

Vector graphics - introduction and hands on exploring

Outline

Theory

Vector?

How to approach a graphic in the wild

What is a good base?

Process Example

Basic vector-attributes

Vector - Best practices

Affinity Designer

Affinity Pros/Cons

Settings / Preferences

Introduction to the User Interface

Essential Tools and Functions

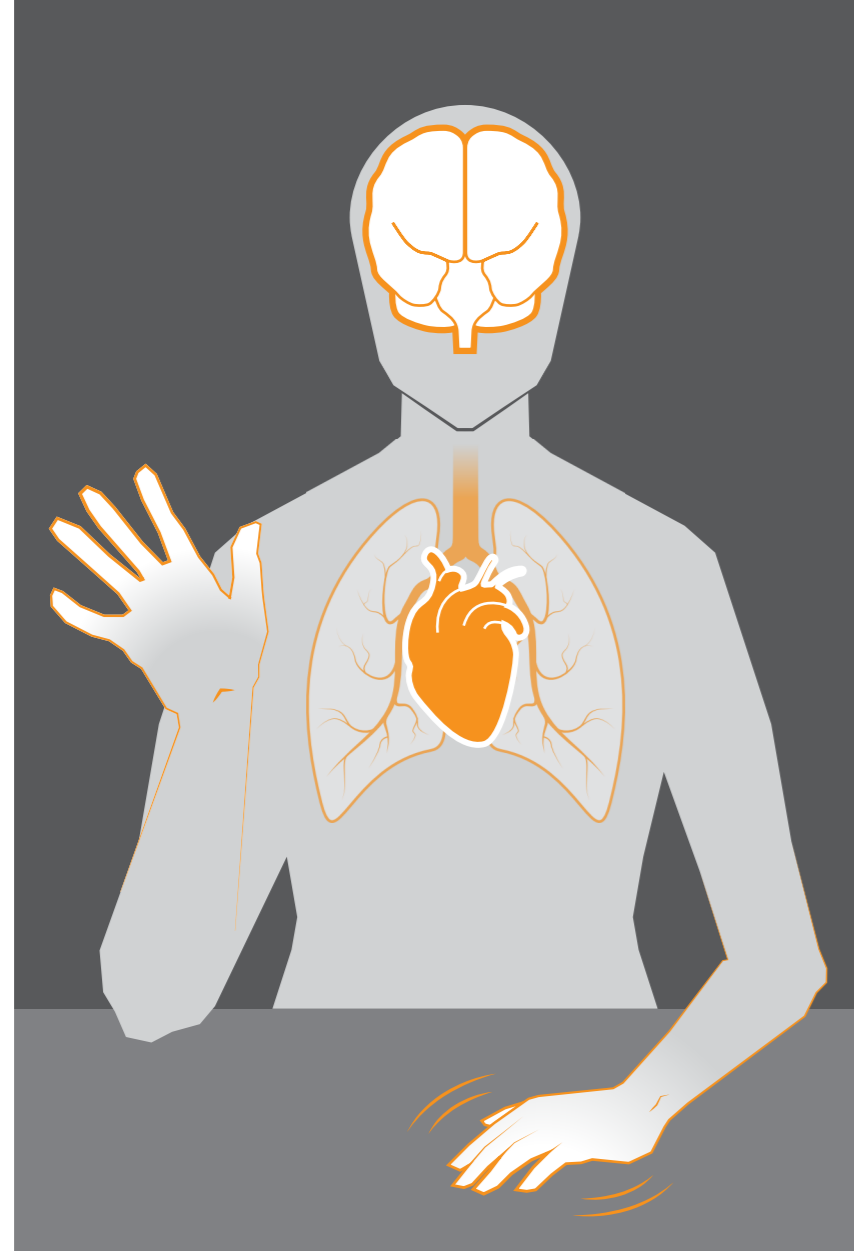
Active Learning

Vector graphics are

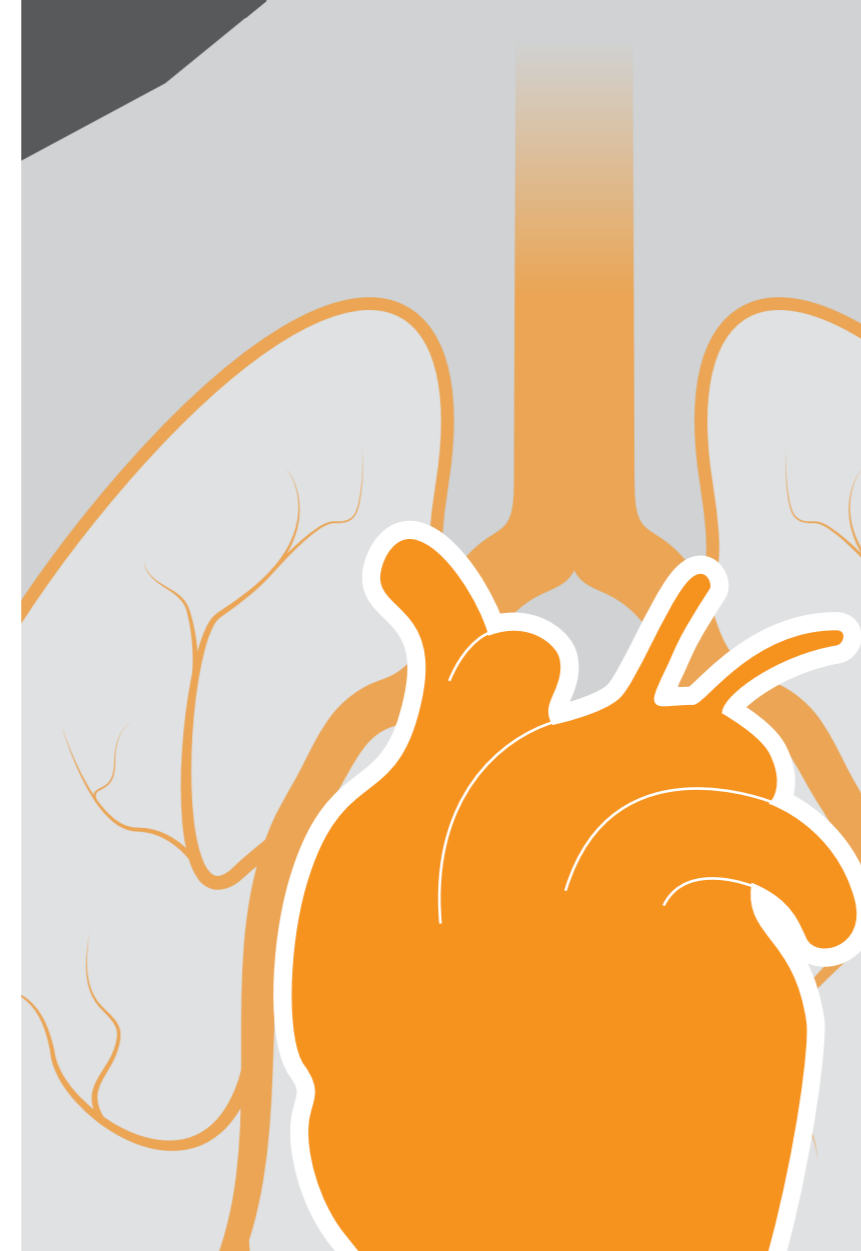
images that are defined in terms of **points** on a **Cartesian plane**,
which are connected by **lines and curves** to form polygons and other shapes.
[Wikipedia]

Can be **scaled** without problems

Base



Scaled Vector



File formats:

- for exchange: **pdf**
- For saving and editing (and web):
 - svg** (inkscape)
 - ai** (Adobe Illustrator)
 - afdesign** (Affinity Designer)

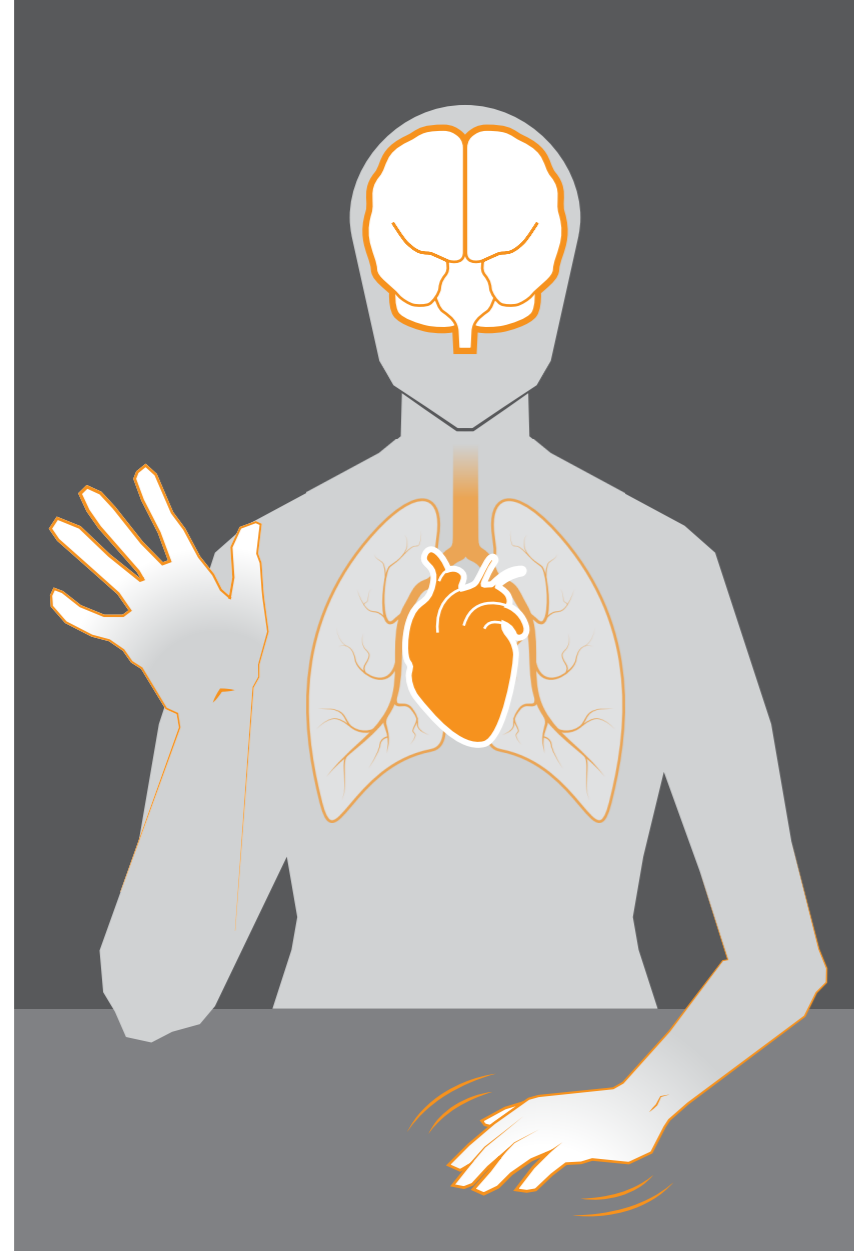
Vector graphics - Vector?

