# Inkscape design + laser cutting instructions

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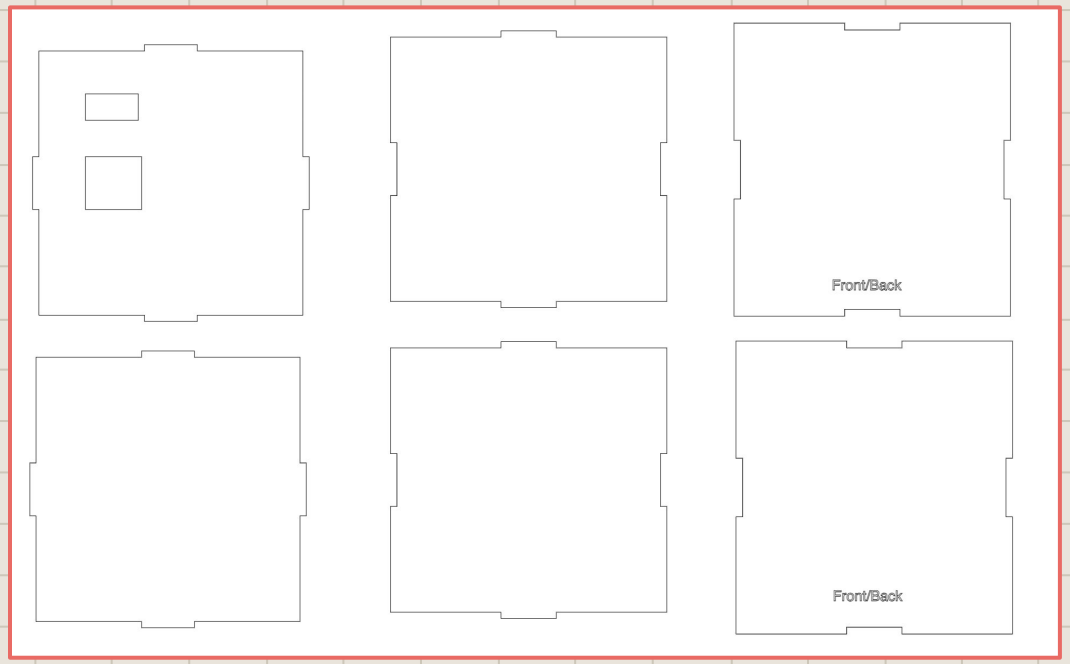
# You will be making a tabbed box, so that all the pieces of the box can fit together similar to a puzzle.




# Downloading Inkscape

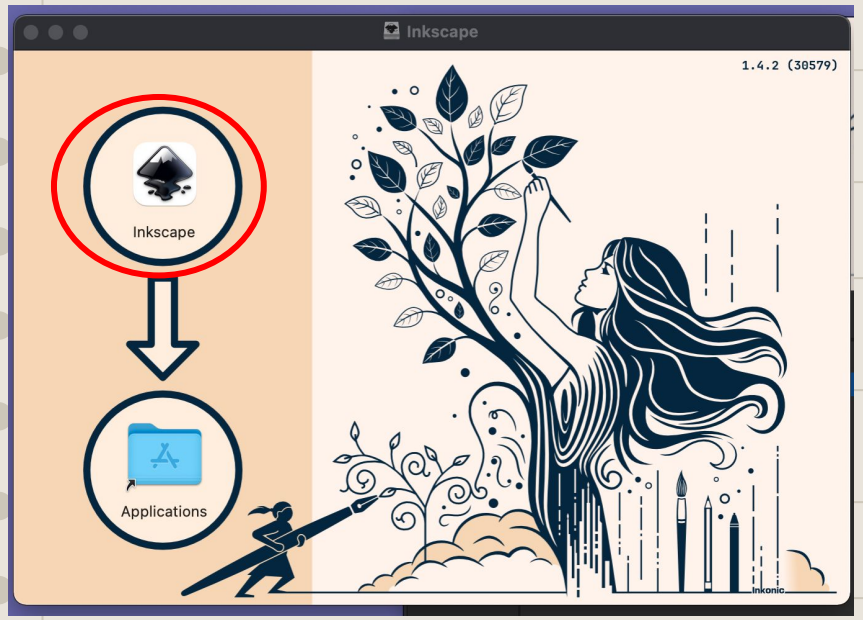
01. Go to https://inkscape.org/

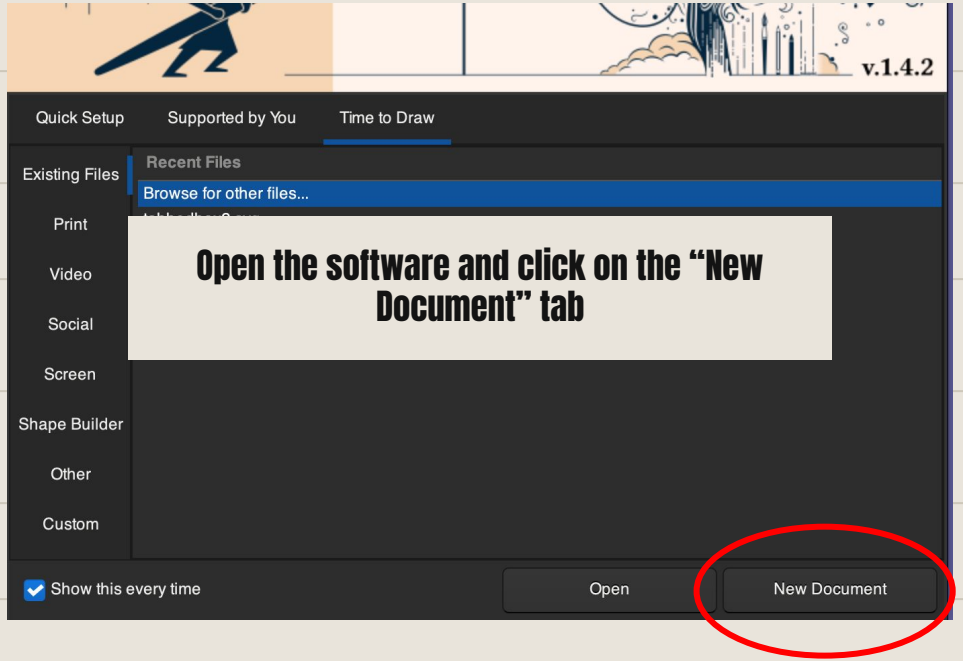
02. Click the “Download Now!” button.

