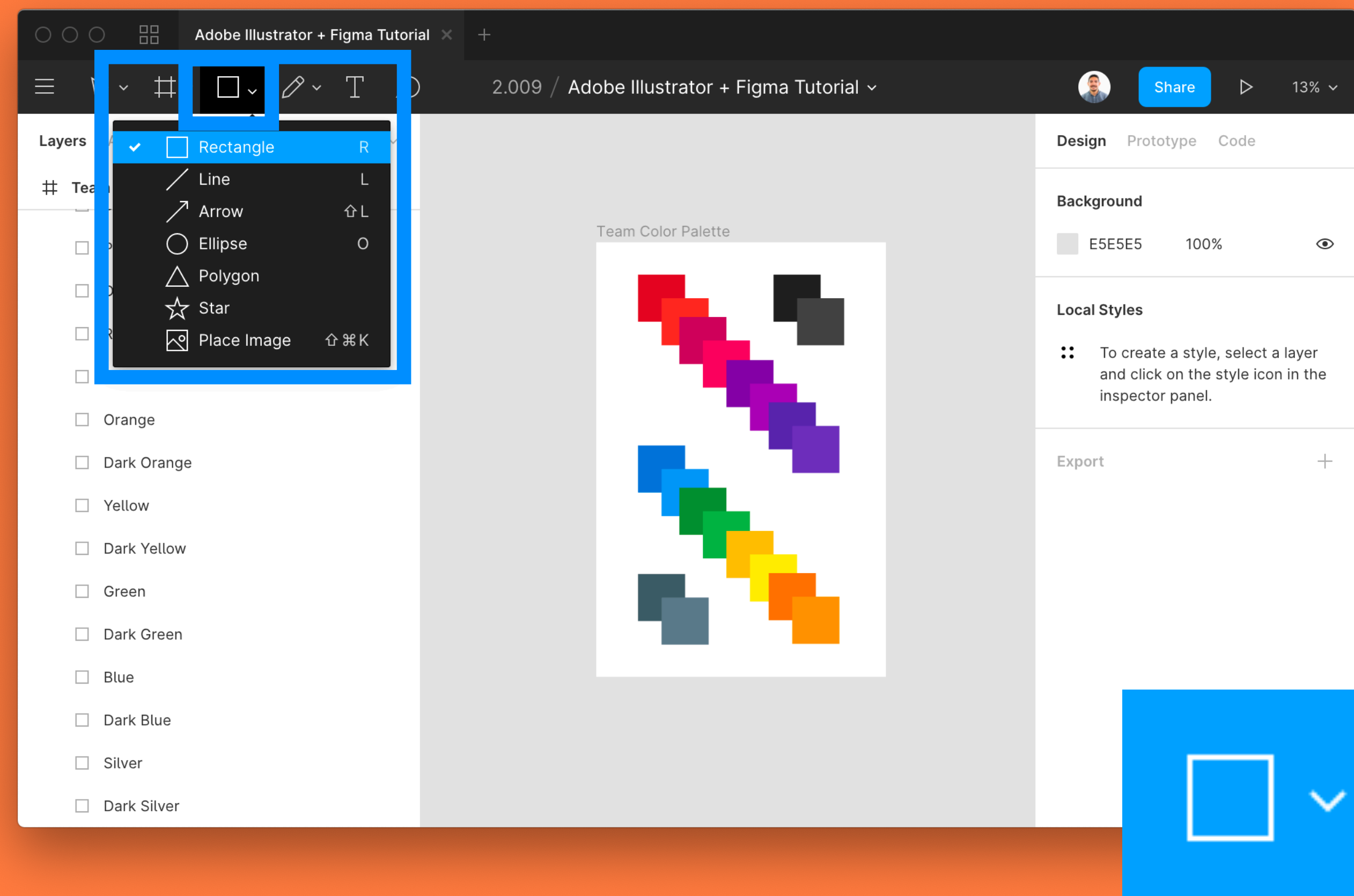
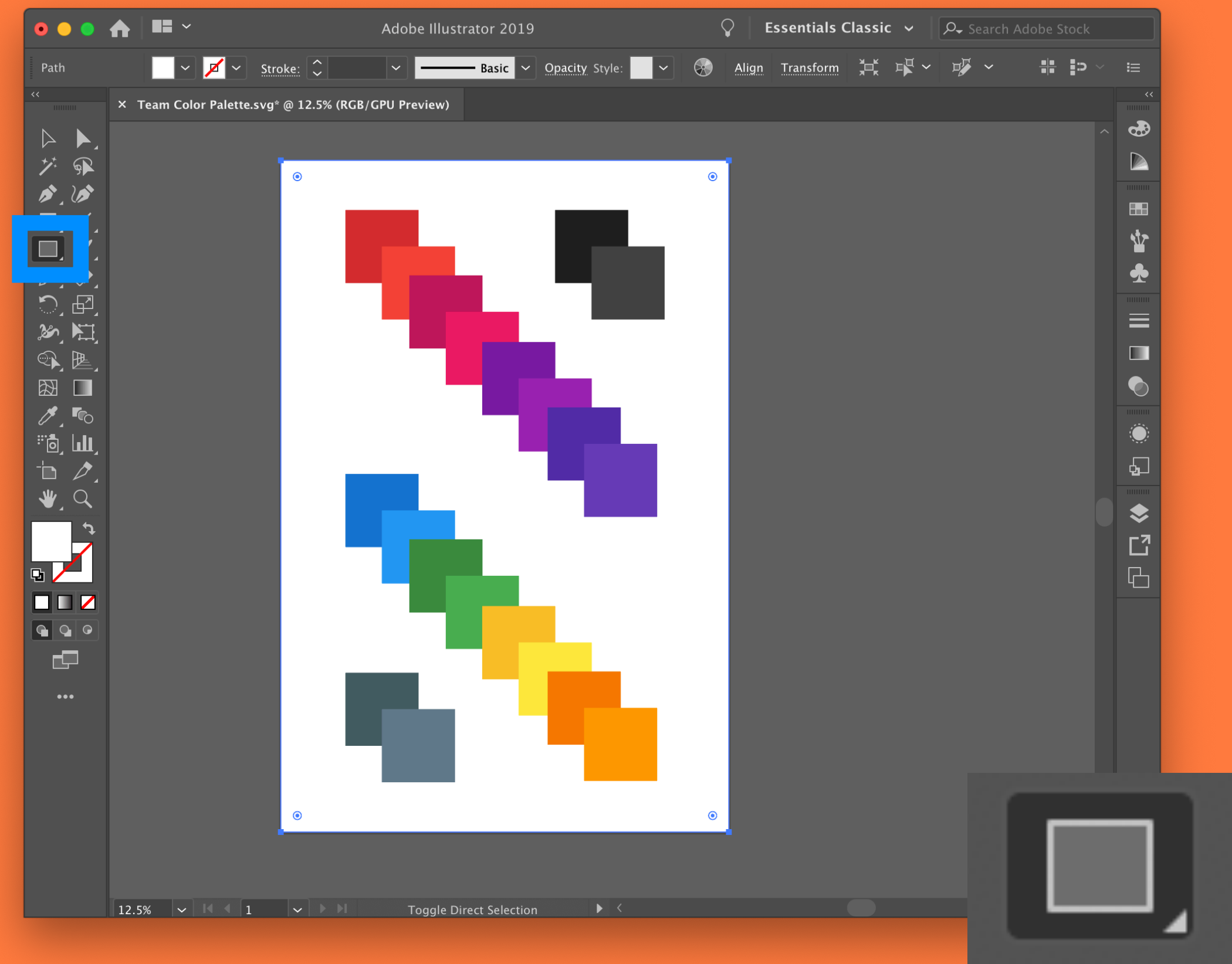
Pencil Tool



