

Oriol Baldrís and Roger Vendrell



UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH



WHO WE ARE



We are Oriol (right) and Roger (left), two engineering students from Barcelona who are staying in Cambodia to carry out a collaboration with Trash Is Nice, a plastic recycling station based in Phnom Penh.

Our fields of study are Physics and Artificial Intelligence respectively.

oriol.baldris@estudiantat.upc.edu
roger.vendrell.colet@estudiantat.upc.edu

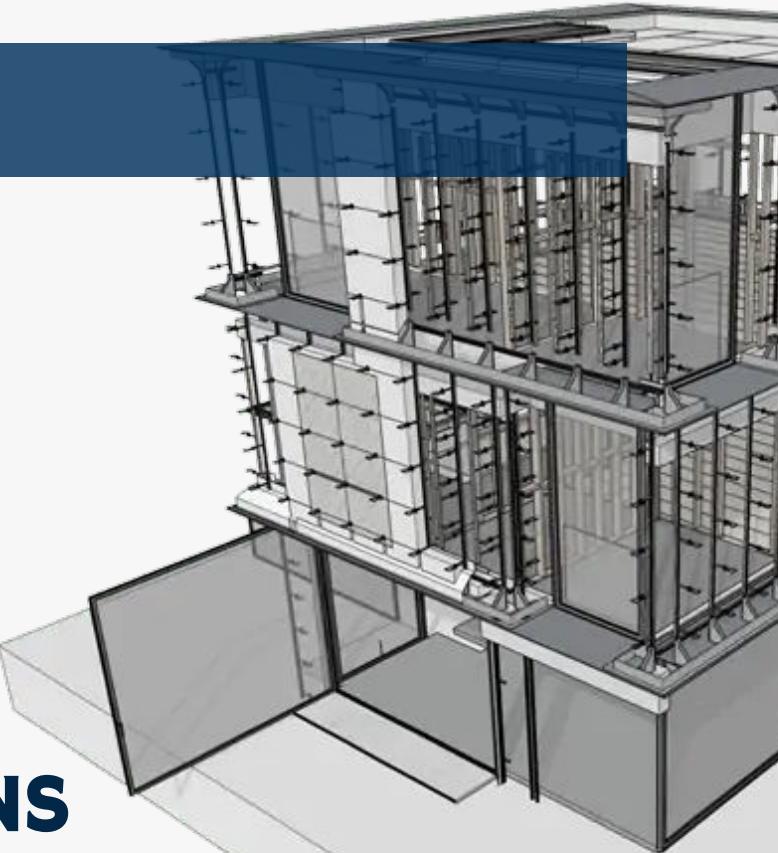
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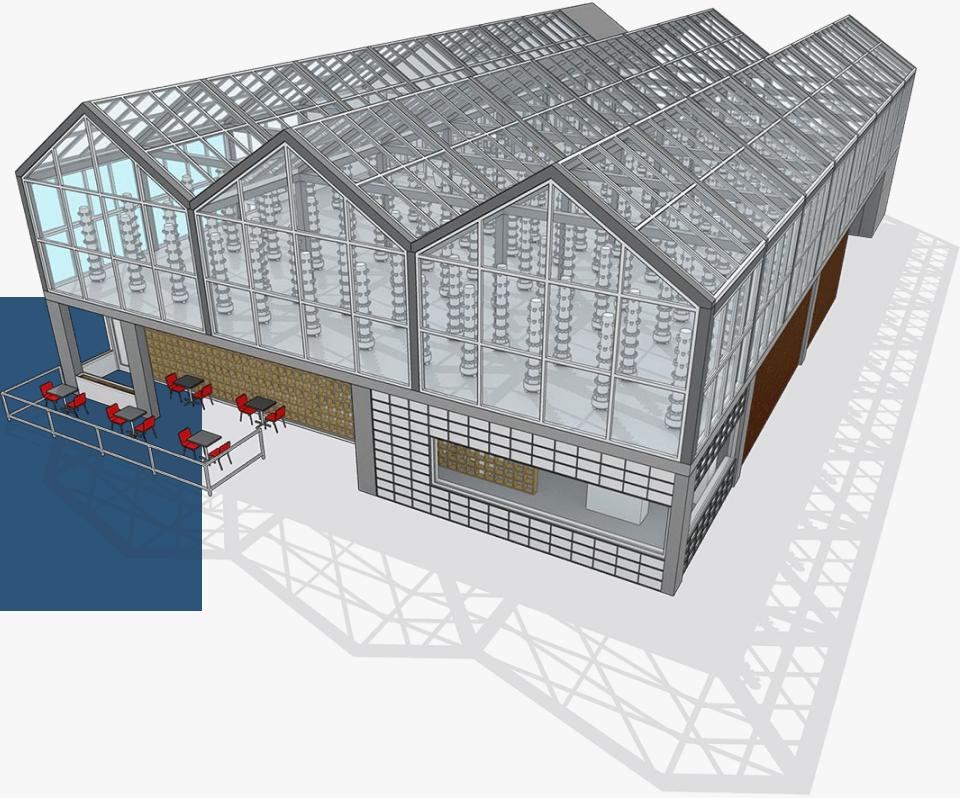
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SETUP