Pixel graphics are

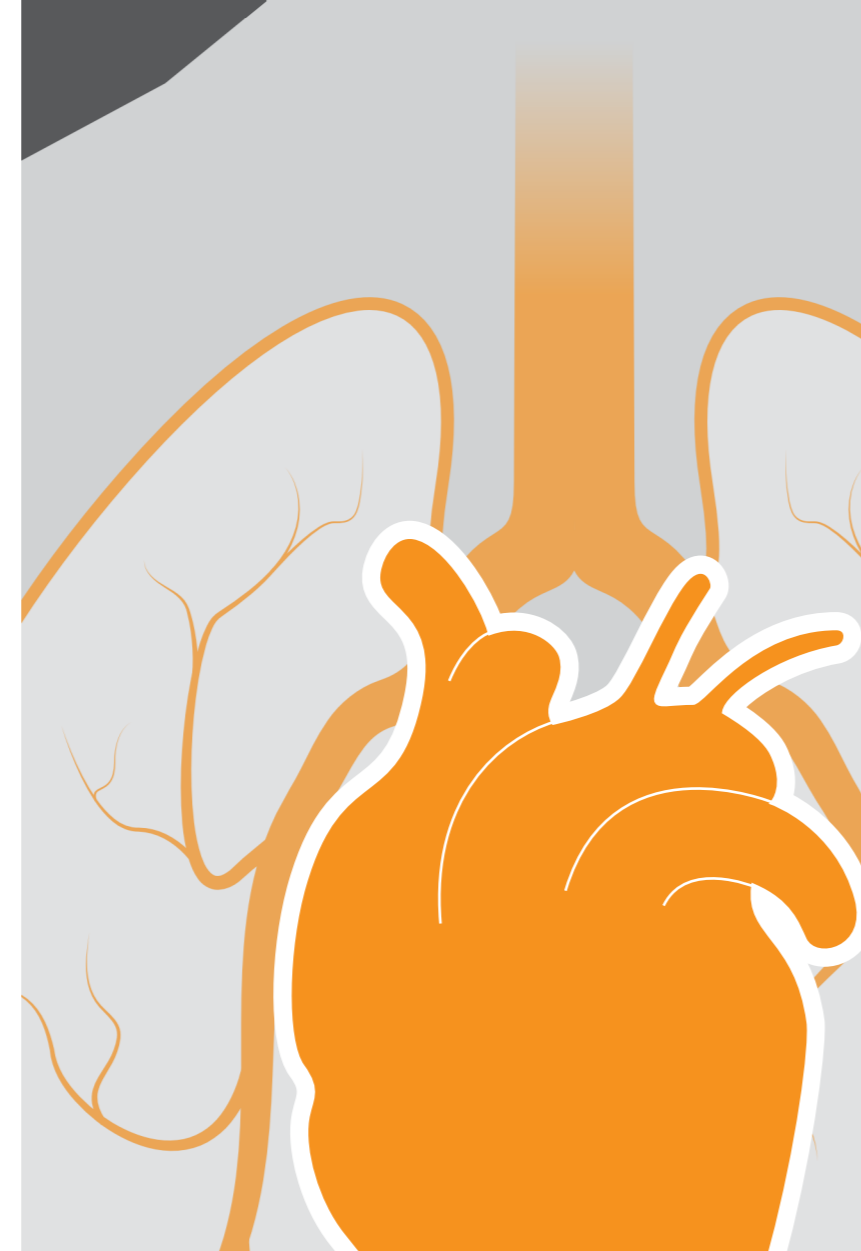
Images defined on a pixel array, where each value carries only a **color value**

Scaling will only increase **visible pixel size**, not **pixel number**

Base



Scaled Vector



Scaled Pixel



File formats:

- Jpg (smaller (compressed) file)
- Png (transparency possible, losless compression possible)
- Bmp (big)

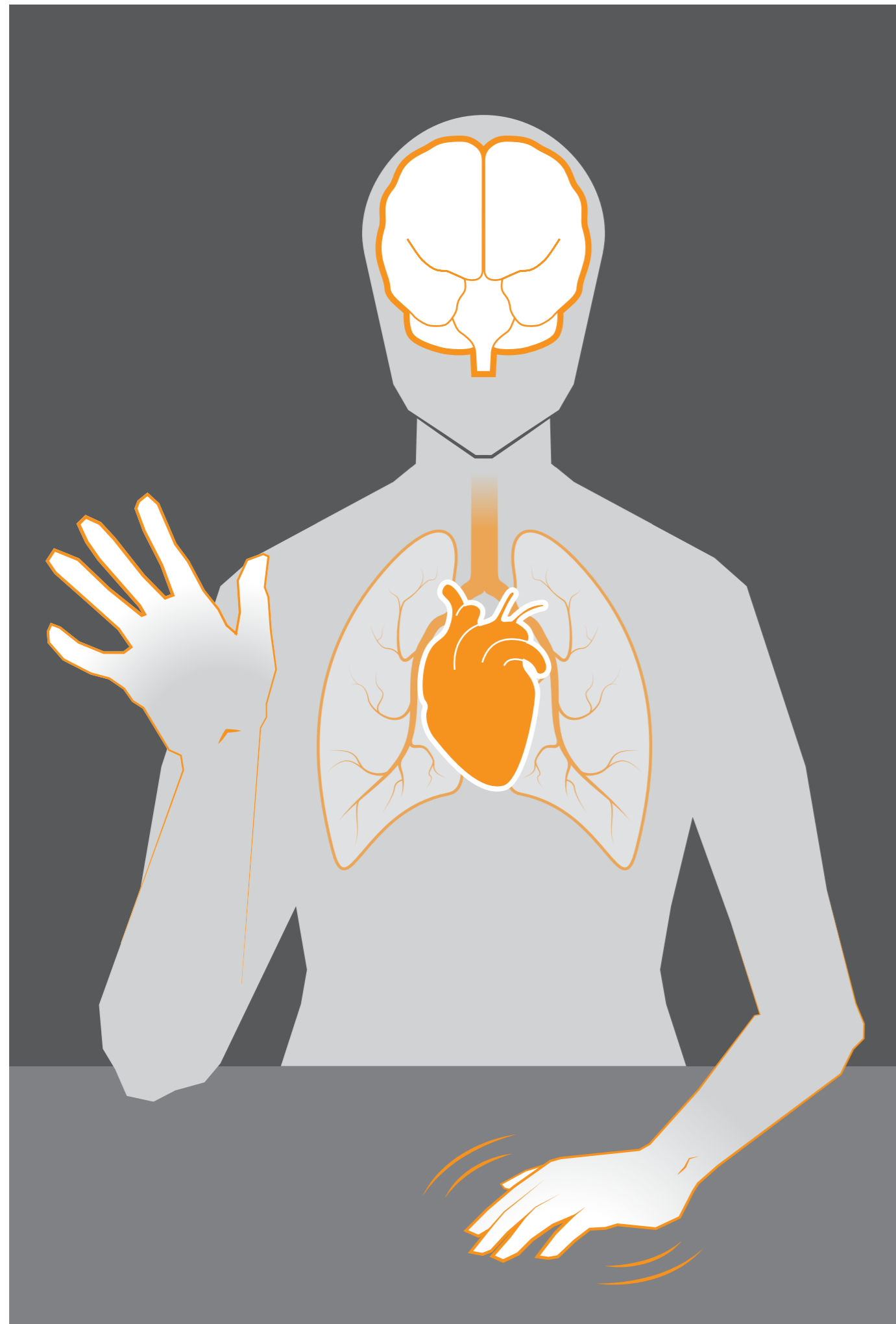
[If possible] sort the things to visualise into two groups:

Context and Focus

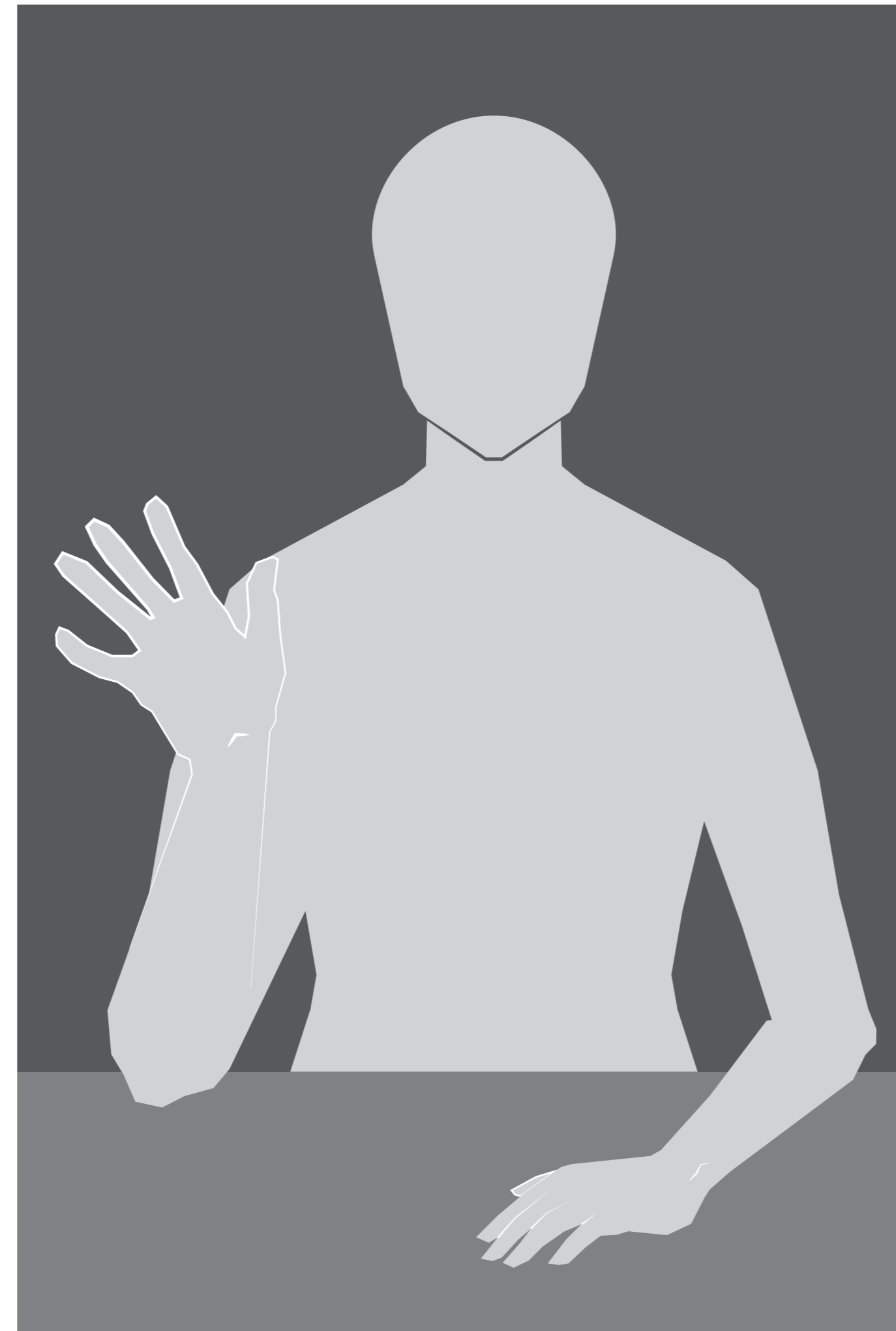
[If possible] sort the things to visualise into two groups:

Context and Focus

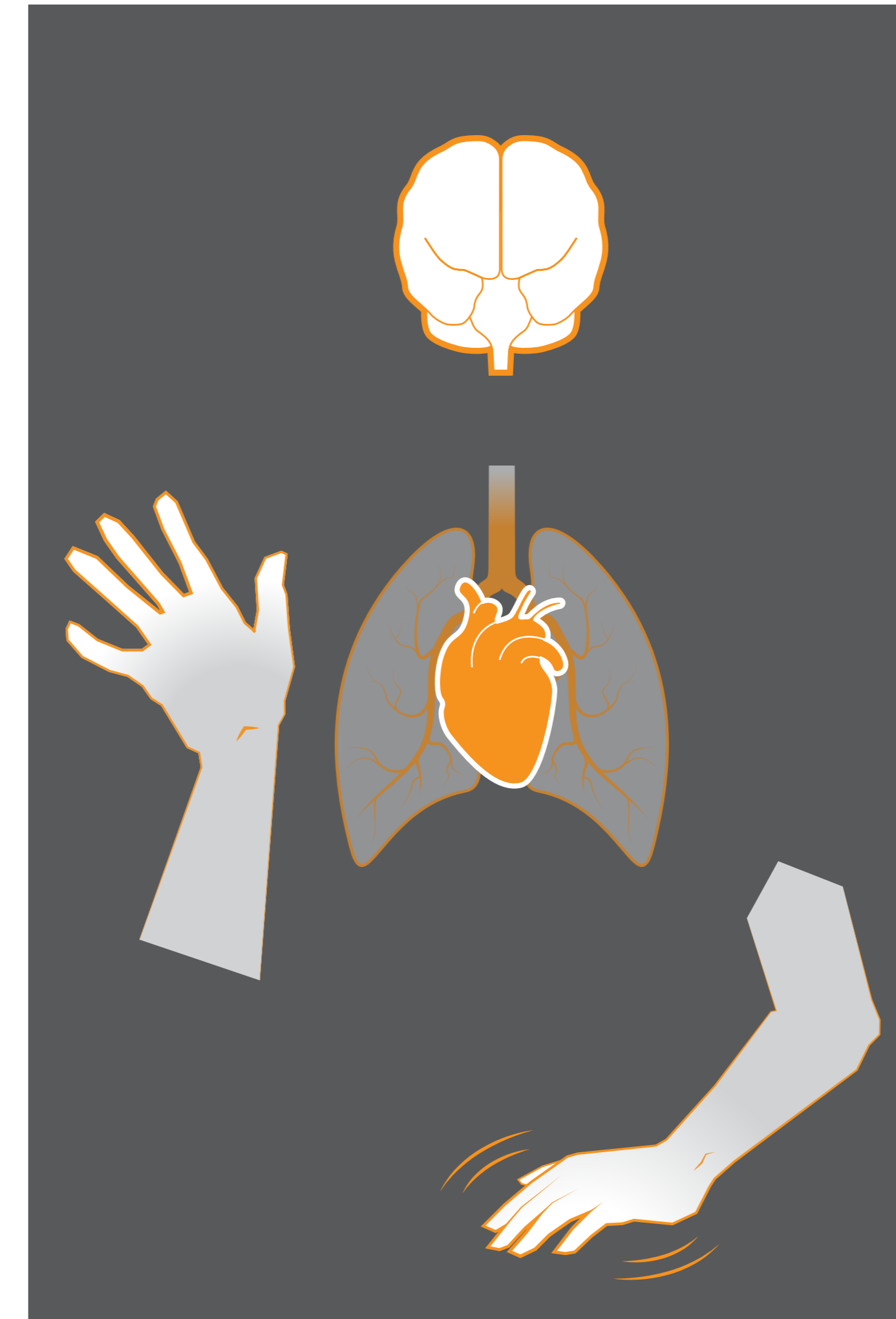
Whole



Context



Focus



What is a good base?

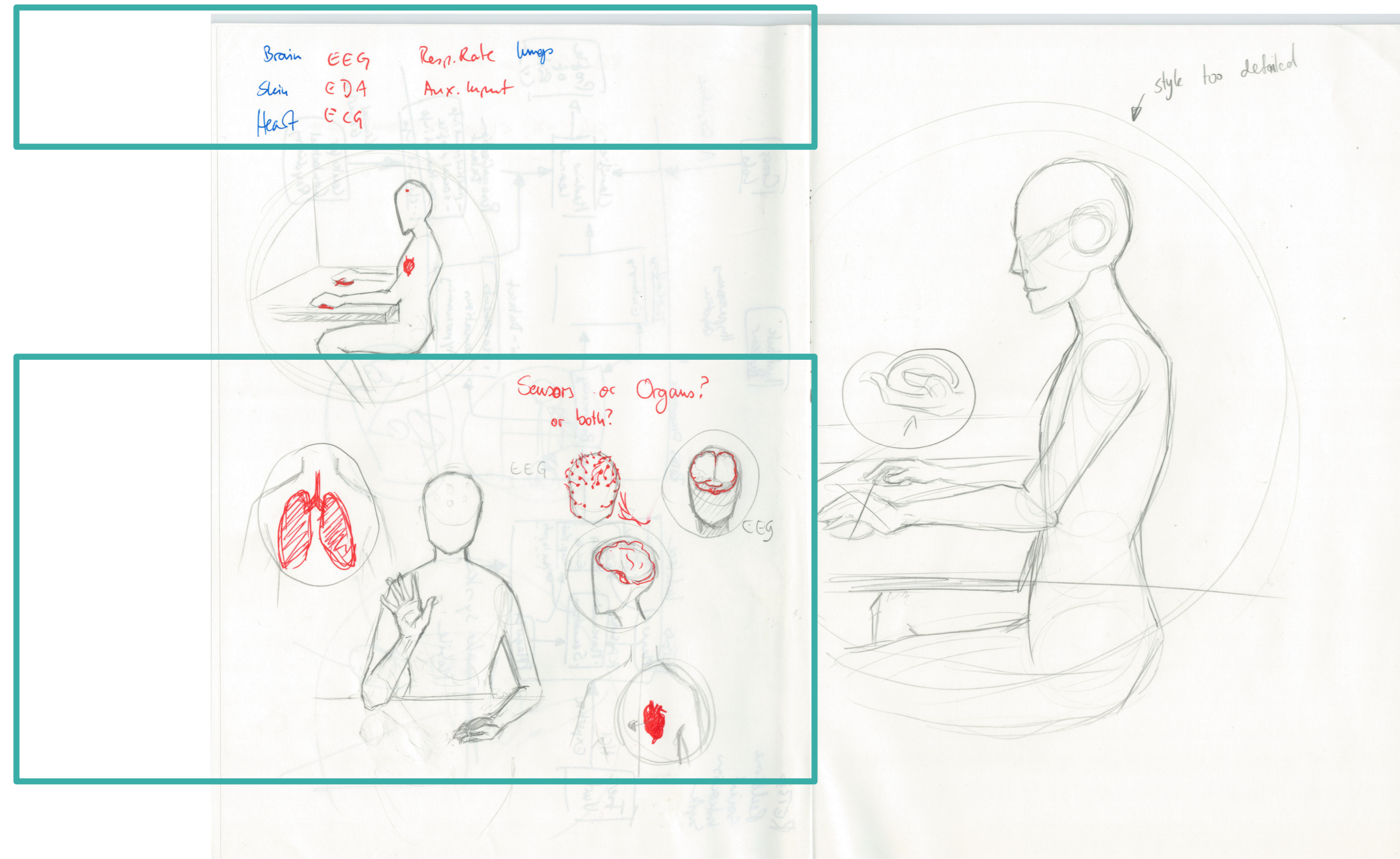
Technically Everything...

Photographs | Sketches | Imagination | ...

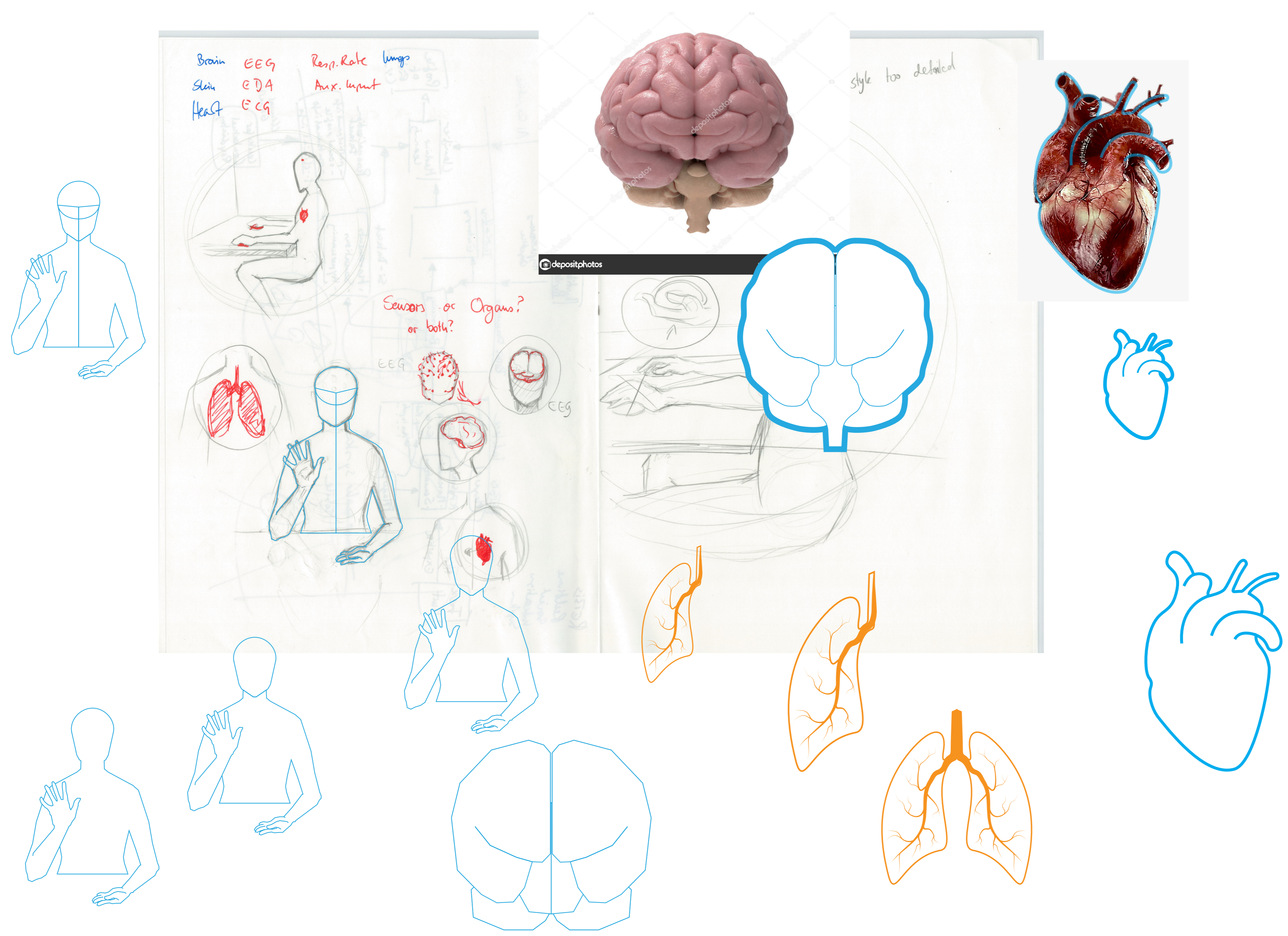
But...