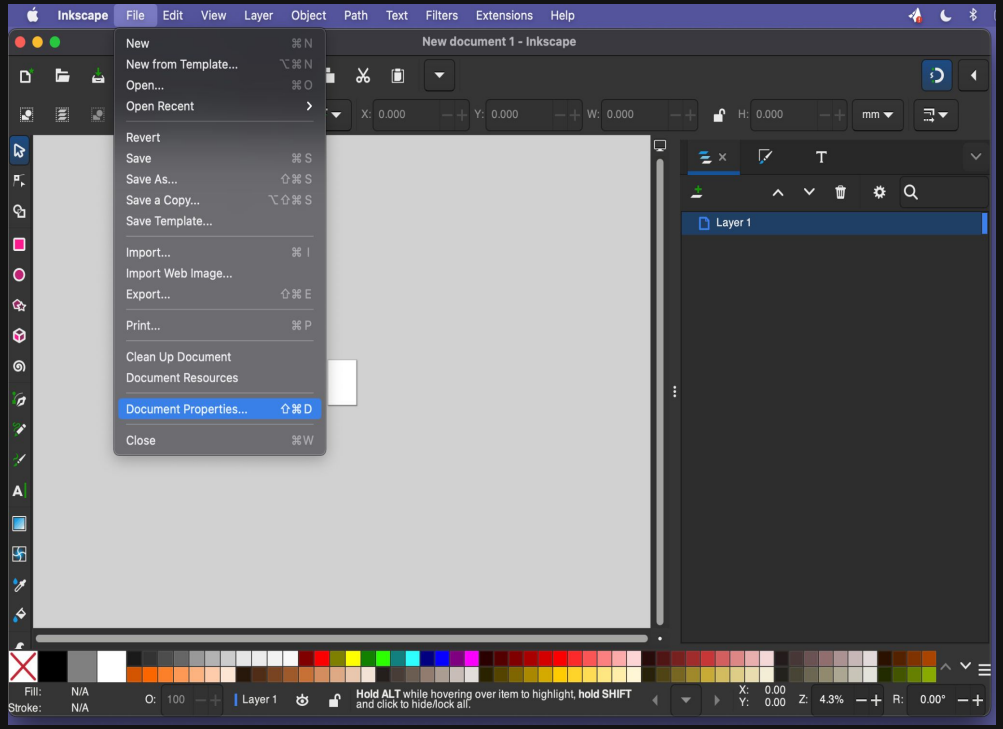
03. Choose the version that applies to your computer (Mac/Windows/etc.)