SketchUp Online is the simplest free 3D modelling software on the web.

Click [here](#) to access.



Sign In with Google, Apple, Microsoft or
create your own account.



 Trimble

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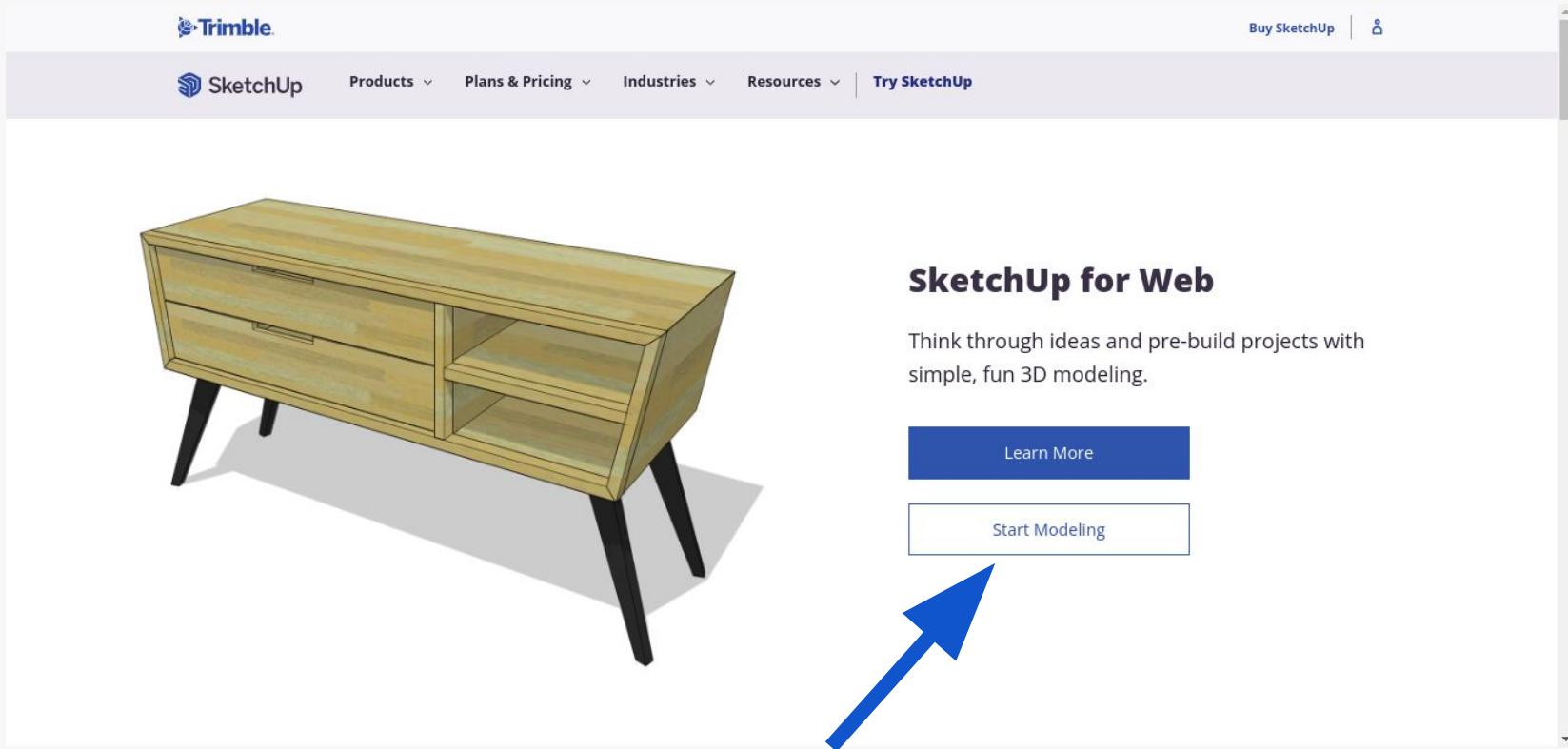
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Start modelling...