It helps to Sketch out Variations

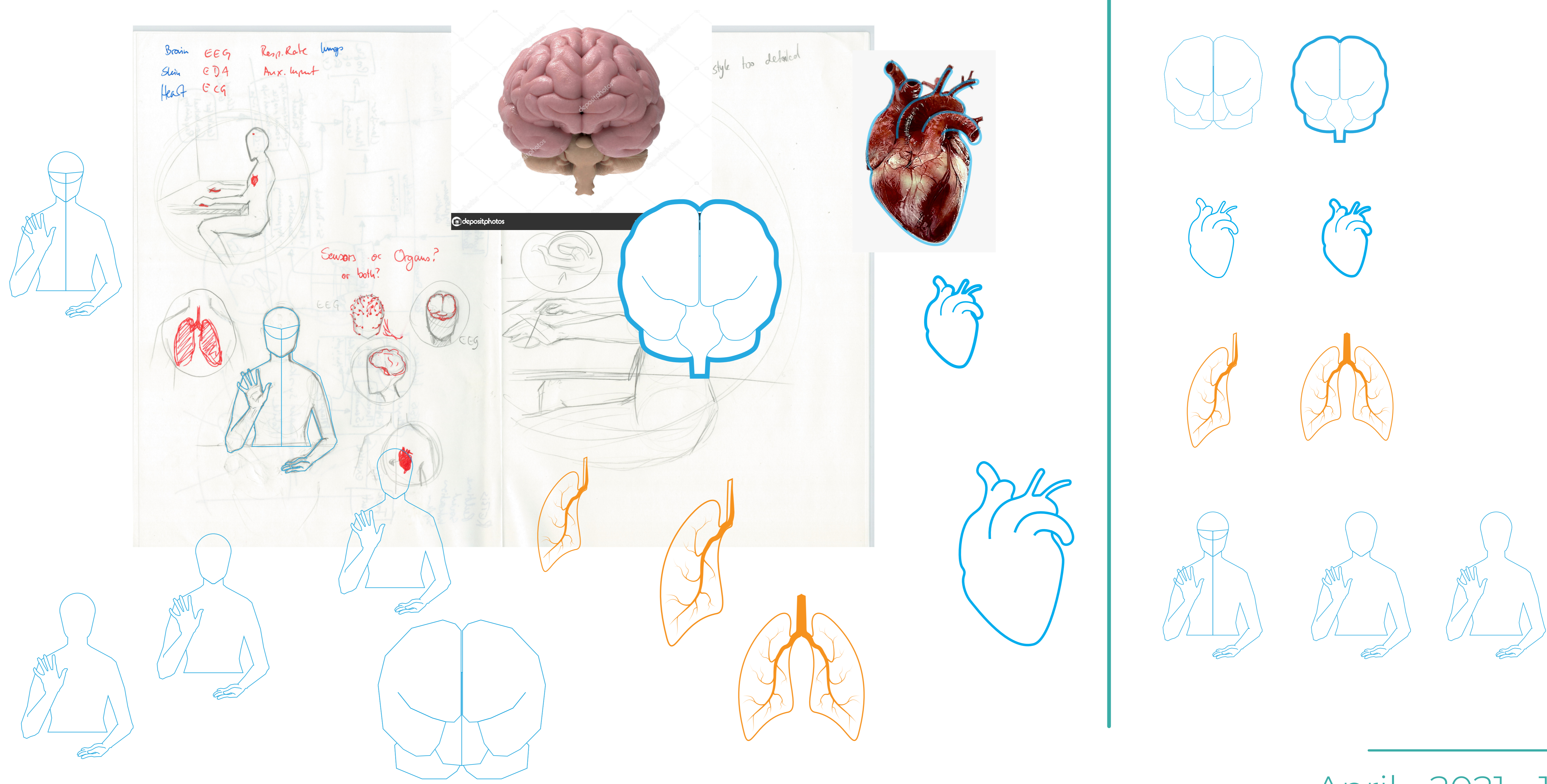
Step 1 - Think and Sketch



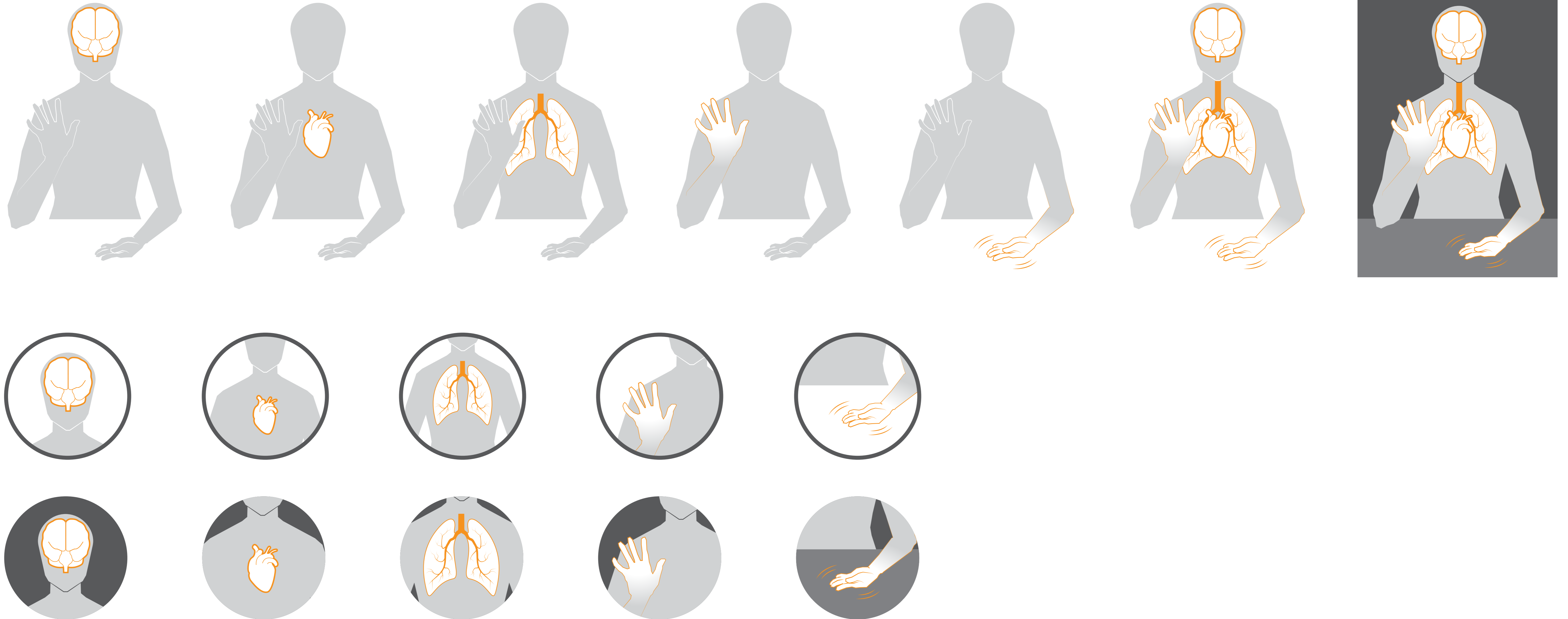
Step 2 - Vectorise winning idea



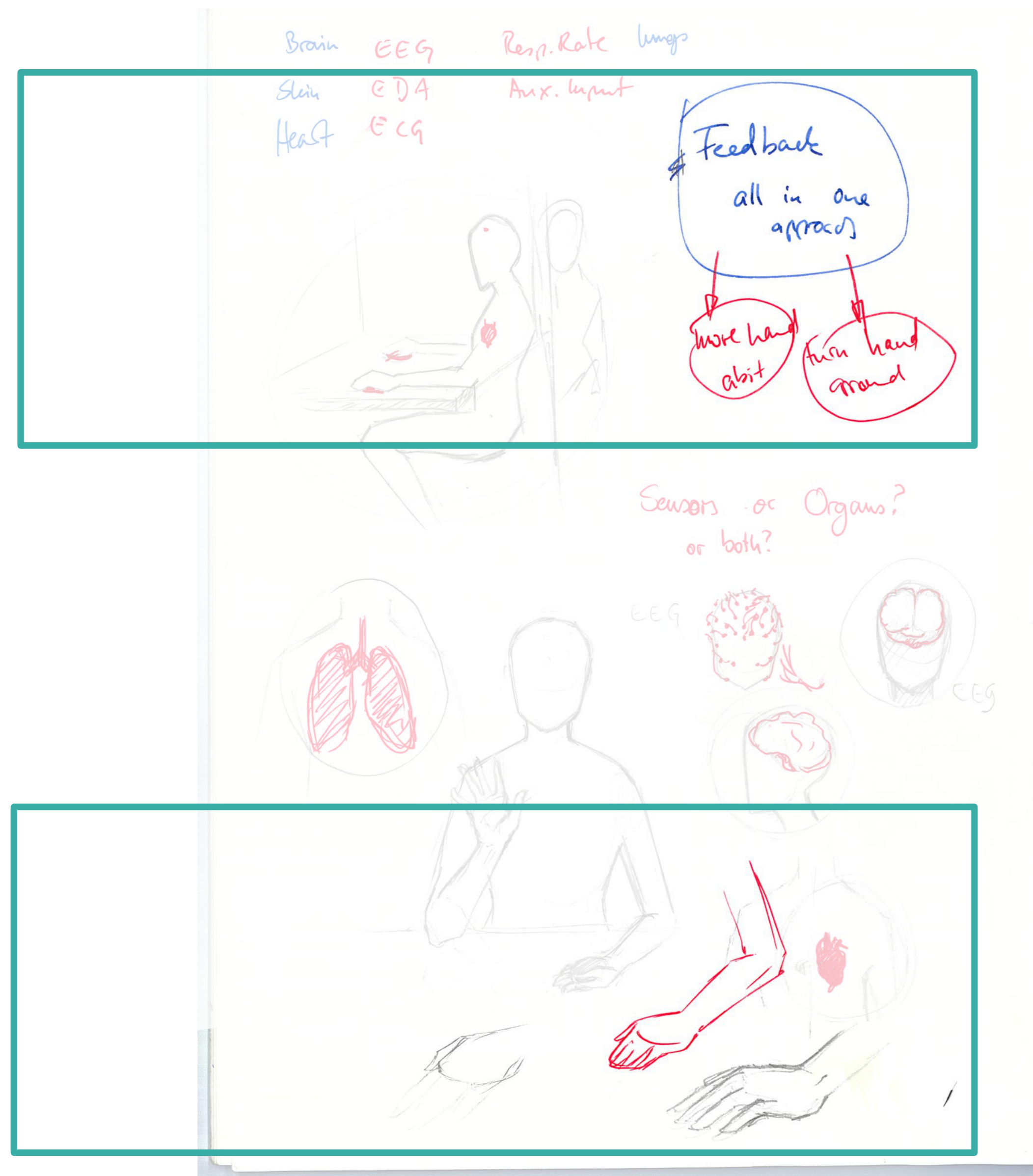
Step 2 - Vectorise winning idea



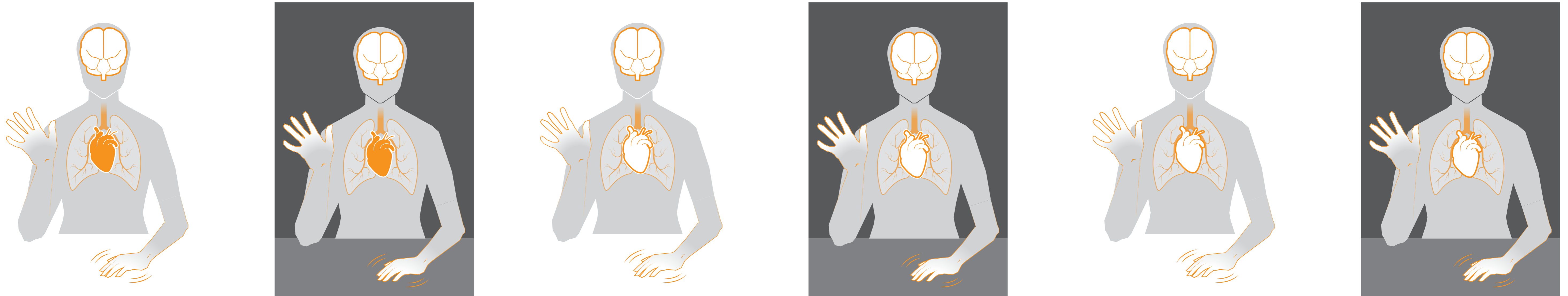
Step 3 - Refine and unite style, create variations