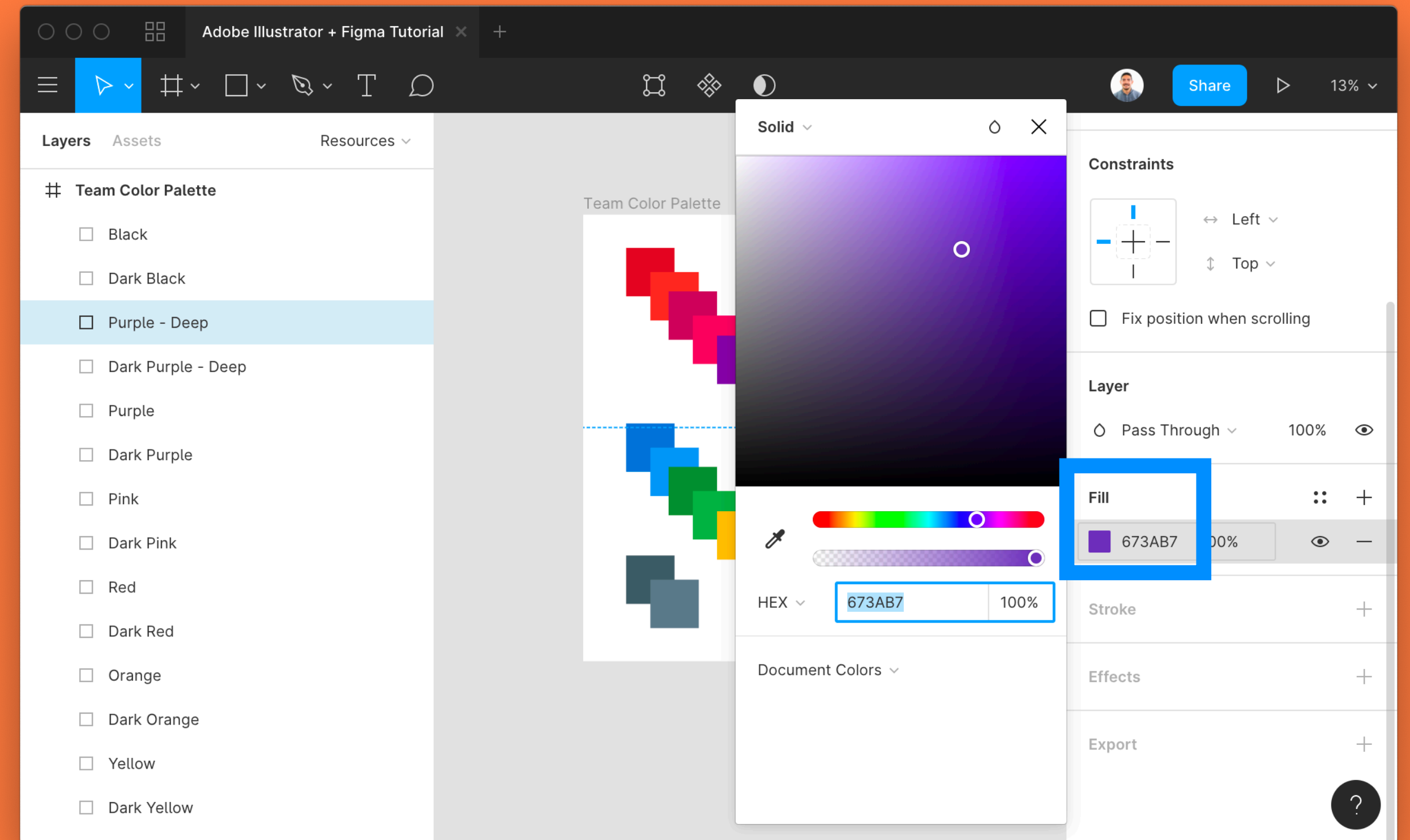
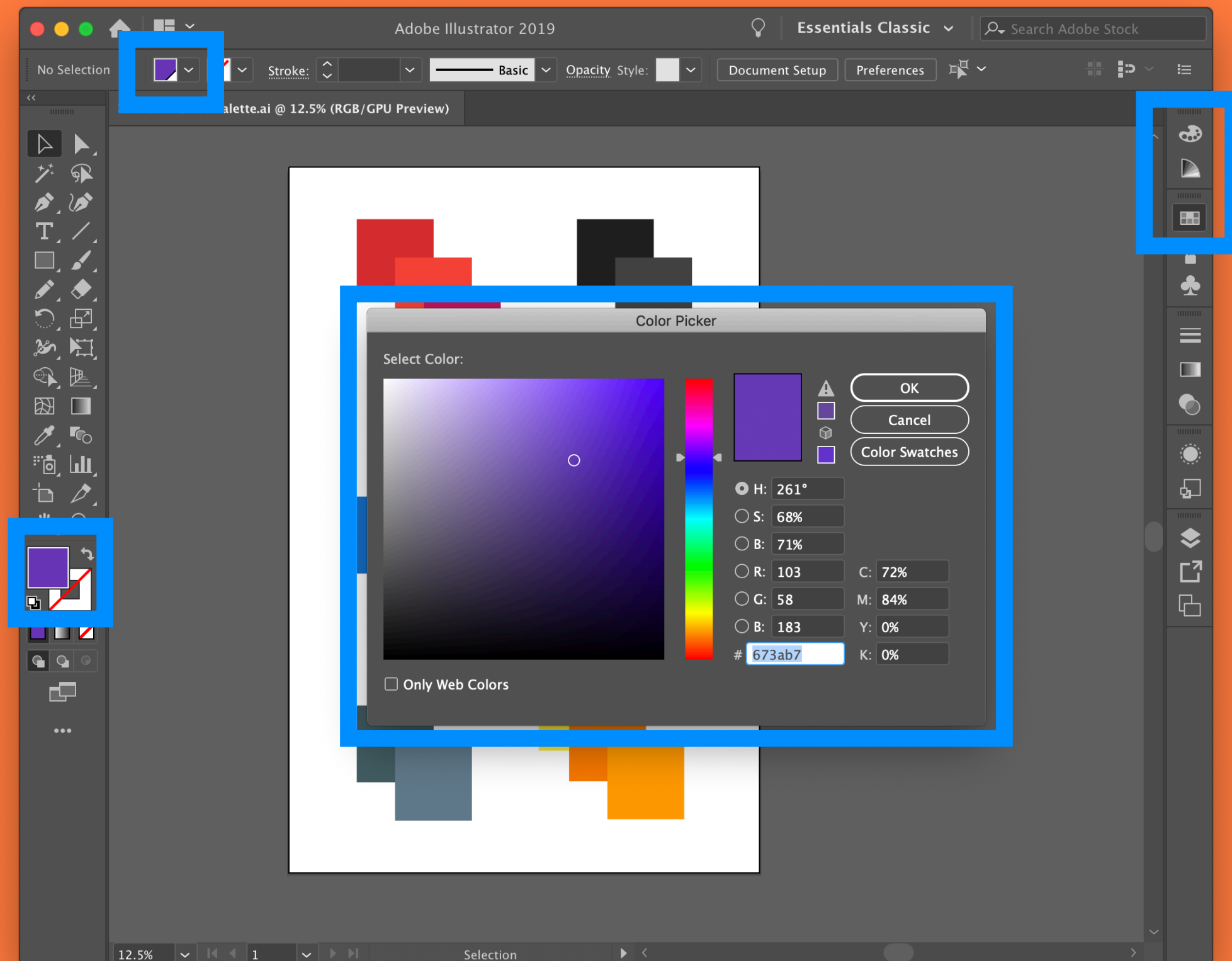
+