The screenshot shows the SketchUp website homepage. At the top left is the Trimble logo. To the right are links for "Buy SketchUp" and a search icon. Below the header, there's a navigation bar with "SketchUp" and dropdown menus for "Products", "Plans & Pricing", "Industries", "Resources", and "Try SketchUp". The main content area features a large 3D rendering of a light-colored wooden cabinet with two drawers and open shelving, supported by black legs. To the right of the model is a section titled "SketchUp for Web" with the subtext "Think through ideas and pre-build projects with simple, fun 3D modeling." It includes a blue "Learn More" button and a white "Start Modeling" button. A large blue arrow points from the bottom center towards the "Start Modeling" button.

Trimble

Buy SketchUp | 

SketchUp Products Plans & Pricing Industries Resources Try SketchUp

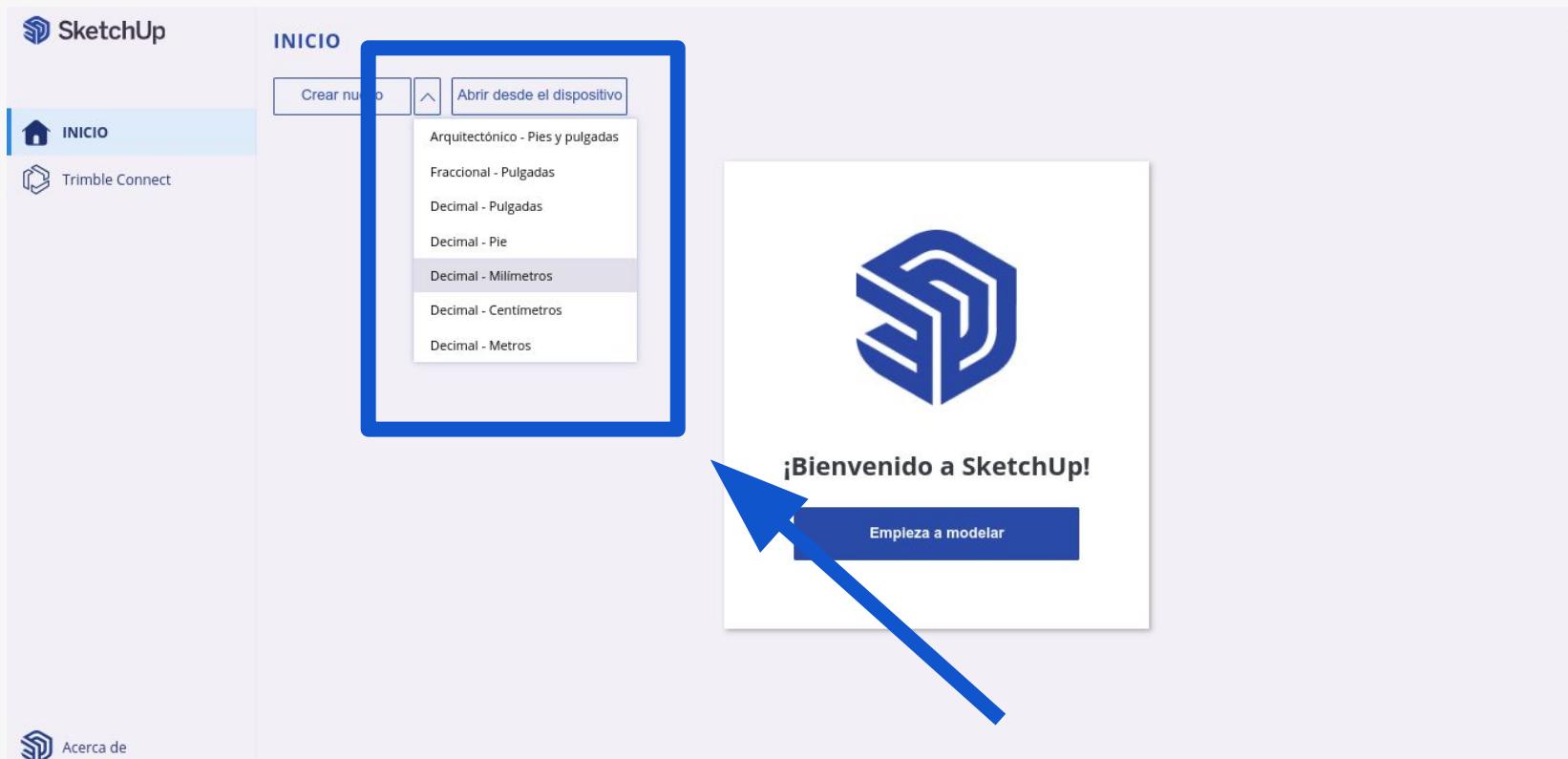
SketchUp for Web

Think through ideas and pre-build projects with simple, fun 3D modeling.