Step 4 - Discuss (and sketch again)



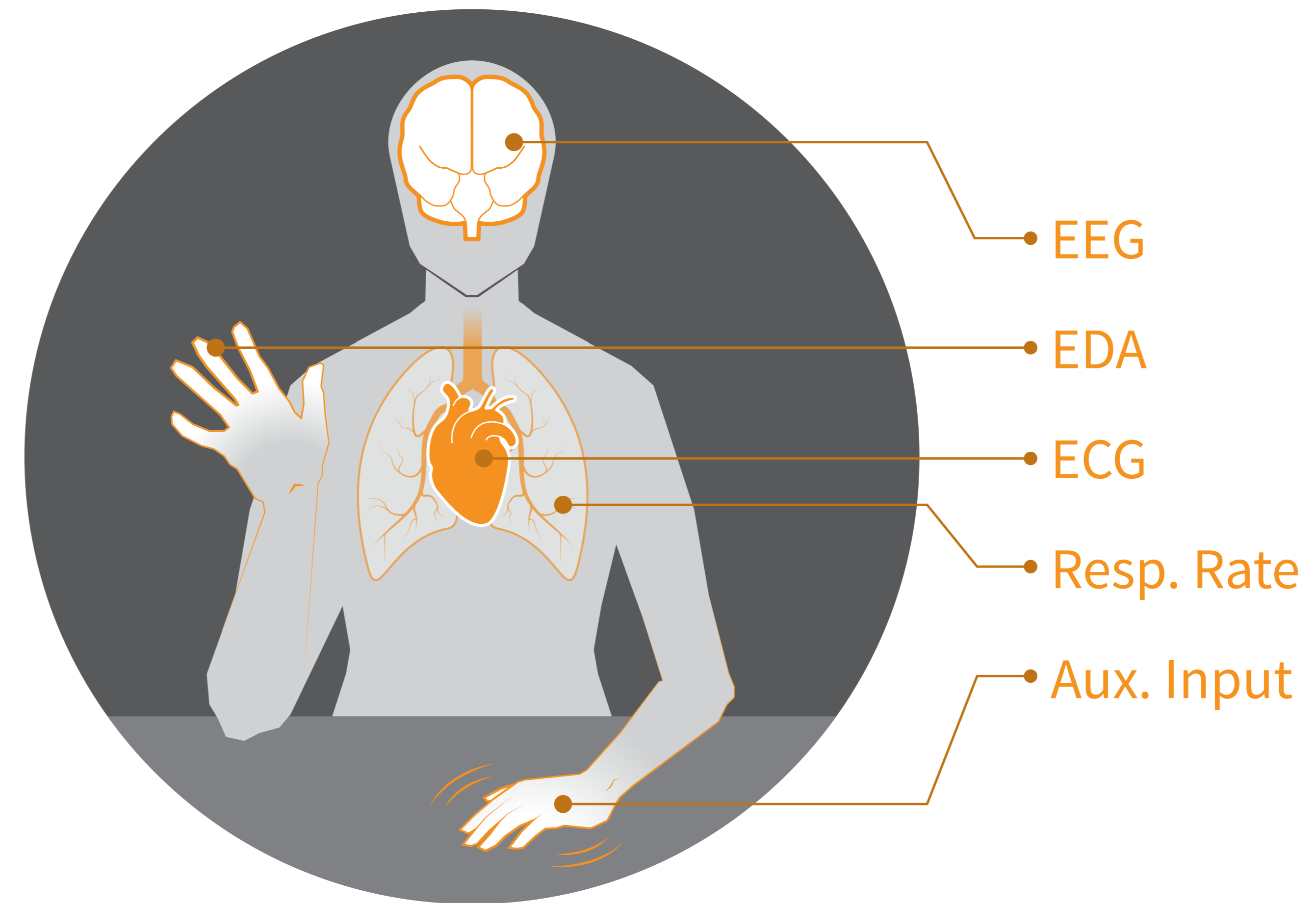
Step 5 - Refine and Change Vector



Step 6 - Discuss (and sketch again)



Step 7 - Refine and Finalise



Outline | Fill | Colour | Opacity

Outline

Thickness constant

Thickness variation within line

Thickness variation in graphic

Dashed

Line ending

In | On | Out of vector form

Fill

Filling Constant

Filling with gradient

Filling with texture

Colour

Hue

Saturation

Luminosity

Opacity

Full

Non full

Example

Outline

- Thickness constant
- Thickness variation within line
- Thickness variation in graphic
- Dashed
- Line ending
- In | On | Out of vector form

Colour

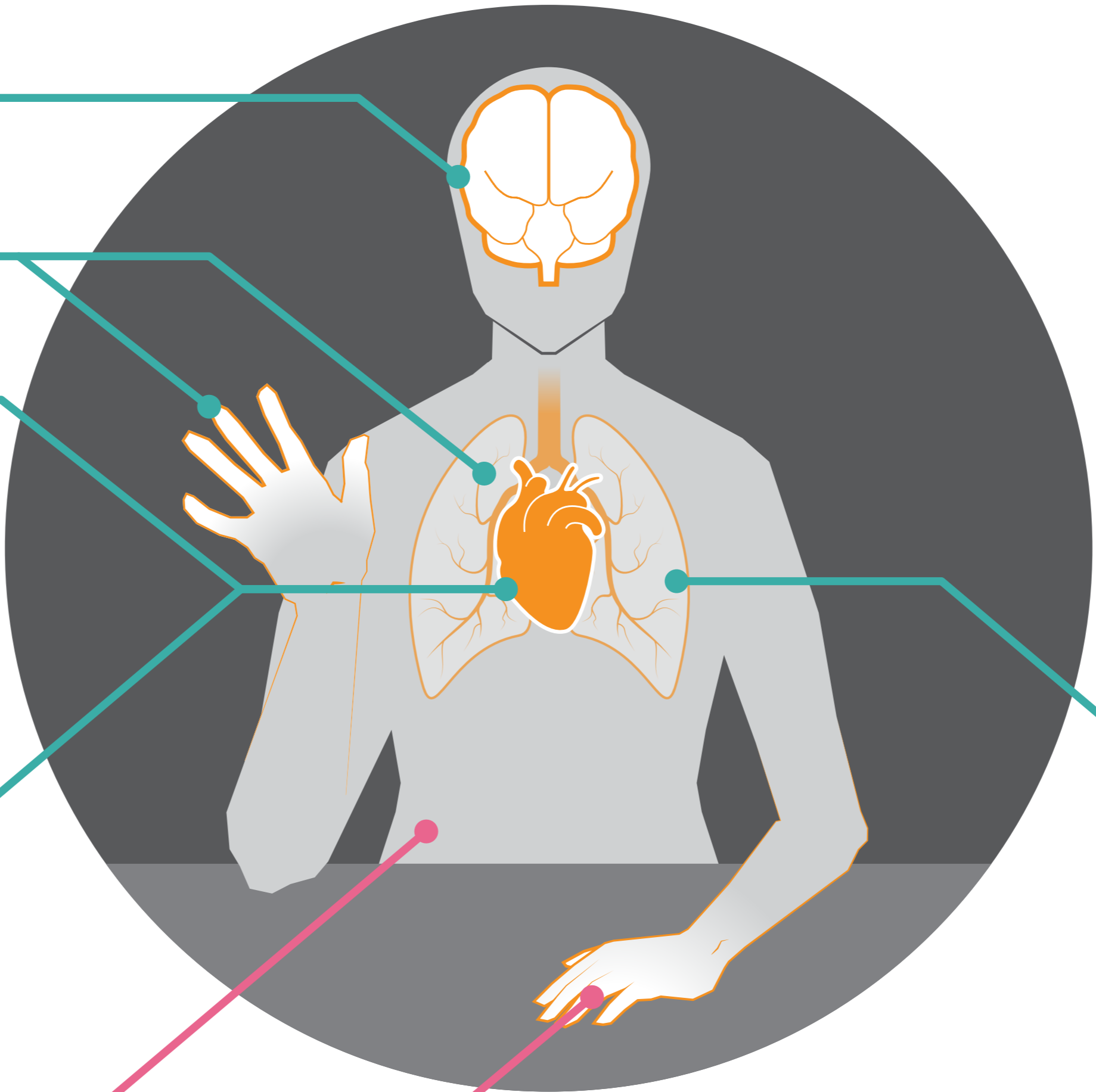
- Hue
- Saturation
- Luminosity

Opacity

- Full
- Non full

Fill

- Filling Constant
- Filling with gradient



Consistency

Choose and stick...