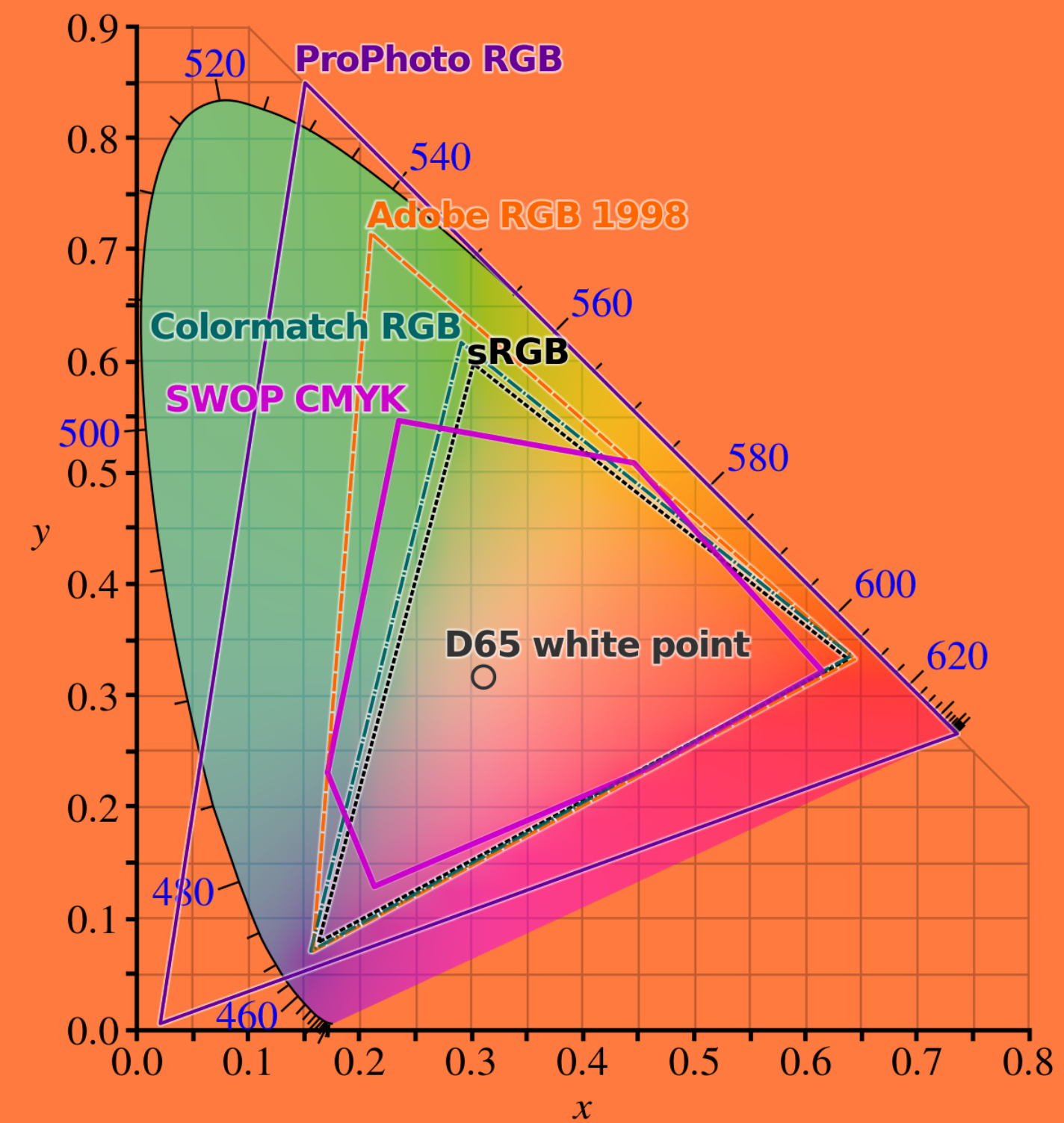
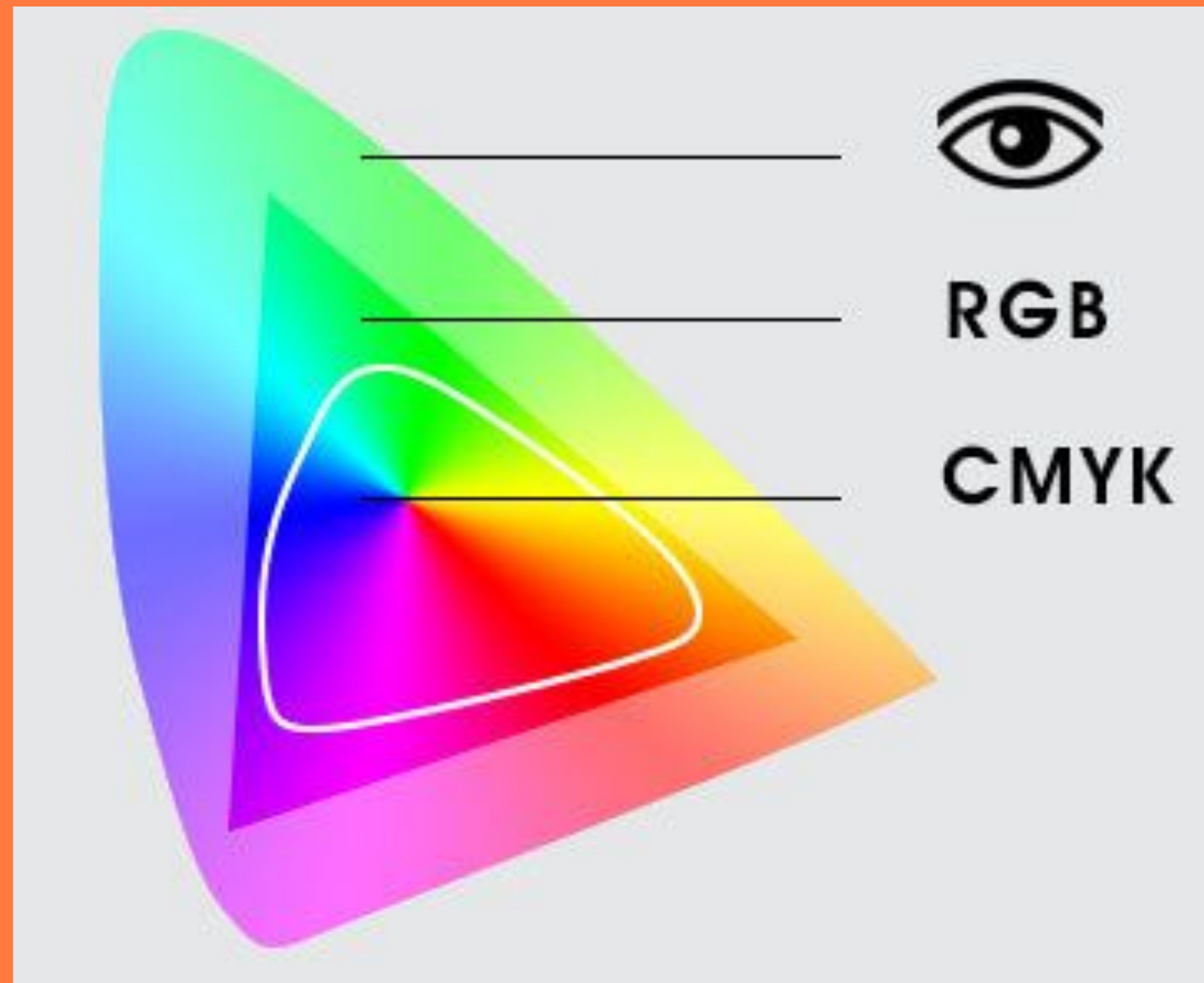
Shape Tools