04. Download the software onto your computer.

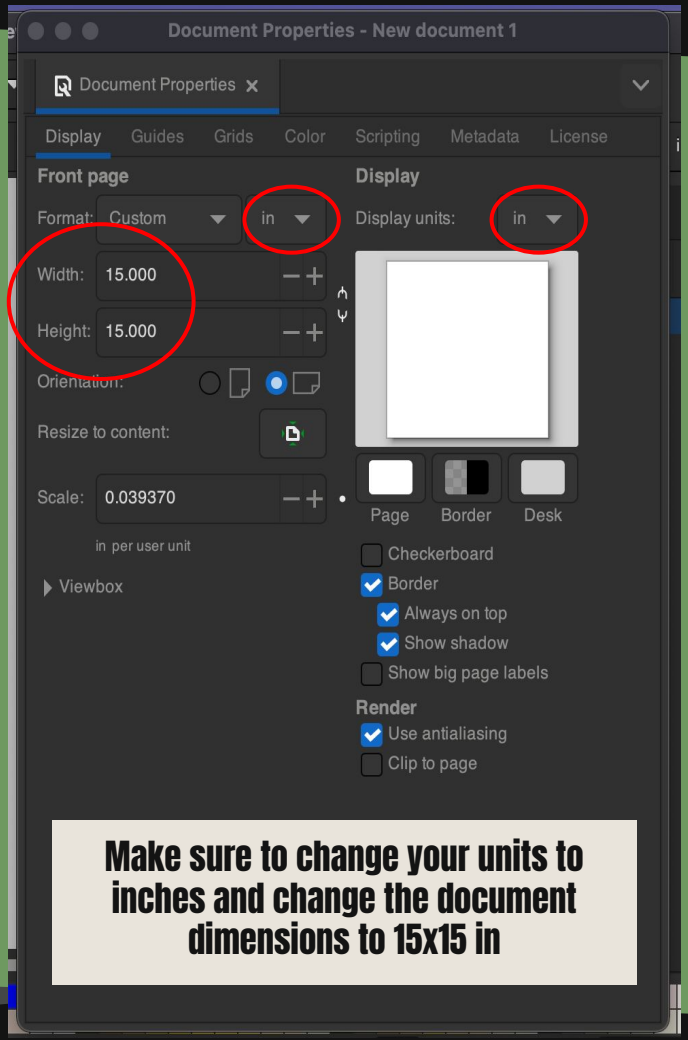
# Let’s make a new document



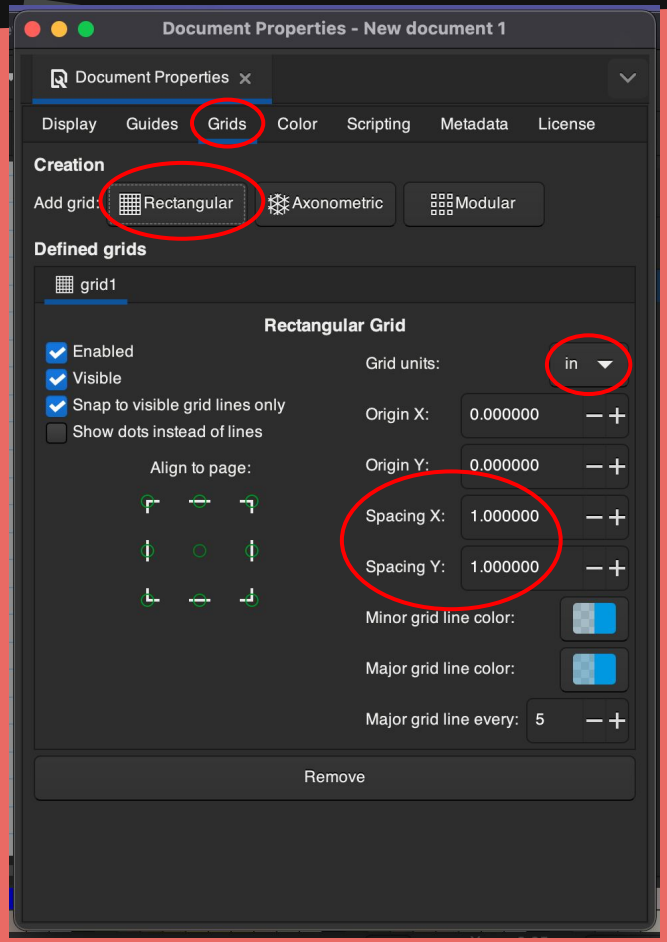






**Your page will look something like this.**
**Go to File → Document Properties**




**Make sure to change your units to inches and change the document dimensions to 15x15 in**



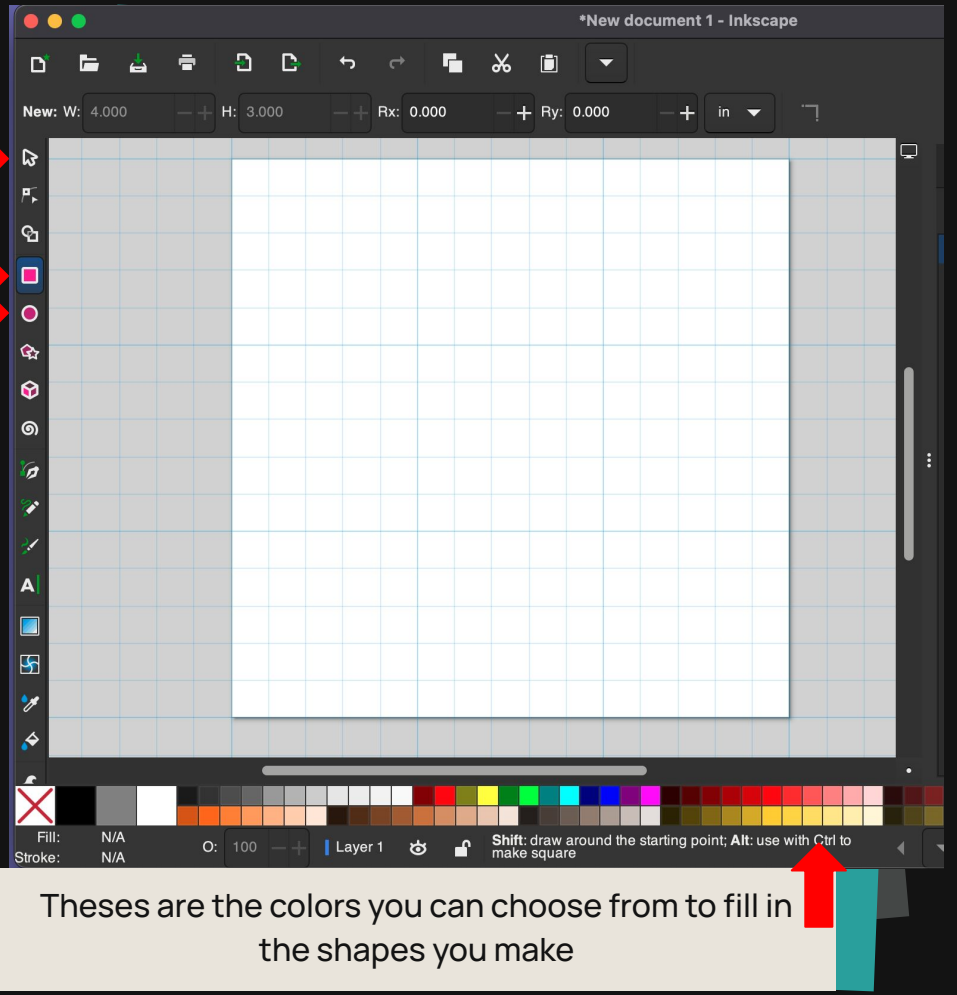

- Still in Document Properties, click on the “Grids” tab.
- Select a rectangular grid (units: inches)
- And 1 inch spacing for X and Y

This will help when you are measuring out your shapes to make sure everything is even.

Now you are ready to start designing you box!

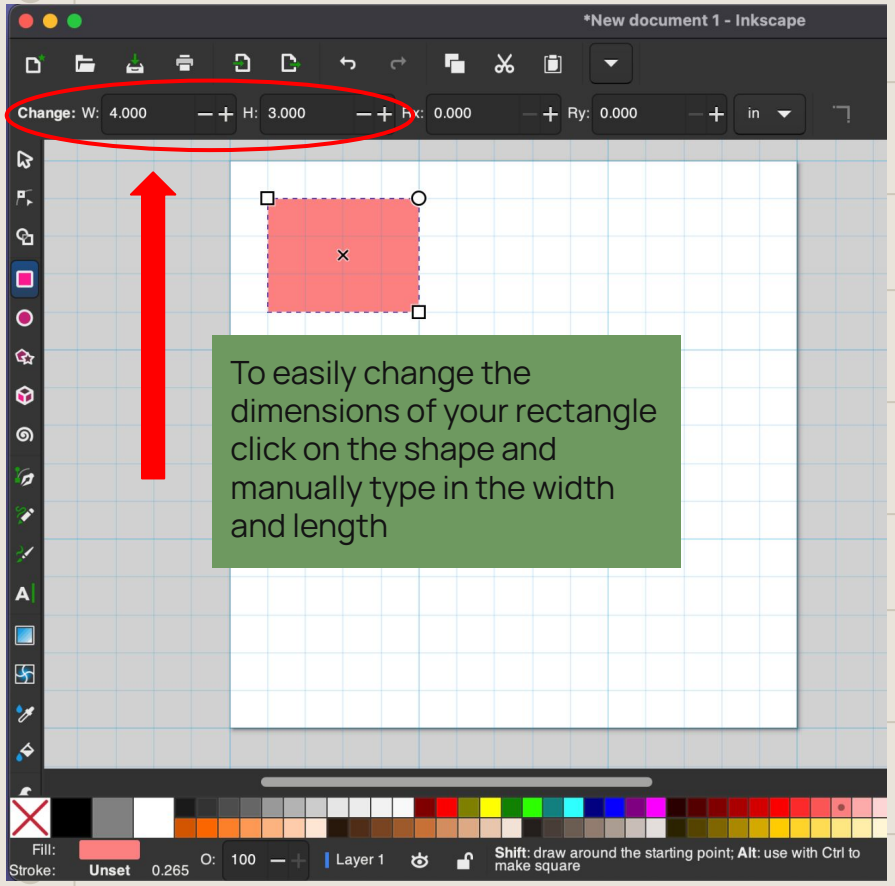
Pointer tool: Allows you to select your object and move it around

Adding Basic Shapes:
Rectangle/Square
Circle/Oval




Theses are the colors you can choose from to fill in the shapes you make

# Let's make a tabbed box!



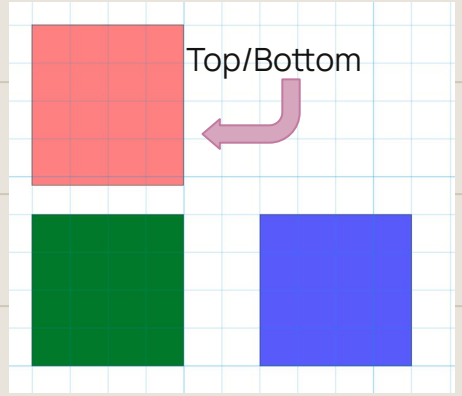

01. First click on the rectangle tool and make one rectangle with width: 4 inches and height: 4.236 inches
This will be the top and bottom of your box