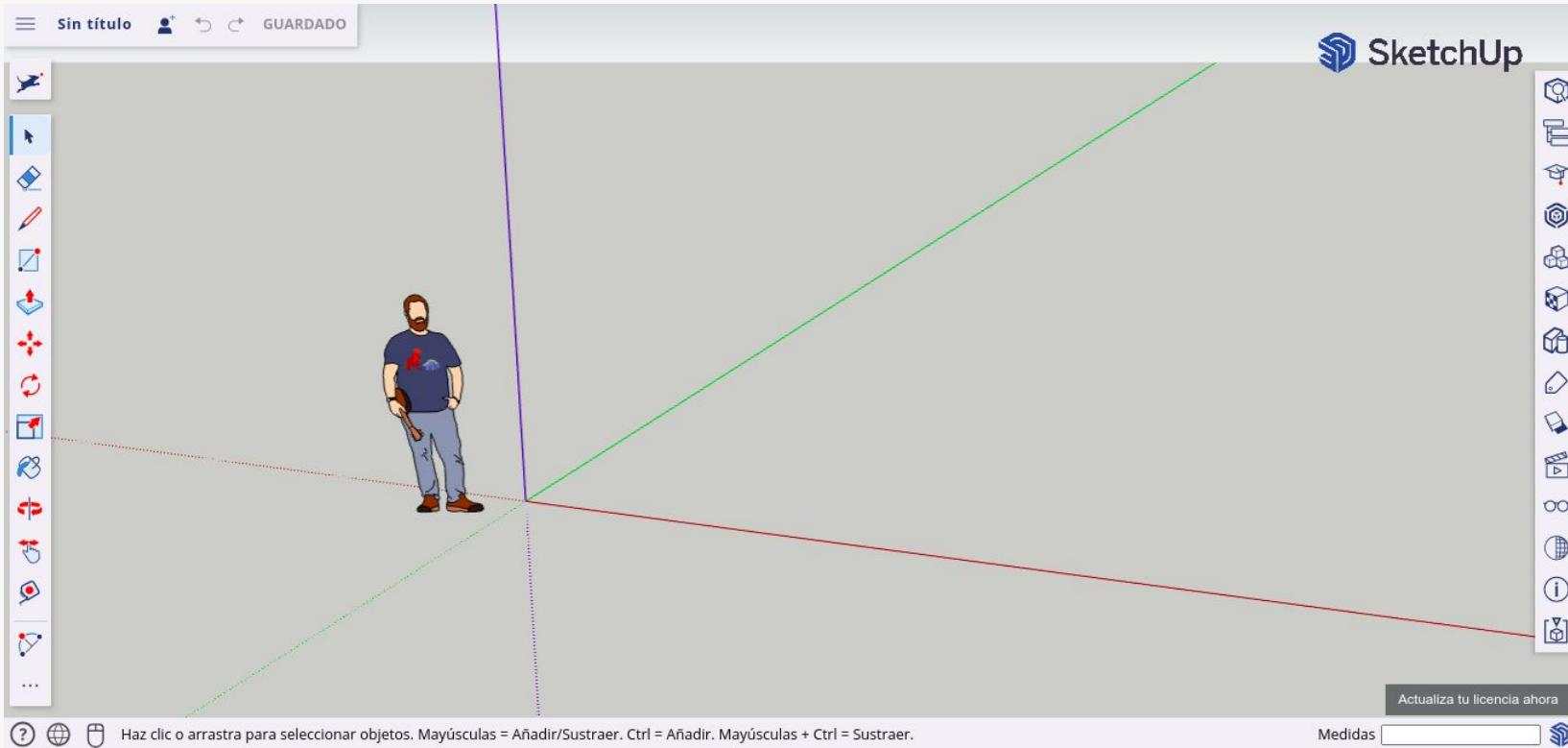
Learn More

Start Modeling

When creating a new project, make sure to choose your preferred units of measurement.
We recommend using millimeters.