Colors & Swatches



Colors & Swatches



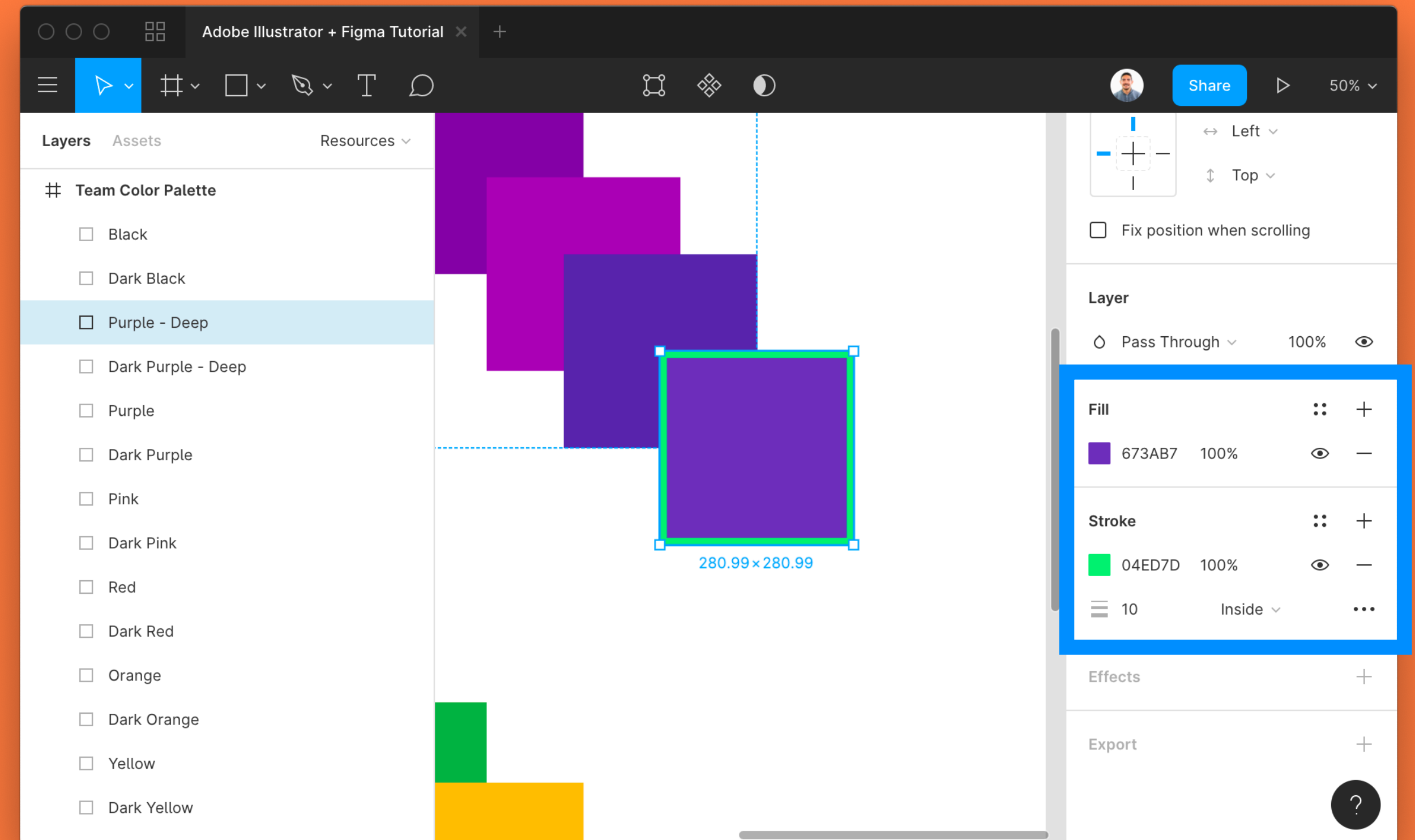
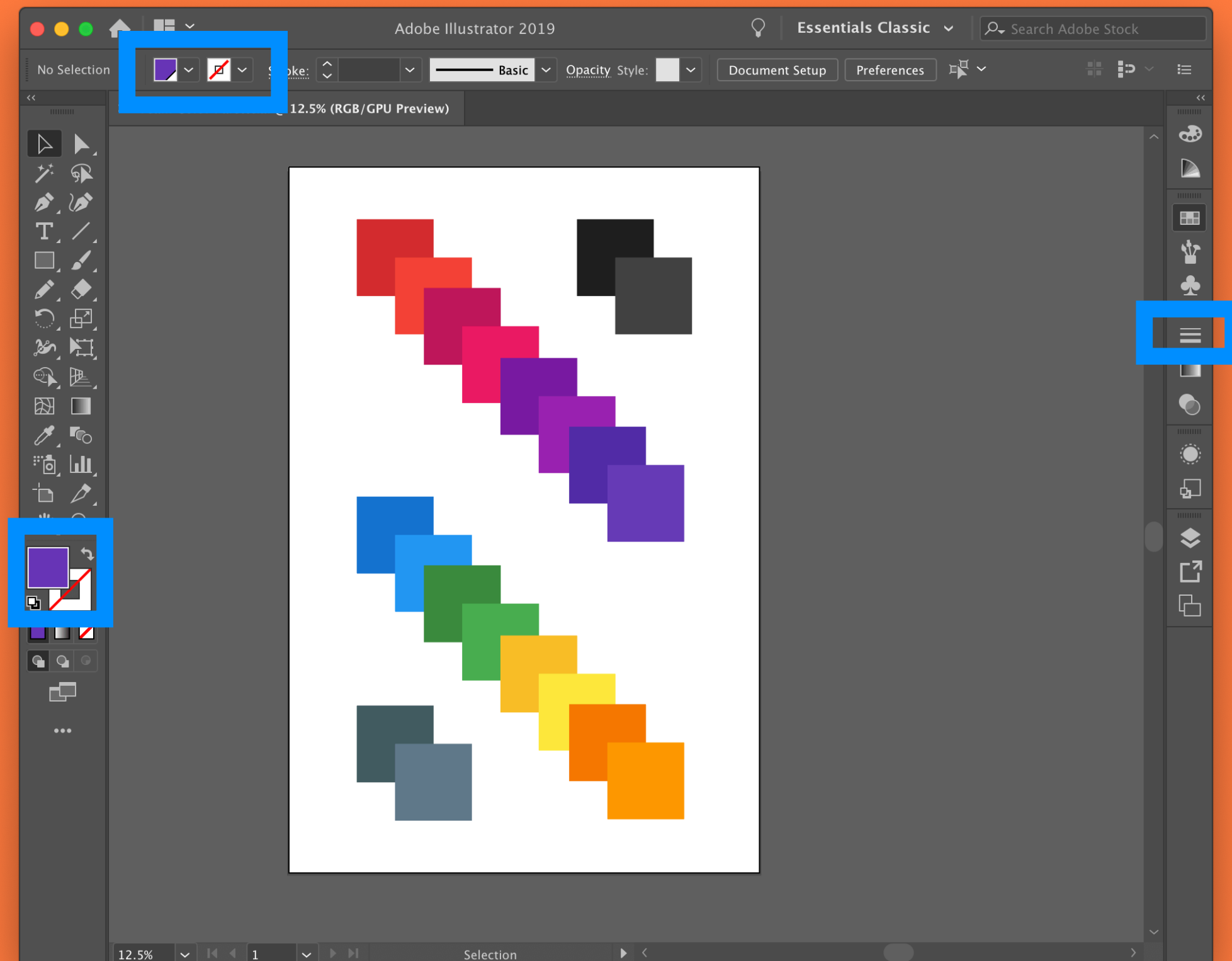
https://en.wikipedia.org/wiki/Color_space

Ai CMYK or RGB



RGB

Stroke & Fill



contrast ratio

Background:

white

8.52

hsla(2

How to use

↔ Swap colors

As you type, the contrast ratio indicated will update.
Hover over the circle to get more detailed information.