02. Now you will make two more rectangles:
One with width: 4 inches and height: 4 inches
This will be the front/back of your box

The second one will have width: 4 inches and height: 4 inches
This will be the sides of your box

***Optional: make each component a different color when designing so nothing gets mixed up**

Your document should look something like this



# Making the tabs

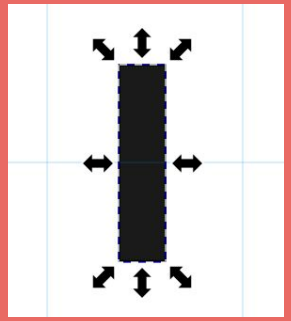
Now you will make a reference tab with

length: 1 inch and width: 0.118 inch

We'll use this to add the tabs onto the rectangles you already created.

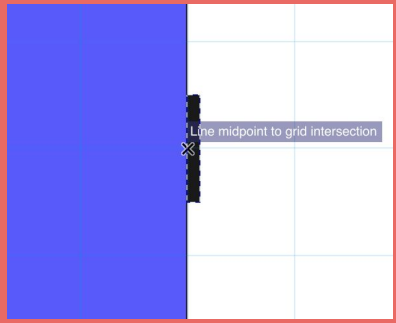
Each time you add a tab to your rectangles make a copy of the reference tab

***IMPORTANT: Make sure you properly align your tabs in the middle of your rectangles use the guidance lines provided when you move your reference tab!**

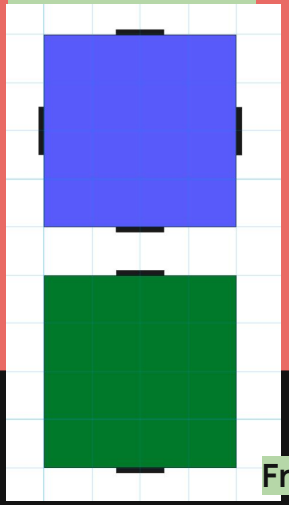


Create a tab and copy/paste it by clicking on it and pressing ctrl+c and ctrl+p
Make 6 copies of your reference tab

Add the copied tabs onto your side and front/back rectangles. Use the "X" to make sure your tabs are in the middle of your squares




Sides of the box



Once all the squares have been added it should look something like this

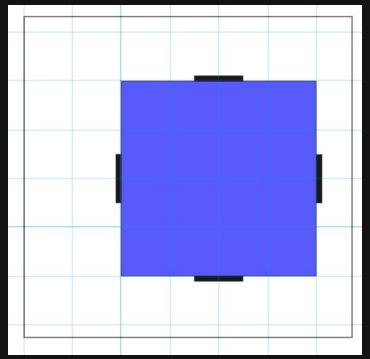
Front/Back of the box

For the next steps:

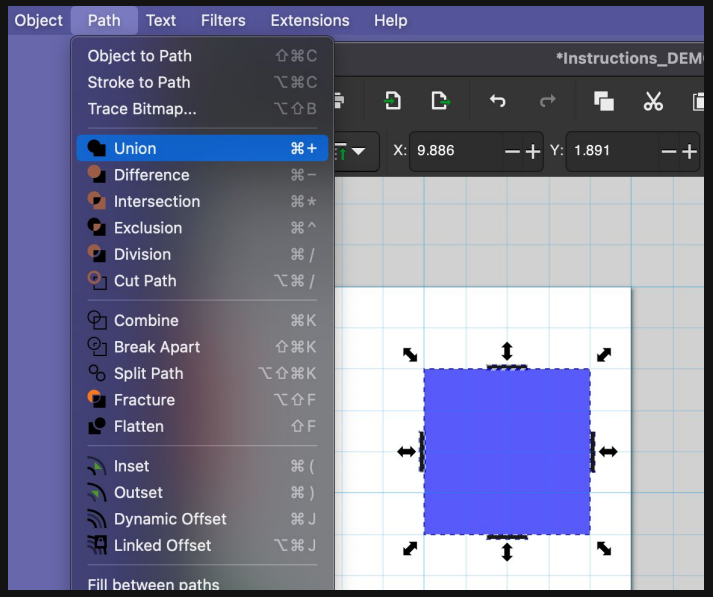
Right click and drag your mouse across the front/back rectangle to select the rectangle plus the squares you just added.

Then go to Path → Union

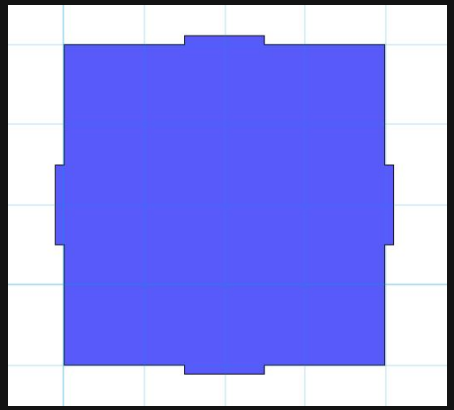
This will merge the shapes. Repeat this for the side rectangle



1. Selecting the rectangle + squares



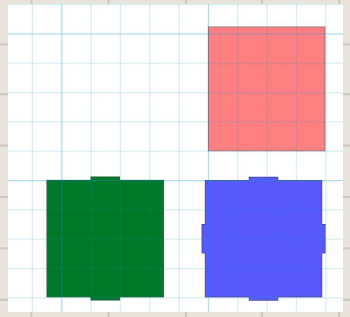

2. Path → Union



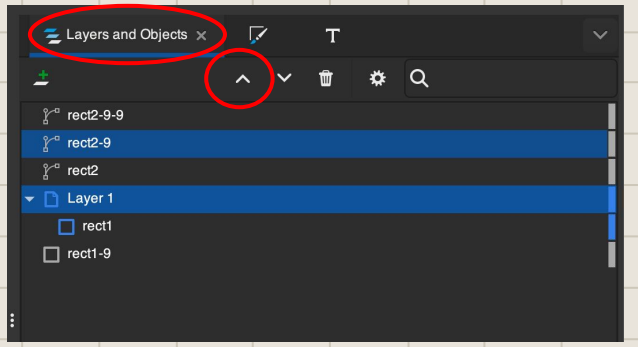
3. Your shape will look like this after you click the union button.