You are all set up! 😊

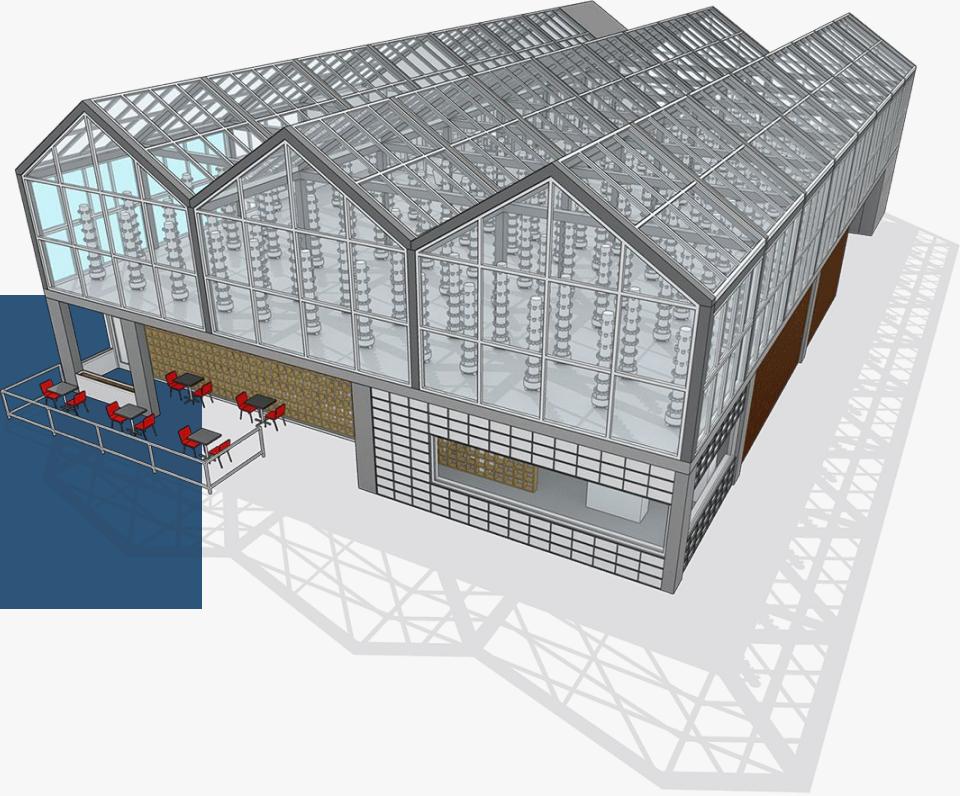


2

BASICS

A lot can be done in SketchUp knowing
only the very basics.

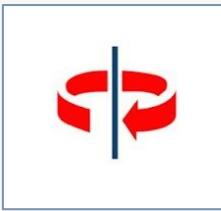
Use your intuition to build complex
models with just a few tools.