When semi-transparent colors are involved as
backgrounds, the contrast ratio will have an error margin,
to account for the different colors they may be over.

This sample text attempts to visually demonstrate how
readable this color combination is, for normal or **bold**
text of various sizes and font styles.

Press the up and down keyboard arrows while over a number inside
functional color notation. Watch it increment/decrement. Try with the
Shift or Alt key too!

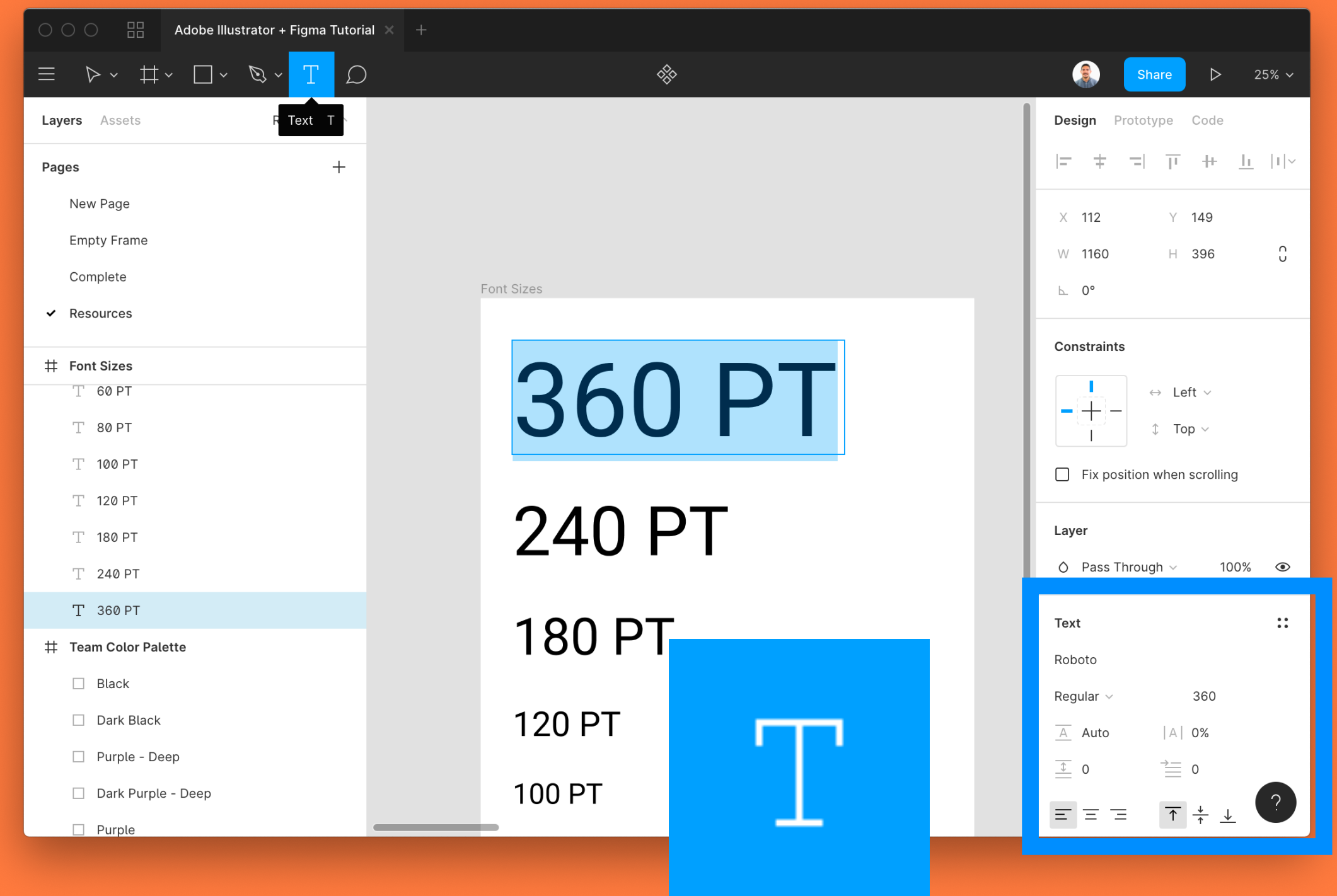
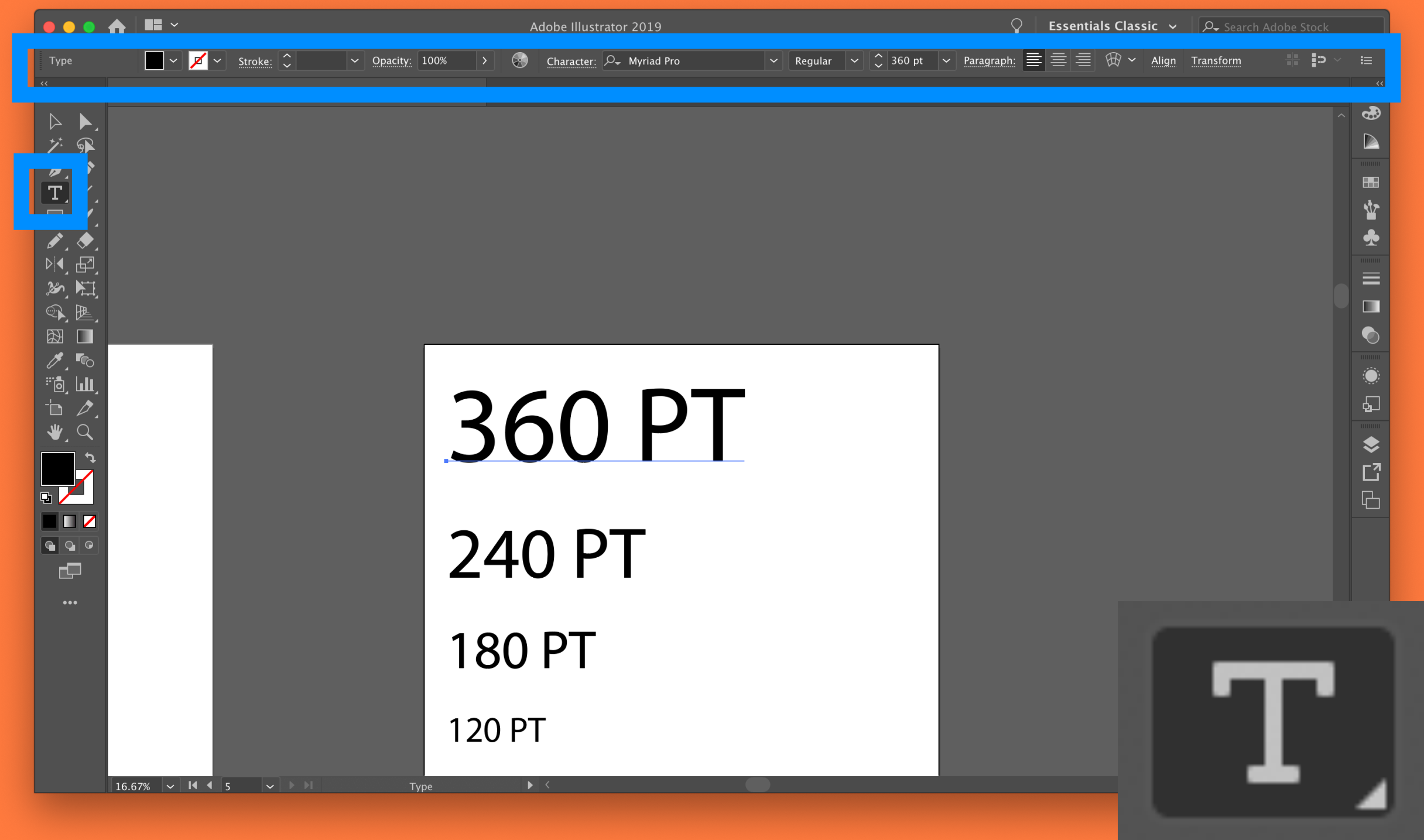
Lea Verou • WCAG 2.0 on contrast ratio