Repeat these steps for the side rectangle

You should now end up with your 2 tabbed squares



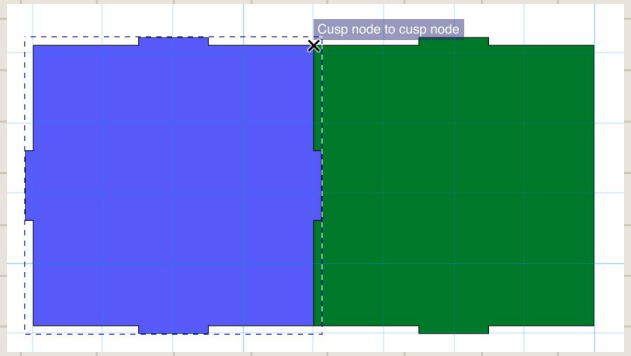
3. If the front/back rectangle is not on top, click on the front/back rectangle and adjust the layering in the “Layers and Objects” function



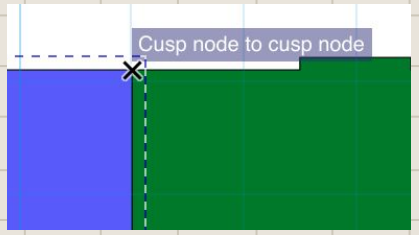

Now we will use the Path→Difference took to make indents so that the box can snap together!

1. First make 2 copies of the front/back side of the box (Purple Square)

2. Overlap the front/back of the box with the side rectangle (Overlap purple and green square) Make sure the front/back rectangle is on top!

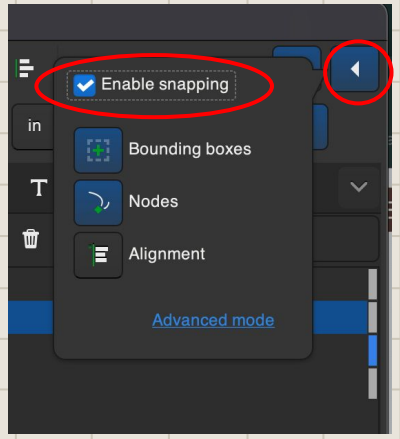



4. Once the boxes are properly orientated, overlap them until you see an “x” at the edges with the message “Cusp node to cusp node”, that means everything is evenly overlapped



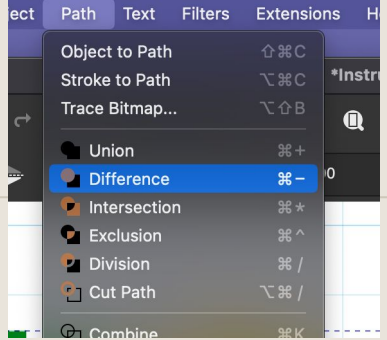

To make this process easier, click on the arrow button on the top right corner of your screen and “Enable Snapping”.

Make sure to zoom into the edges of the shapes making it easier to see the “x”.

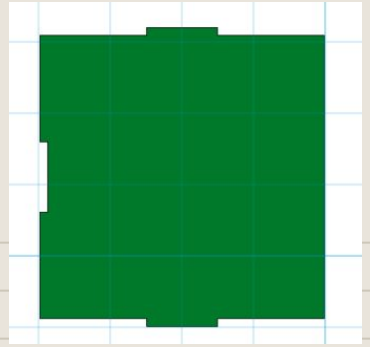


5. Select the overlapped shape and click on

Path → Difference

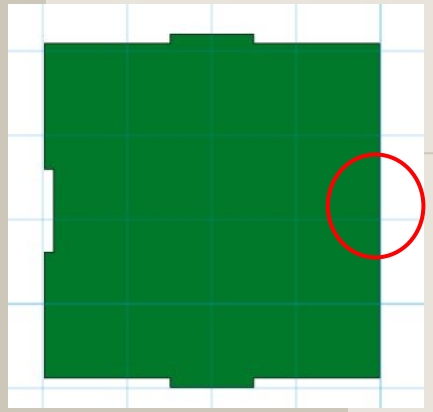



You'll now end up with this shape

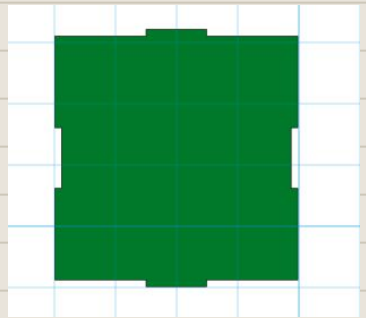


6. Now repeat the same steps on the other side of the side rectangle.

Use the second copy you made of the front/back of the box

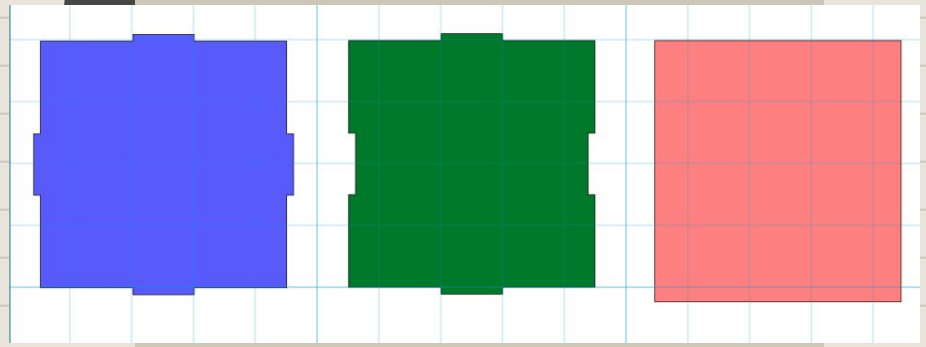


You have now completed the front, back, and sides of your box. Now we just have to make the proper indents to the top/bottom rectangles



After repeating the steps on the previous slide you should end up with this shape.

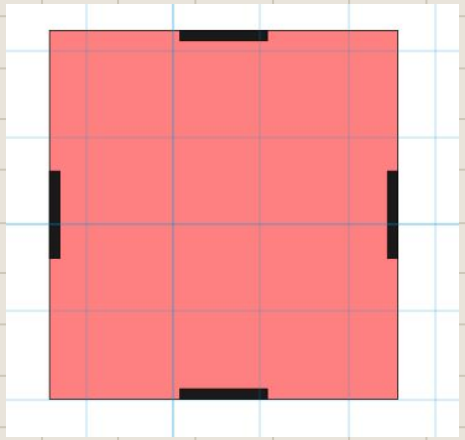
Click on the shape and make a copy of it. These will be the sides of your box. Also make a copy of the front/side piece.