To a **fixed set** of **colors** indicating **context** and **focus**

To a **fixed set** of **line thicknesses** guiding visual weight

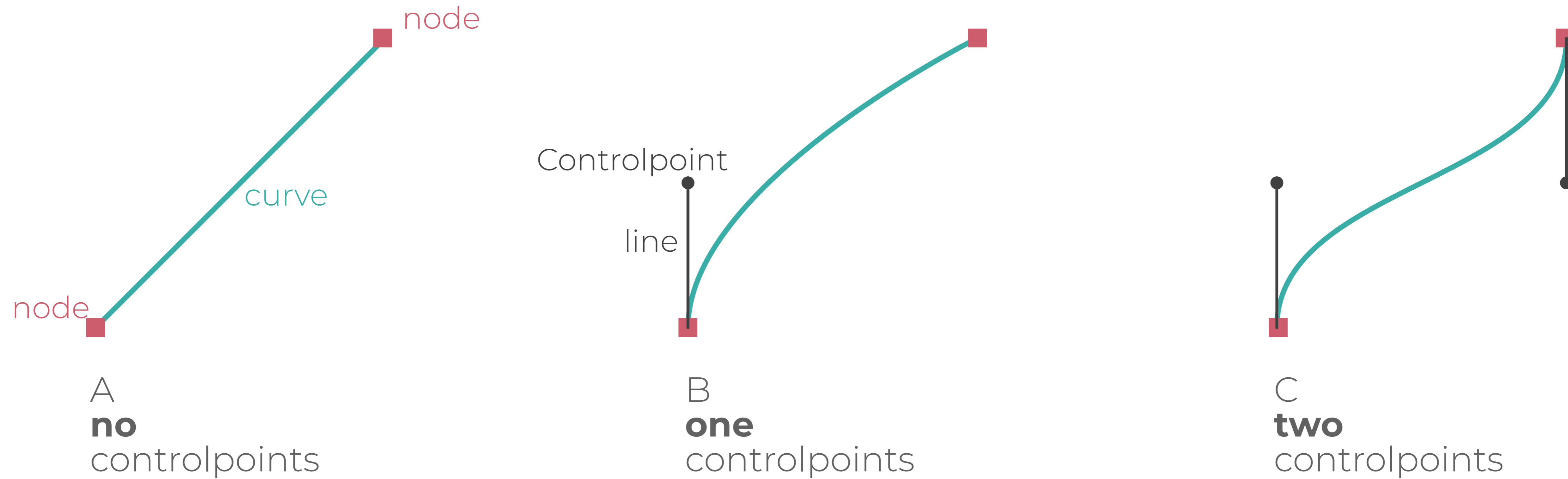
Keep it simple

Try to reduce the amount of details of your graphics to the minimum needed

Try to optimize the amount of path-points to the minimum needed

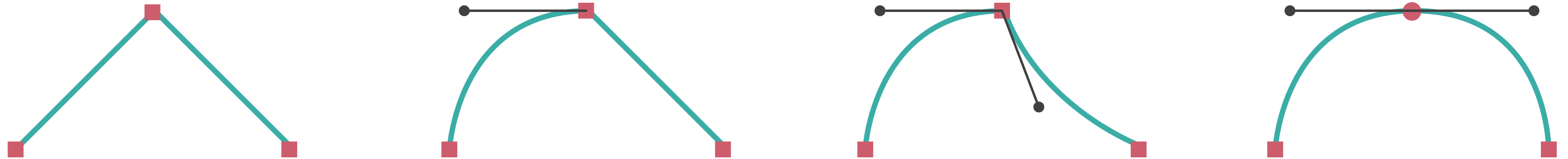
Don't overdefine your bezier curves (more later)

Vector Paths are Bezier curves...



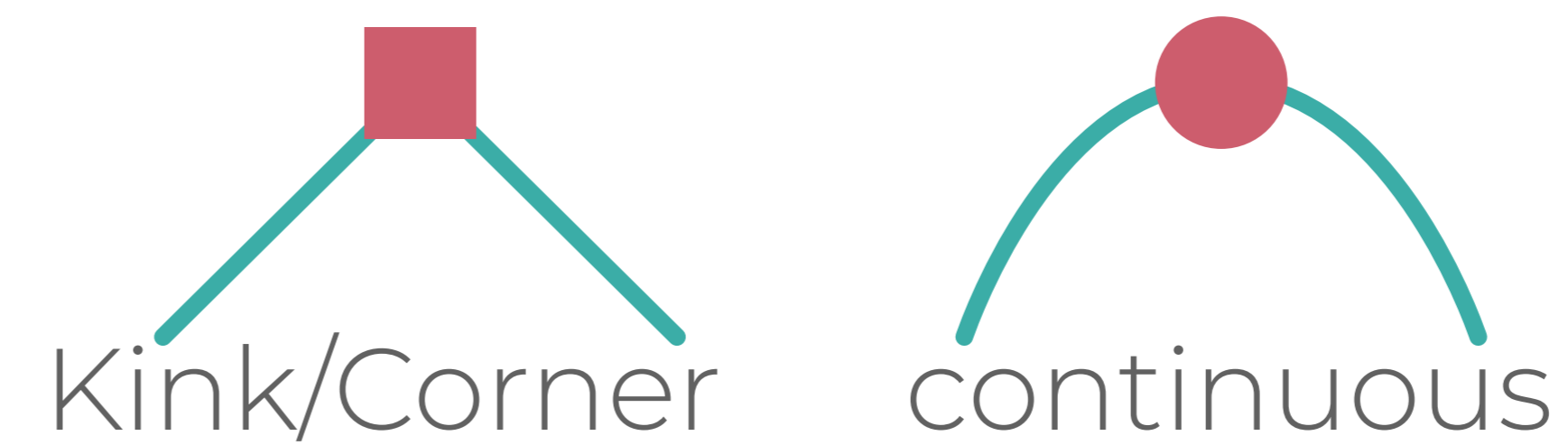
The **controlpoint line** is **tangential** to the **curve**
in the **node point** from which it **emerges**

Vector Paths are Bezier curves...

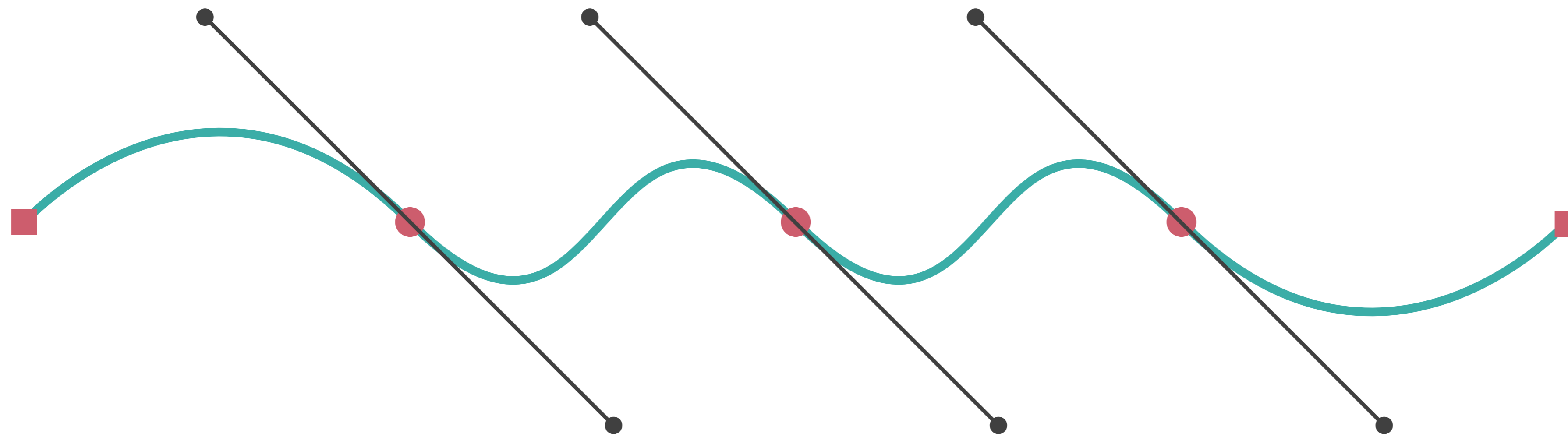


For **continuous** node transition points, the **controlpoint handles** need to form a line.

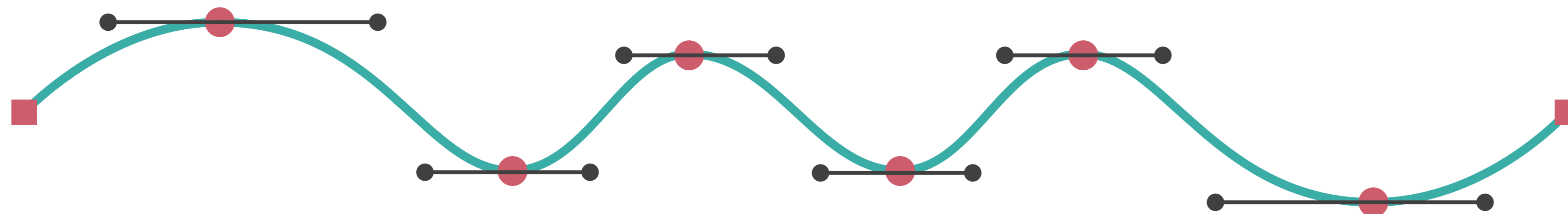
The nature of your node points is usually indicated:



Vector Paths are Bezier curves...