Contrast Ratio

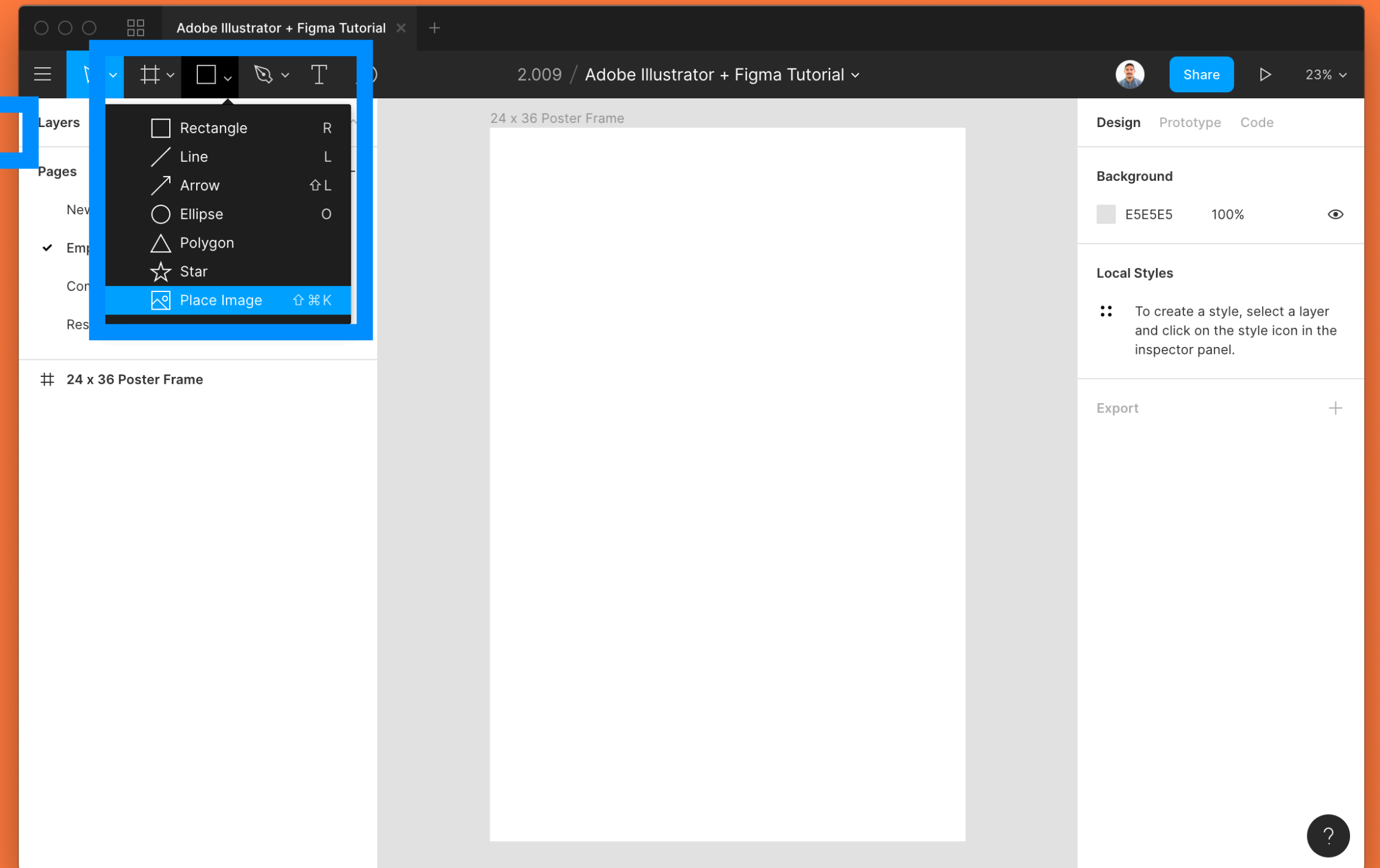
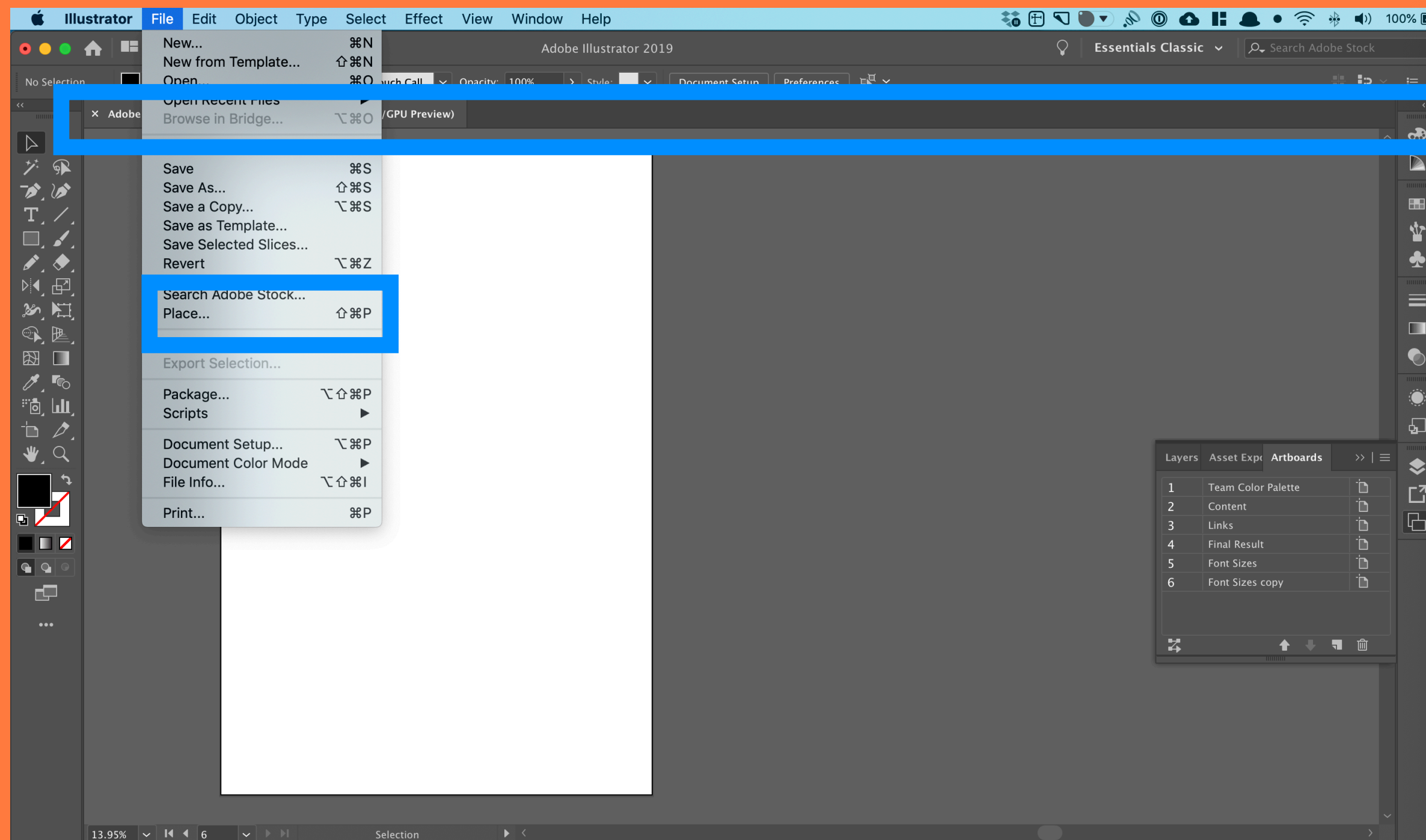
Visual presentation of text and images of
text must have a contrast ratio of at least
4.5:1, except for the following: Large Text:
Large-scale text and images of large-scale
text have a contrast ratio of at least 3:1;