# Now we'll add indents to the top/bottom of the box

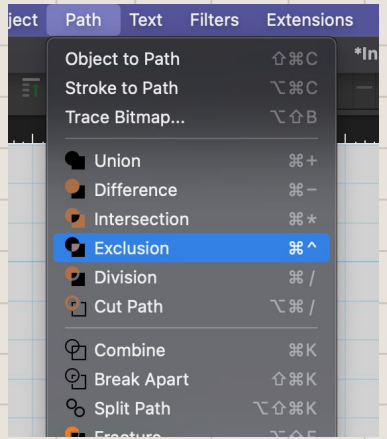
***Please pay close attention to what side you make indents on that will determine what side parts will connect to top/bottom**

**Using the reference tabs you made earlier, add 4 tabs to the rectangle**

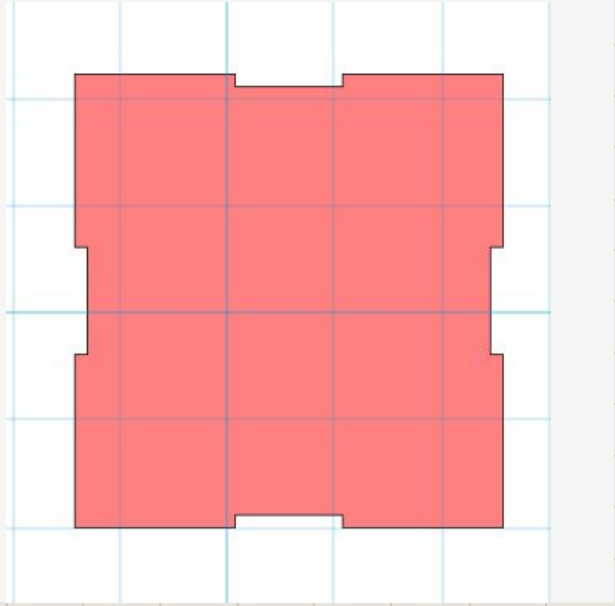


Use the "x" again to make sure these tabs are centered correctly, otherwise your box will not snap together

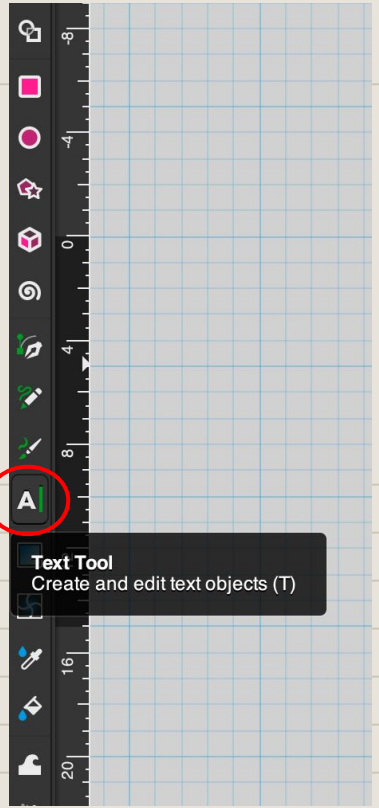
Use the Path → Exclusion tool

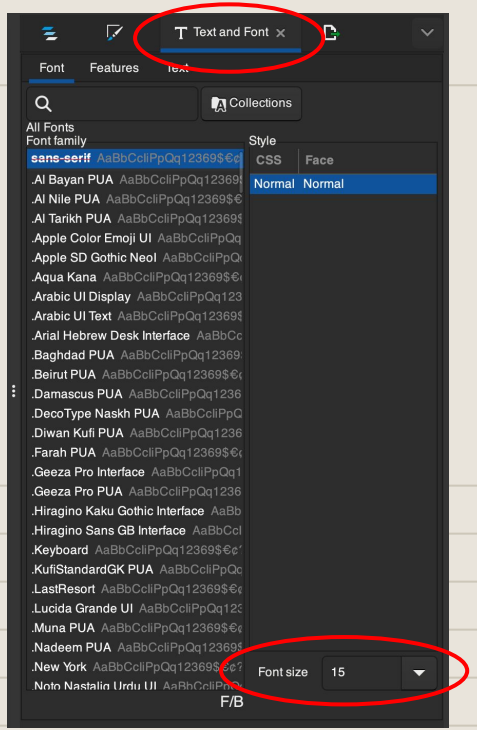



Your shape will look like this.



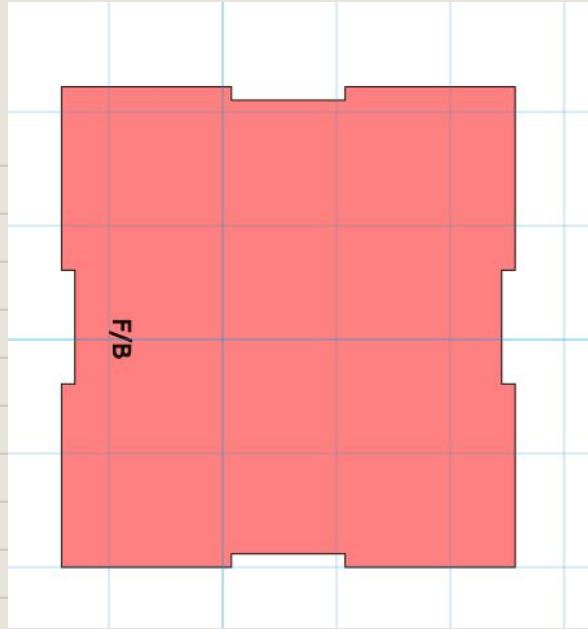
Now you've made the top/bottom of the box. Now let's label the sides.



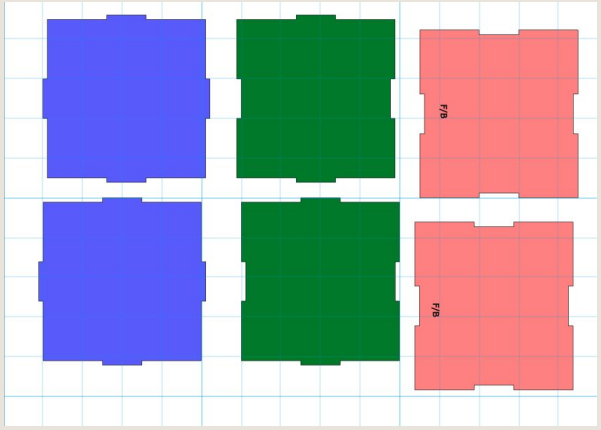



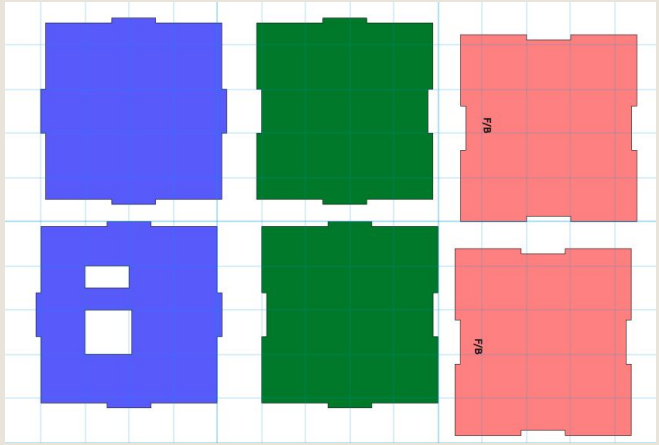

Now click on the "Text Tool" on the toolbar. To change the font size click "Text and Font" and adjust the size. Now write out "F/B" and add it to the **LONG** side of your box's top piece. Make sure this text is added to the correct side. This indicates that you will connect the front/back pieces to this side!