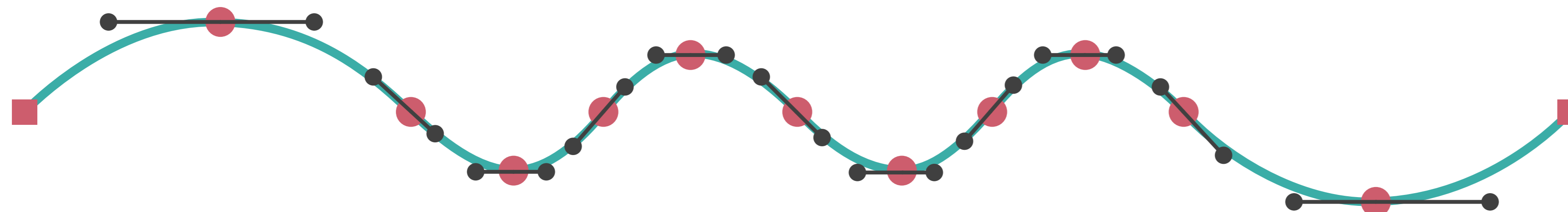


Nodes in **inflection points** of the curve



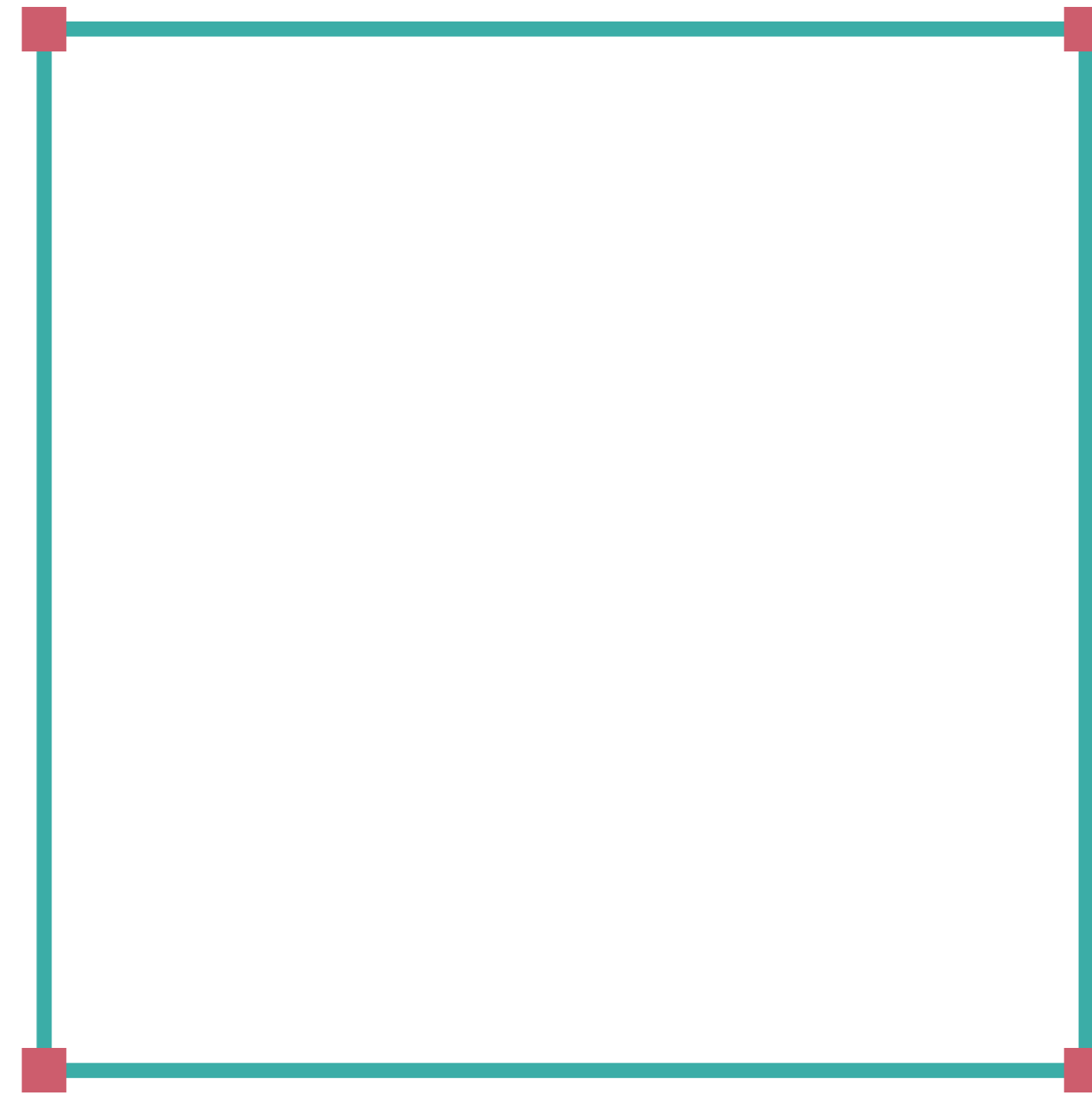
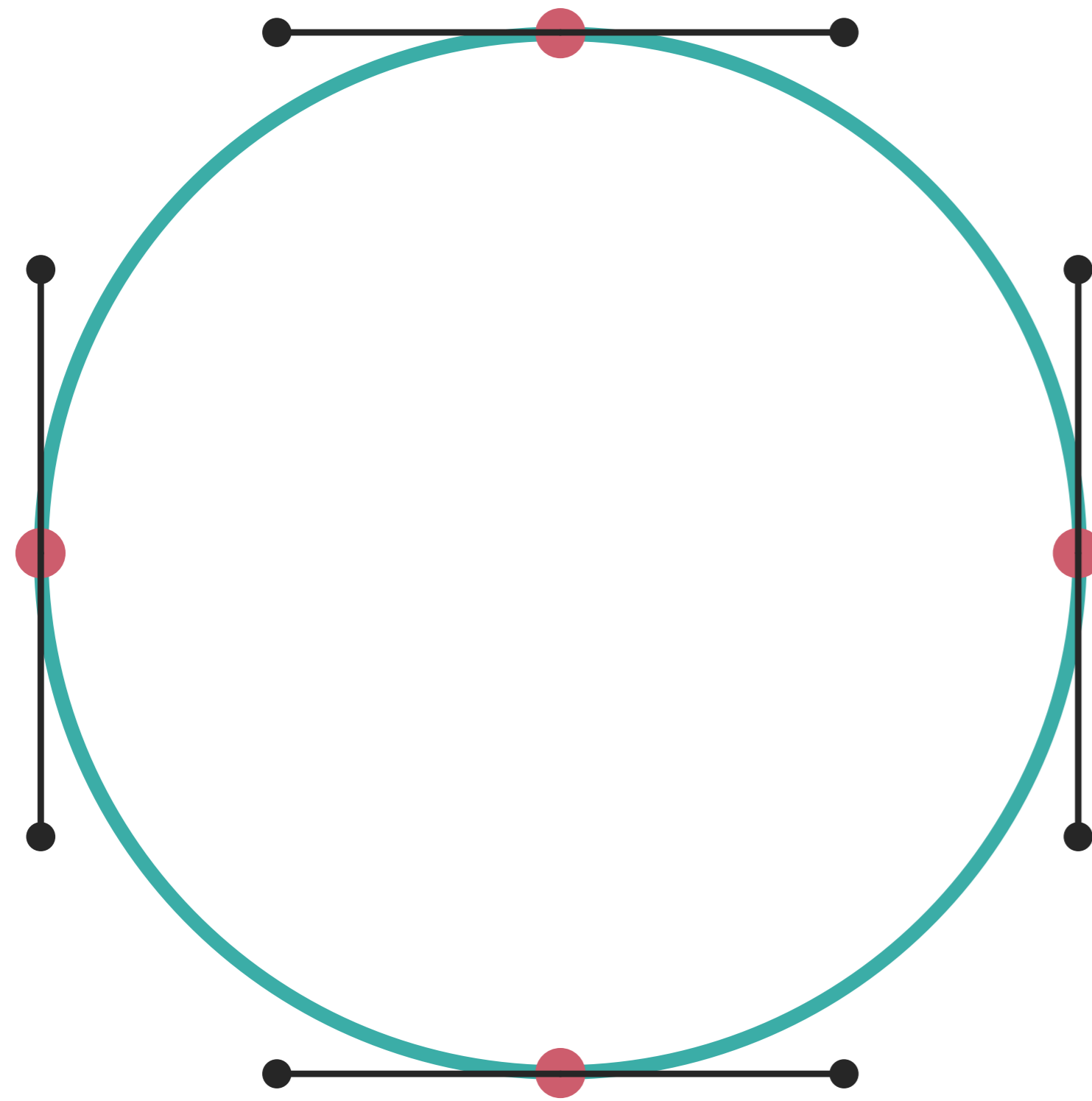
Nodes in **extrem points** of the curve

But don't over define your curves!



Depending on what part of the curve you want to have most control over, **either is ok**

Minimum / Optimal amount of Nodes for basic shapes:



Outline Part 2



Affinity Designer

Pros/Cons





Settings / Preferences

Introduction to the User Interface

Essential Tools and Functions

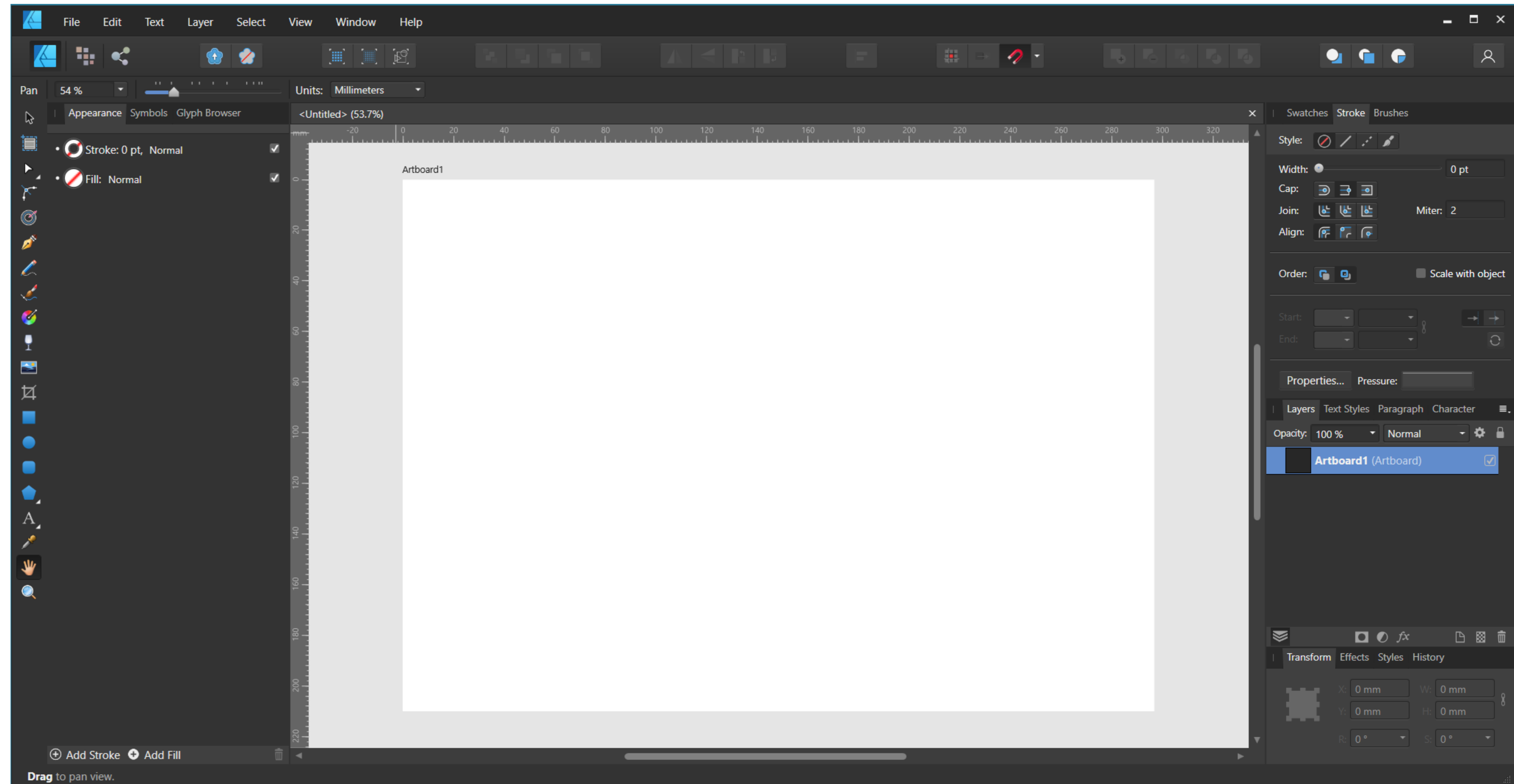
Vector graphics - Inkscape Pros/Cons

Let's compare ...

				
	Inkscape	Adobe Illustrator	Affinity Designer	Corel Draw
Pricing	FREE	20,99\$ annual Plan paid monthly239,88\$ annual Plan paid all once31,49\$ monthly no plan	50\$	554\$ Full387\$ Standard128\$ Essential
Open Source	Yes	No	No	No
Cloud based	No	Yes	No	No
Plug Ins	Yes also Python support	Yes most cost	No	Some all cost
User Interface	ok	good	good	good
Vectorising Photos automatically	Yes	Yes	No	Yes FullYes StandardNo Essential
Text and Typesetting	Basic	Basic	Full	Yes

Vector graphics - Settings / Preferences

Let's open Affinity...