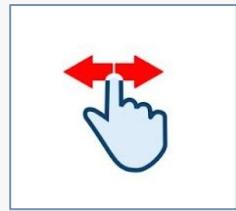
2.1 Navigation



SELECT



ORBIT



DISPLACE



ZOOM

2.2 Basic tools



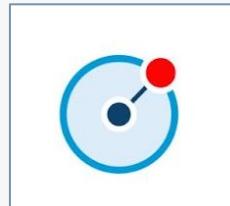
LINE



ERASER



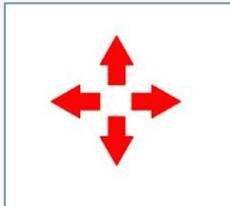
RECTANGLE



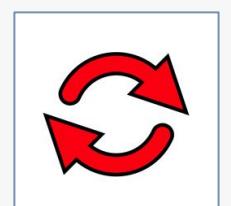
CIRCLE



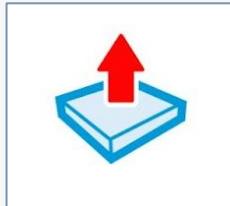
MEASURE



MOVE



ROTATE



PUSH/PULL

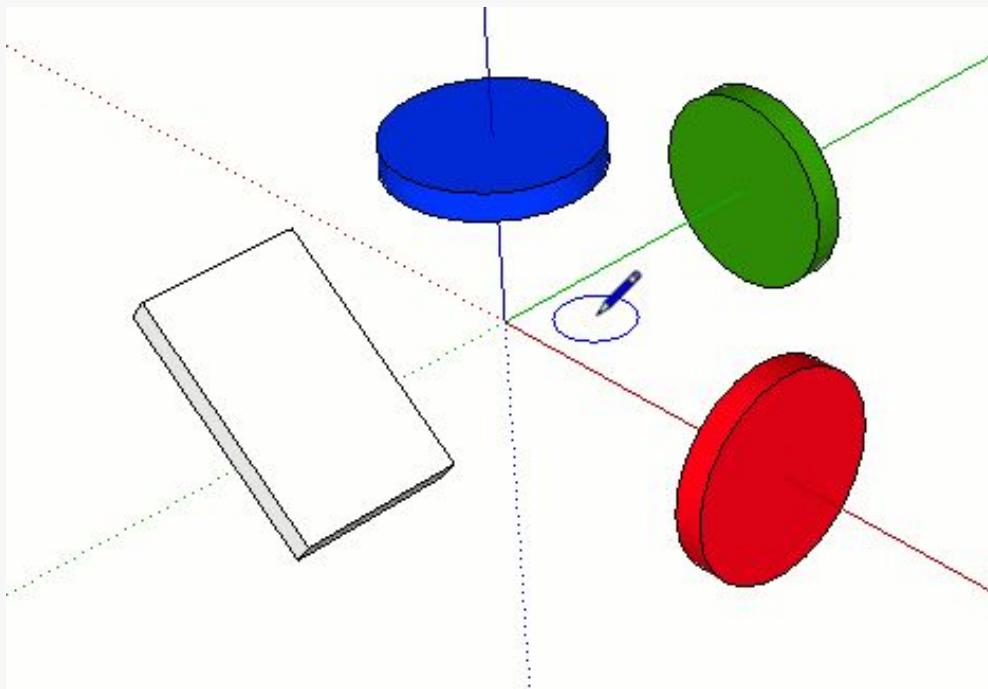


SCALE



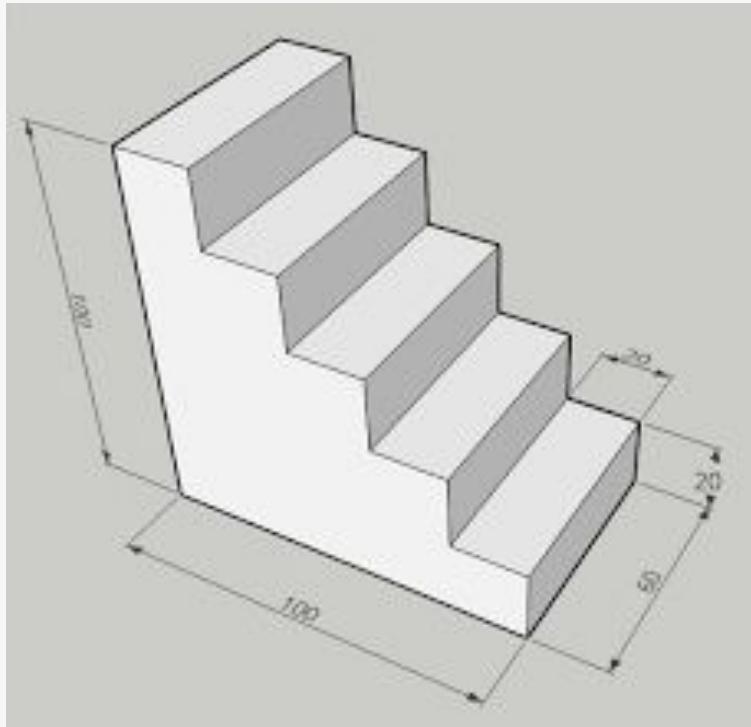