It should look like this



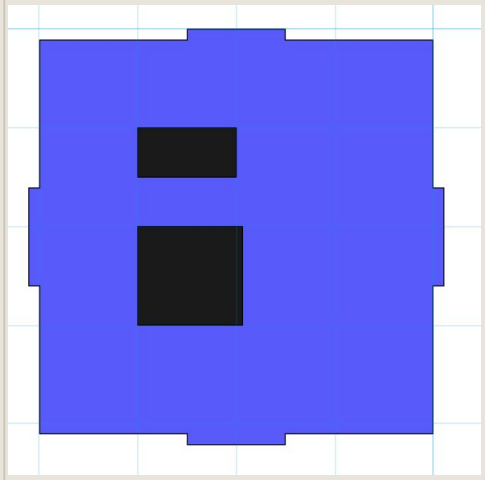
## Now make a copy of each piece you have created



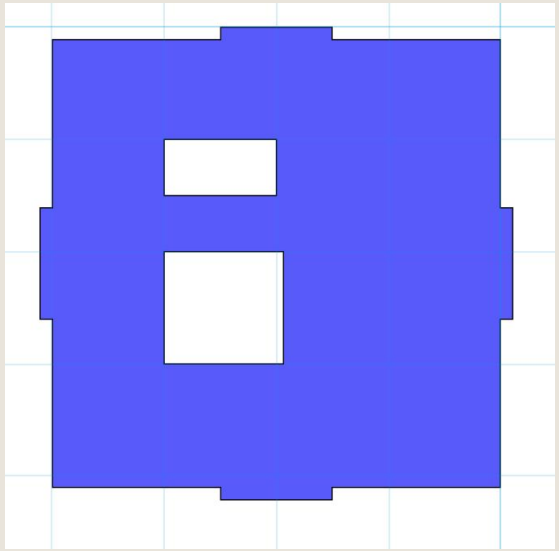

## Now select one of the front/back pieces (purple piece in the example)

**Make one rectangle with width: 1 inch and height: 0.5 inch**
**Add another rectangle with width 1.063 inch and height: 1 inch**

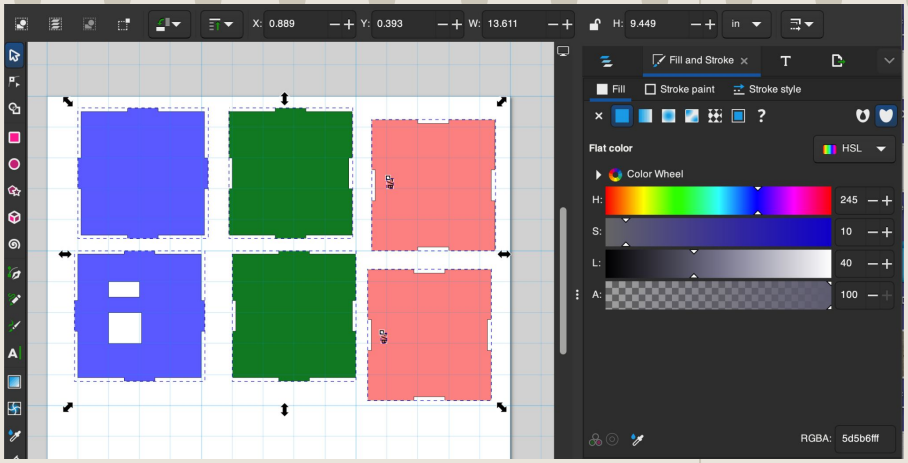


Add them like this to the front/back piece. The exact location does not matter but do not place them at the edge of the piece.

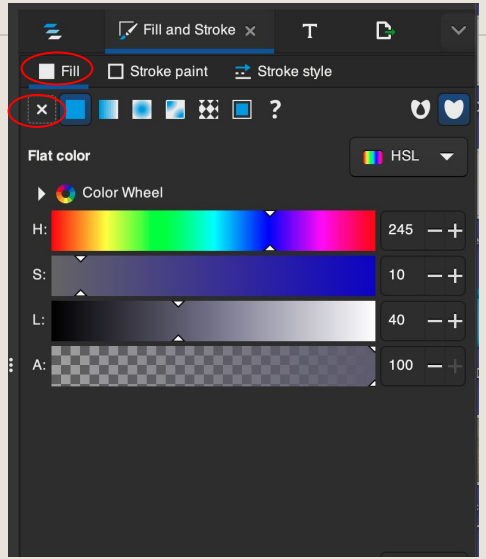
Use the path → exclusion tool

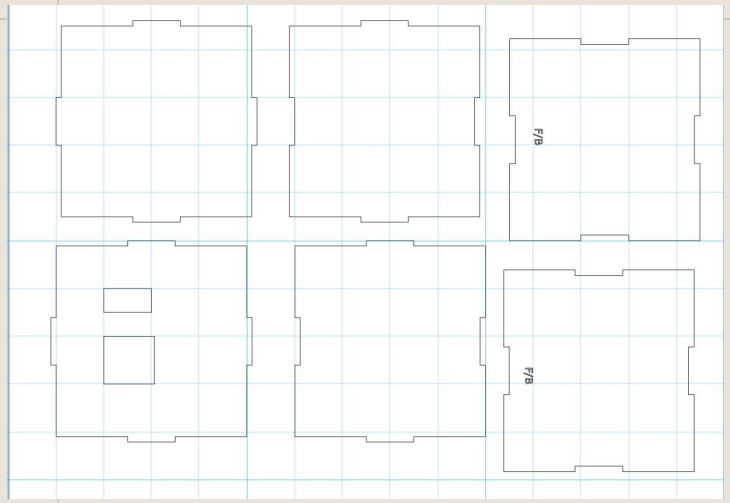


Now select all the pieces you have made.