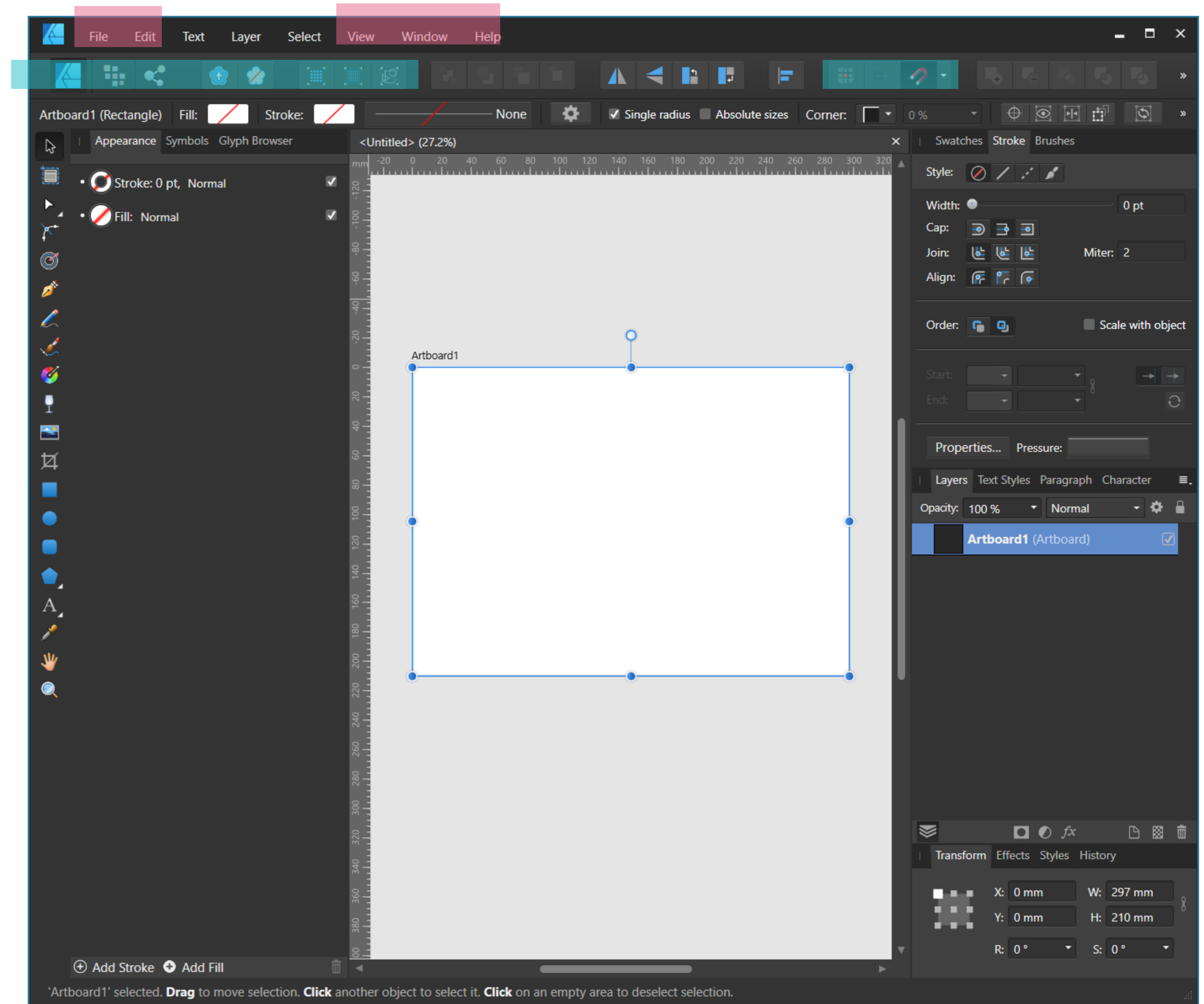
General Actions, Menus and Snapping

General Actions:

- Document (Open, Save...)
- Work (Un/Re-do, Copy/Paste)
- GUI appearance and “widgets”
- Settings / Preferences
- help

Behaviour

- “Personas”
- “Review modes”
- Snapping behaviour



Vector graphics - The User Interface - Key Elements and Tools

Main **Workspace** / **Object and Layer settings**

Workspace:

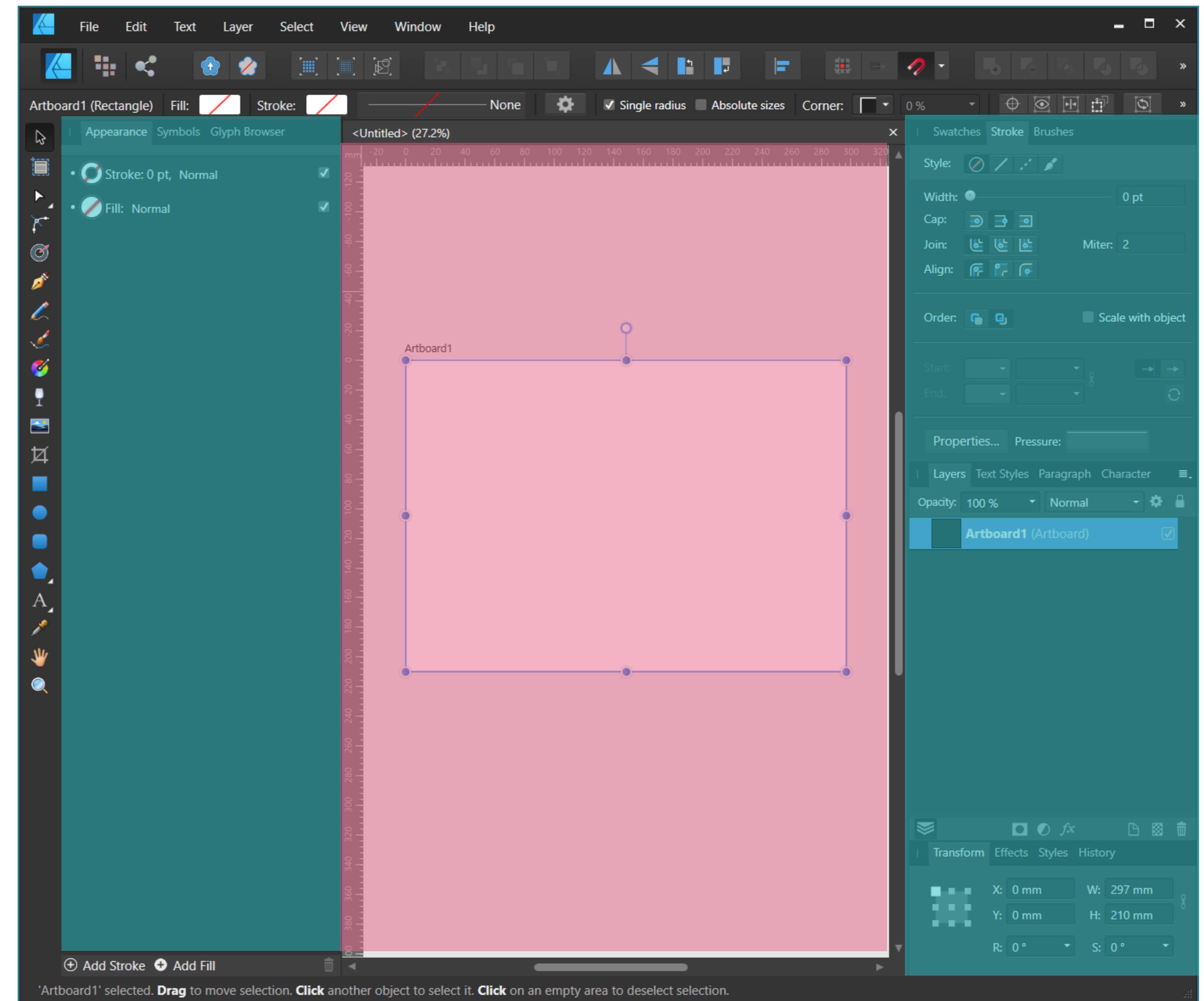
- Rulers and scroll bars
- Page as white Square
- Active Object highlighted by blue lines, and corners dots

Sidebar:

Sidebar is customisable

Recommended “widgets”:

- Swatches (document colour library)
- Fill and Stroke settings
- Brushes
- Layers
- Transform
- Appearance
- Symbols
- (Assets)



Vector graphics - The User Interface - Key Elements and Tools

Object actions / Tool tips

Object actions:

Mirror / Rotate

Object math

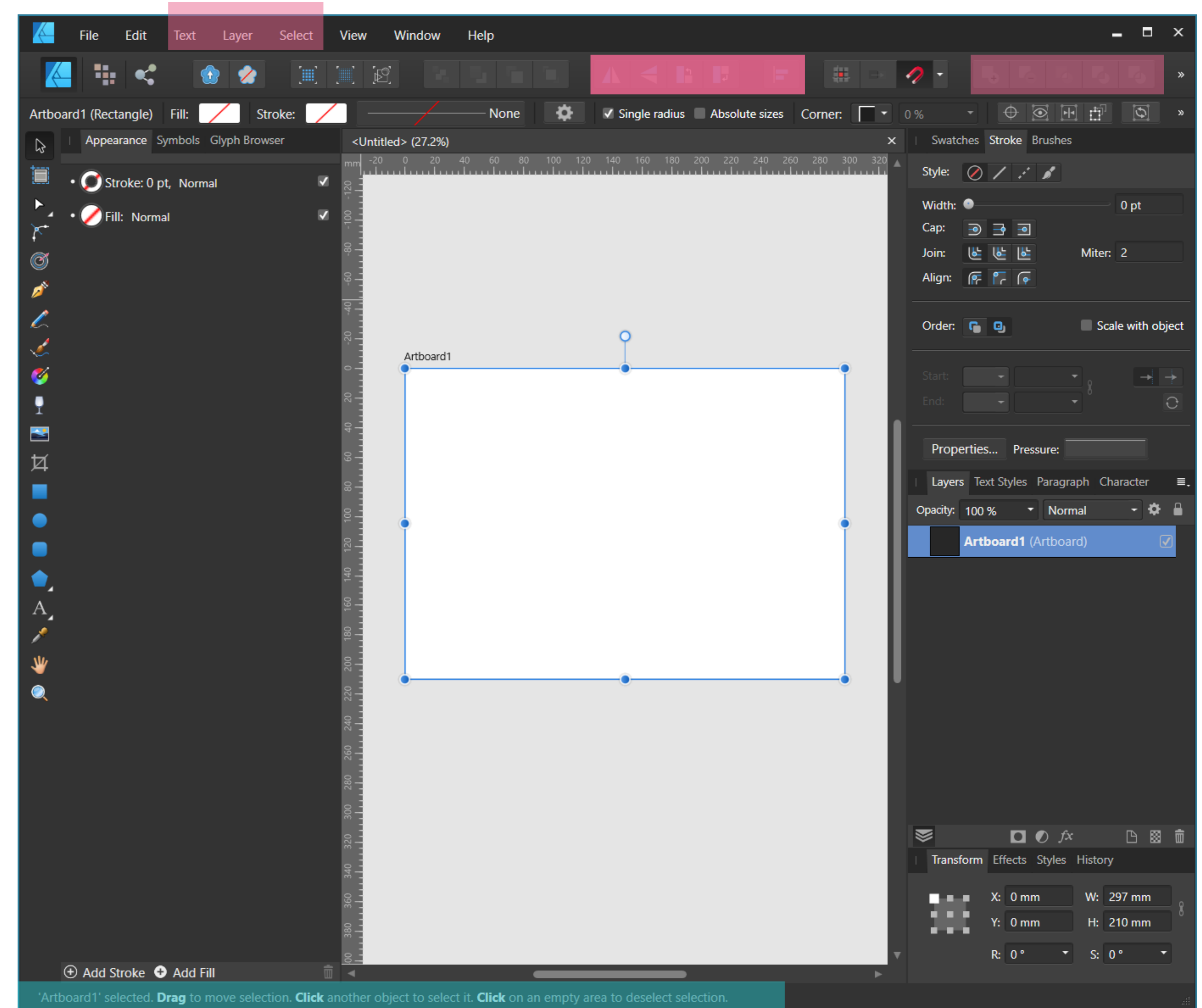
Menu actions:

- Object specific actions
(similar to what is available via right click on selected object)
- Current layer specific actions
(similar to what is available via right click on selected layer in layer menu)
- Selecting multiple objects based on similarities of properties

Tool tips

Available tool actions

Keyboard shortcuts



Online material:

Official tutorials:

- <https://affinity.serif.com/en-gb/tutorials/designer/desktop/>
- <https://affinityspotlight.com/articles/category/learning/>

Other Material / documentation:

- <https://affinityspotlight.com/article/downloadable-affinity-keyboard-shortcut-cheat-sheets/>
- <https://affinity.help/designer/en-US.lproj/index.html>