<https://contrast-ratio.com>

Text Tools



Placing Images



*Embed all Images in Illustrator Files



Shift

+

Command

+

P



Shift

+

Command

+

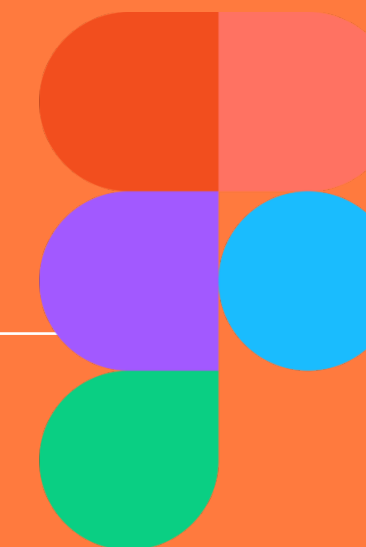
K

Figma to Illustrator



Adobe Illustrator

.svg



Figma

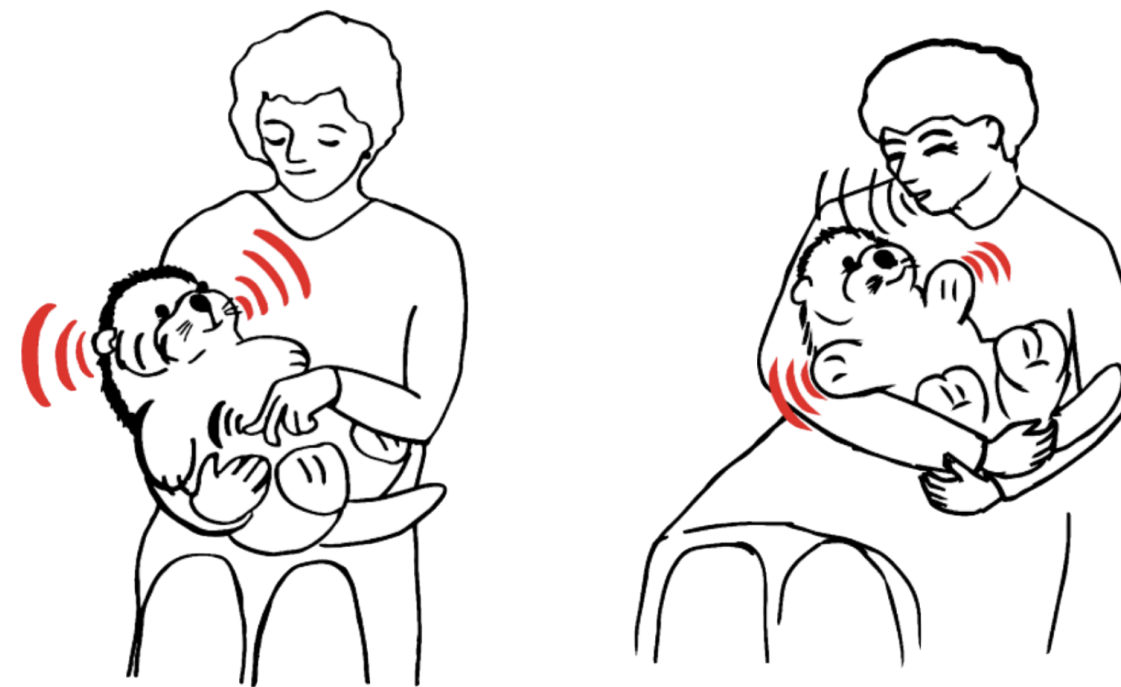


Export **.pdf** from Illustrator for best quality

Export **.pdf** from Figma if you are a risk taker

Let's make a Poster

Therapeutic Companion Pet

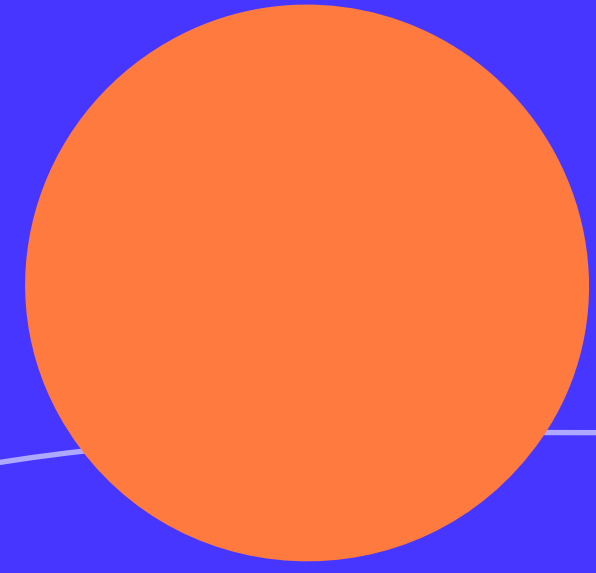


Features	Reduces stress agitation, isolation, & touch deprivation
Market	3 million US cases per year 5-8% global population aged 60+
Consumers	Elderly with dementia and care givers
Feasibility	Research based benefits from touch therapy and pet ownership