After selecting all the pieces head over to the “Fill” tab and click on the “x”
This will make an outline of your design

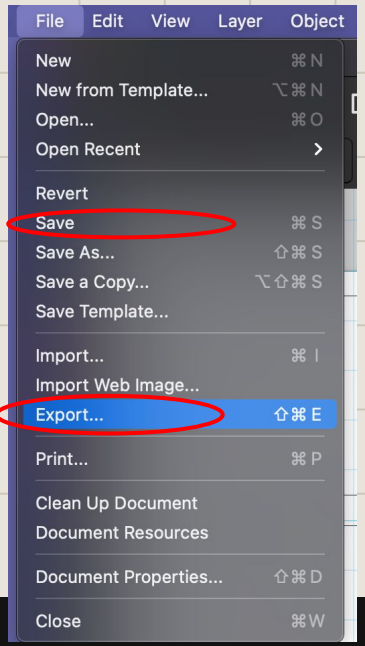


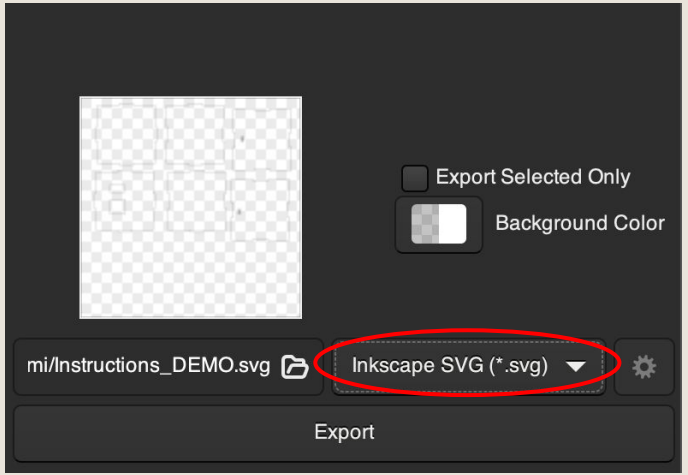
# Congrats!

You've now finished designing your tabbed box to hold you circuit parts!

Now you must save your file in a USB drive.




First save your design
**File → Save**
Then export it
**File → Export**




Name your file and export the file as an **Inkscape SVG** file.
Then once the file is saved to your computer, use a USB drive and upload the file to the USB drive.

**Now you're ready to start laser cutting!**

# Time to laser cut!

If you have never laser cut before please watch this video: Laser Cutting Tutorial

Scan your ID at the laser cutting machine and insert the USB drive. Open the file. The Inkscape software should open up.
Click on File→Print.
This will take you to the software you are using to cut your box.
Now go select a piece of plywood. **Make sure it is 1/8 inch piece of plywood or your design will not fit together.**
(1/8 inch is about 3mm)

**Annual goal 1**

Identify your broader objectives and direction for the year.

**Annual goal 2**

Identify your broader objectives and direction for the year.

**Long-term business goal**

Connect your annual goals to your company's vision and purpose.

# OPEN DISCUSSION 2

Open up the discussion to your audience once again and give them time to reflect on everything you just covered. Get them started with a few prompts to guide the conversation.
For example, how do they feel about the upcoming goals?

TIME: 30 minutes

### Note 1

Capture ideas and suggestions from your audience.

### Note 2

Use this space to take live notes during the conversation.

### Note 3

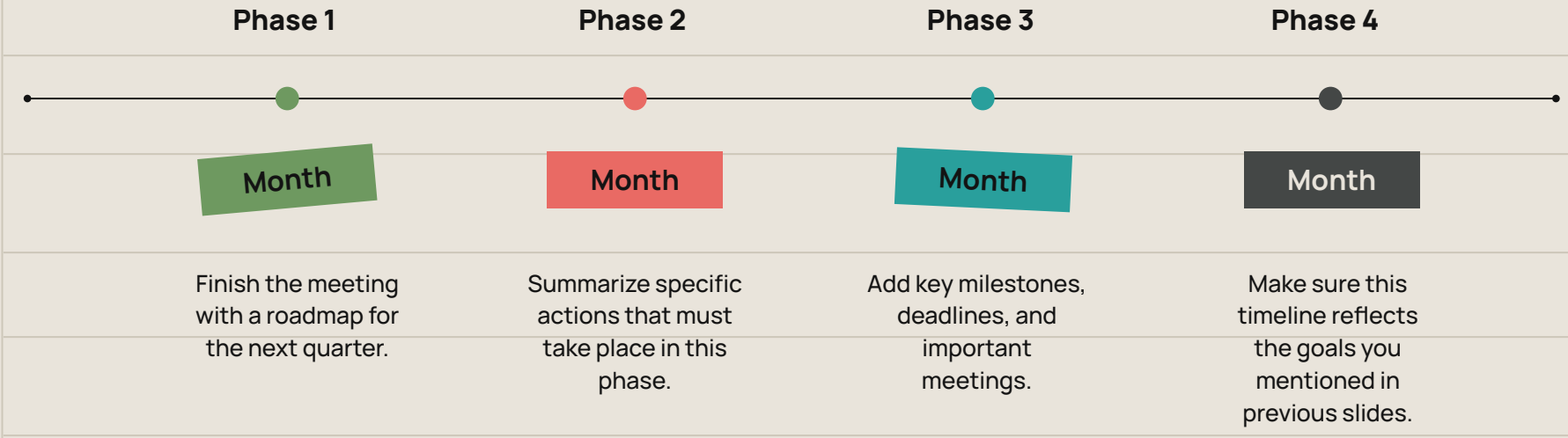
Don’t lose track of any contributions.

### Note 4

Capture ideas and suggestions from your audience.

TIME: 30 minutes

# TIMELINE


Phase 1
Phase 2
Phase 3
Phase 4
Month
Month
Month
Month
Finish the meeting with a roadmap for the next quarter.
Summarize specific actions that must take place in this phase.
Add key milestones, deadlines, and important meetings.
Make sure this timeline reflects the goals you mentioned in previous slides.

# NEXT QUARTER'S GOALS

1. **GOAL TITLE**

Outline the plan for next quarter. Set short-term goals, targets, and objectives.

**Add a relevant metric: 00%**

2. **GOAL TITLE**

For each objective, briefly explain why it should be a priority for next quarter.

**Add a relevant metric: 00%**

3. **GOAL TITLE**

Make sure each goal is specific, measurable, achievable, relevant, and time-bound.

**Add a relevant metric: 00%**

# NEXT STEPS

## GOAL 1

Set your goals or performance targets for next quarter. Justify why each goal is a priority for the business.

## GOAL 2

Make sure each goal is specific, measurable, achievable, relevant, and time-bound (SMART).

## GOAL 3

Use this slide as a springboard for discussion. You can expand on these goals later in the presentation.

# THANK YOU!