Image to Vector

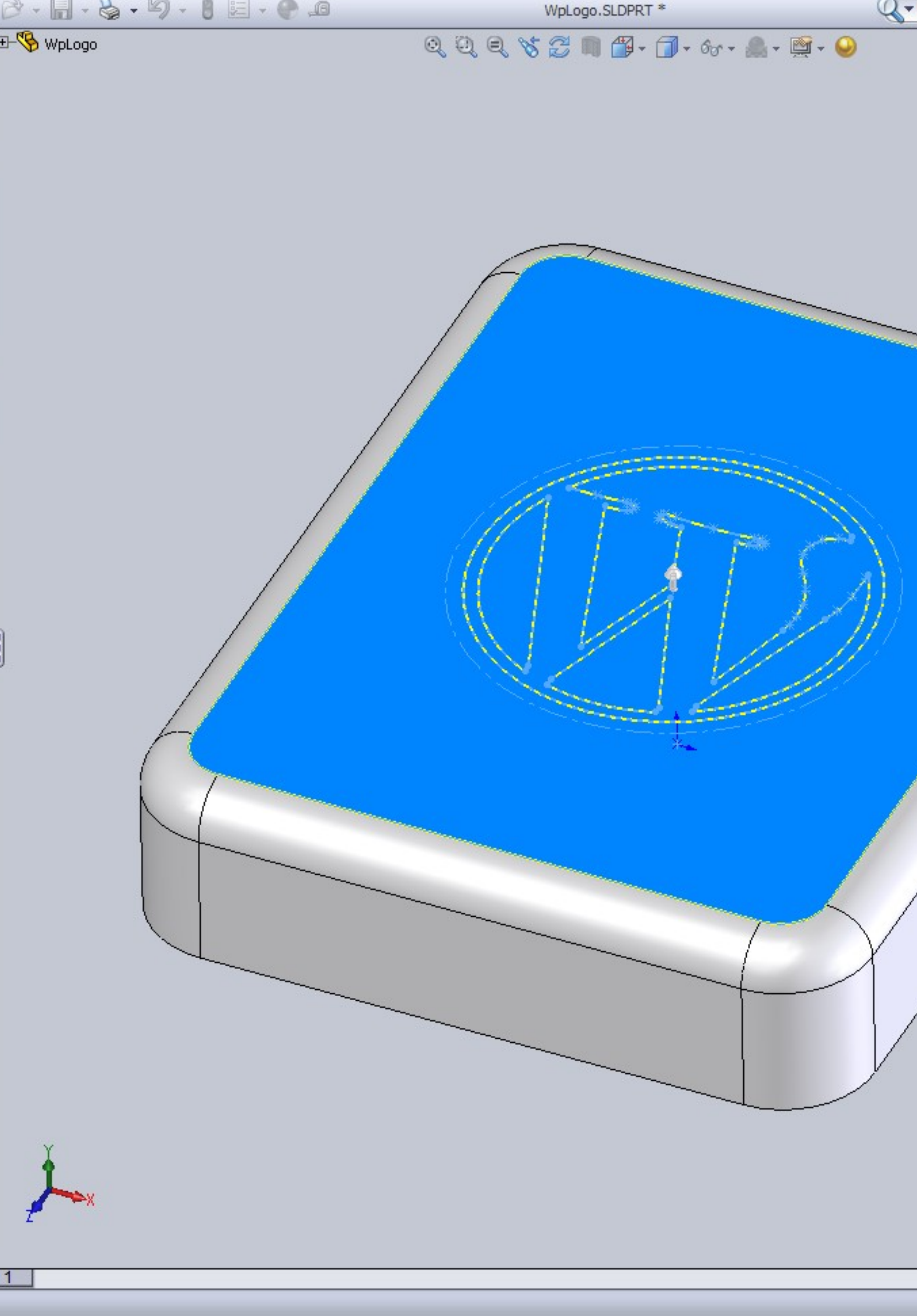


<https://www.pngtosvg.com/>



Additional Resources

Websites, Videos, & Readings



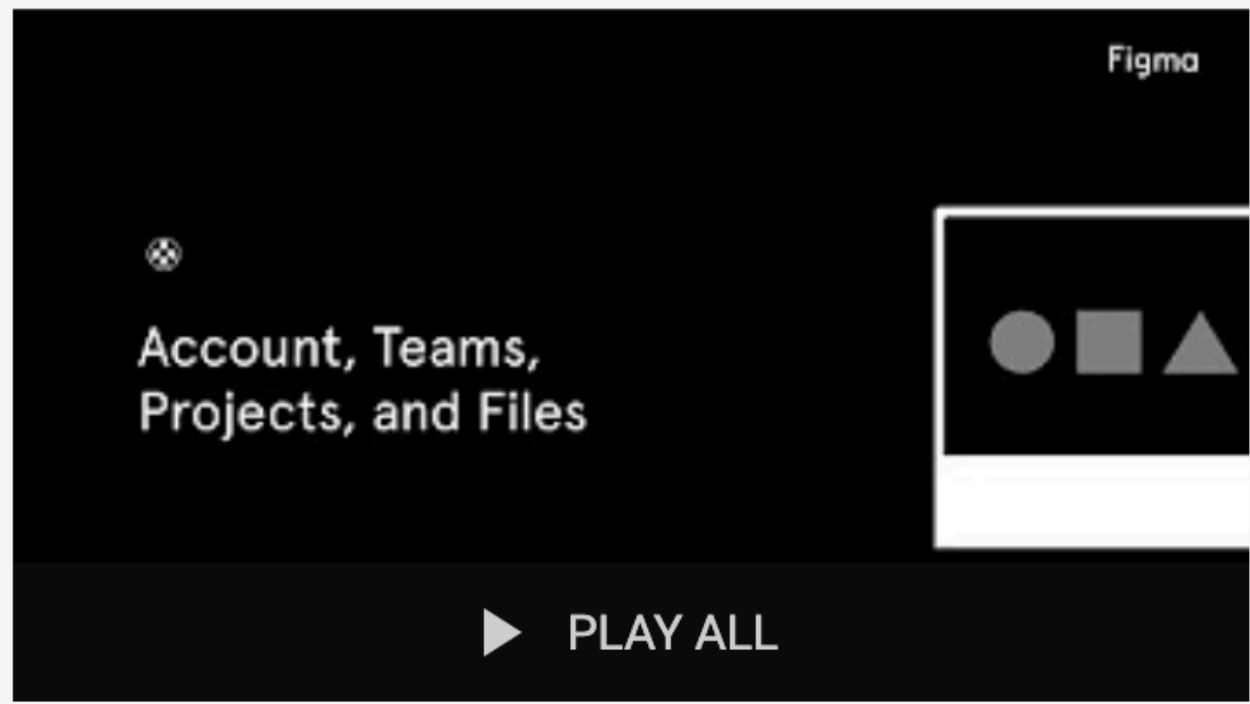
Vector to SolidWorks

Import .ai files directly from Illustrator into Solidworks

File > Export > Export as .dxf or .dwg

[https://help.solidworks.com/2018/English/SolidWorks/sldworks/t_Adobe_Illustrator_Files_\(.ai\).htm](https://help.solidworks.com/2018/English/SolidWorks/sldworks/t_Adobe_Illustrator_Files_(.ai).htm)





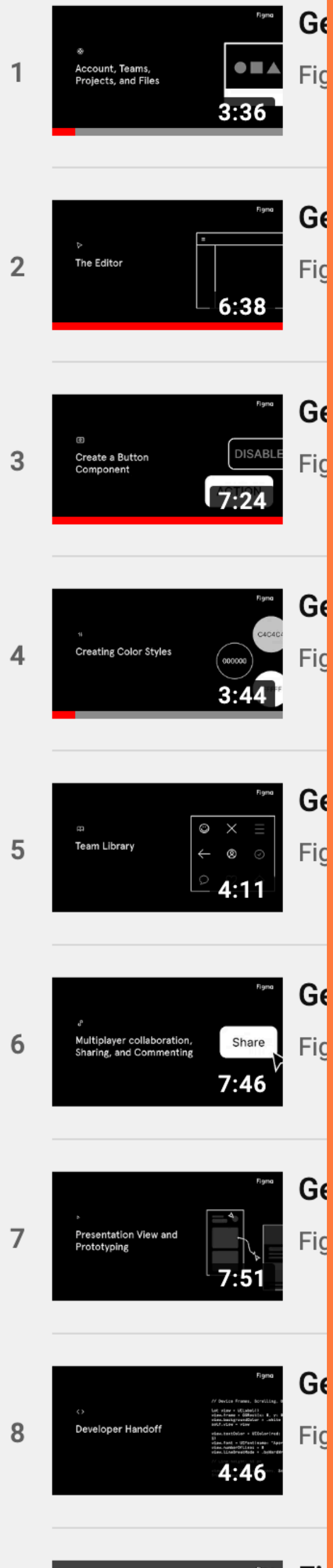
Getting Started

11 videos • 36,665 views • Updated yesterday



Figma

SUBSCRIBED



Getting Started - Figma

Youtube Series on getting started with Figma. Other videos for more advanced users as well. Many concepts can be transferred into other vector software, like Adobe Illustrator.

<https://youtu.be/hrHL2VLMl7g>



YouTube

Workshop Time!

Thank you