EQUIDISTANCE

2.3 Alignment

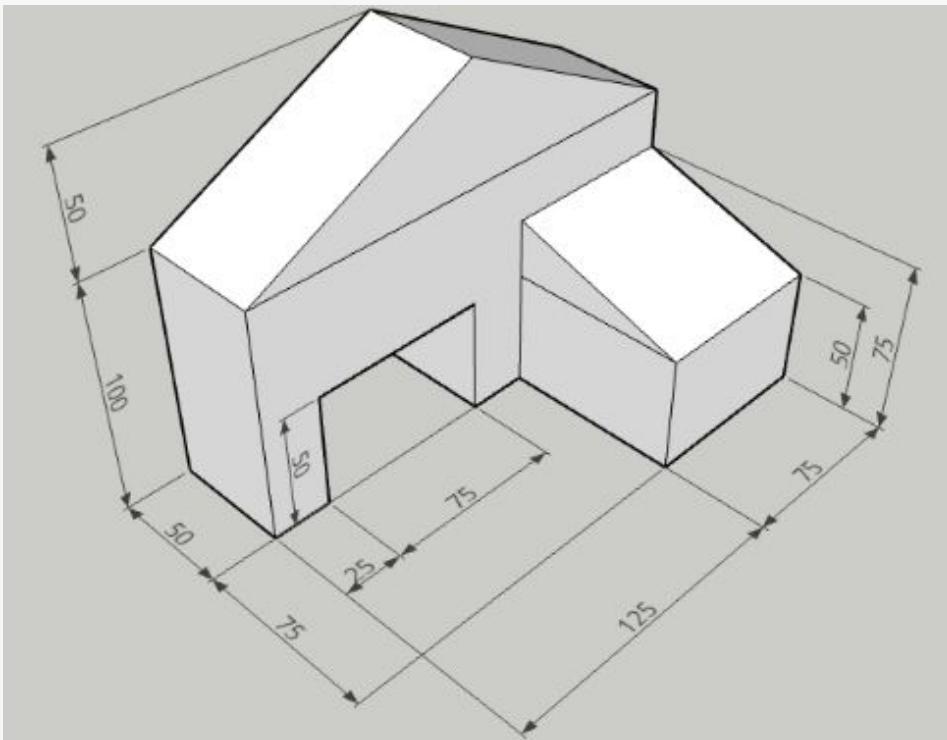


This is an animated image. If you don't see the animation, access it [here](#).

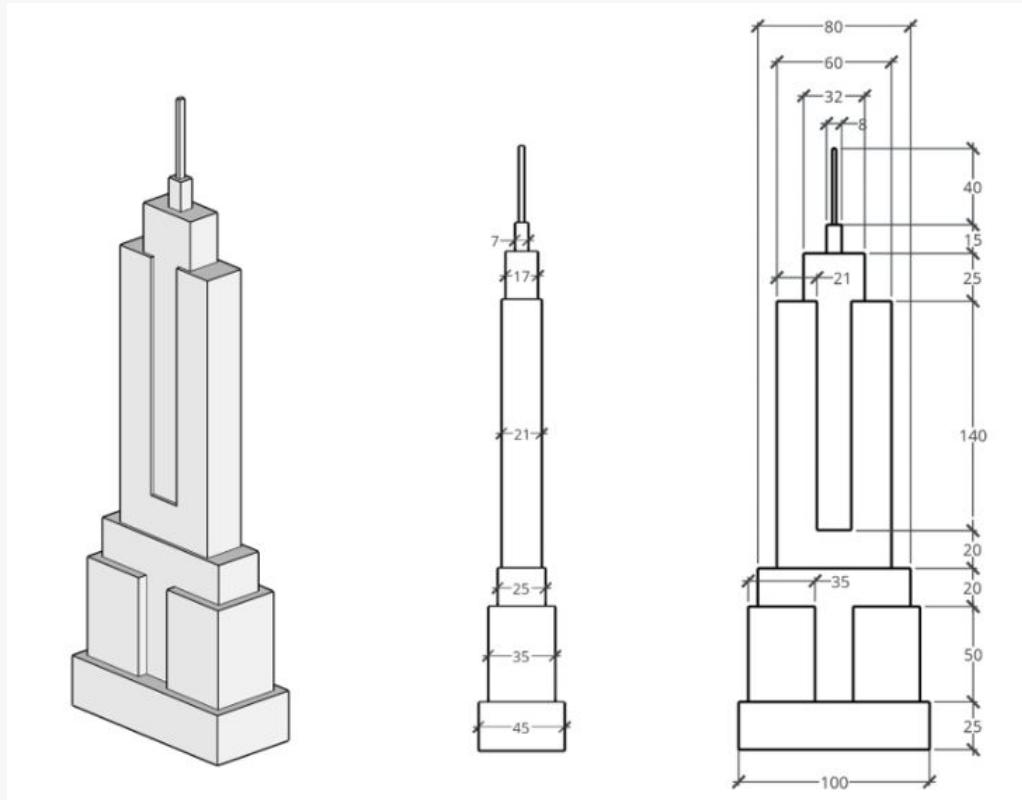
2.4 Exercise 1



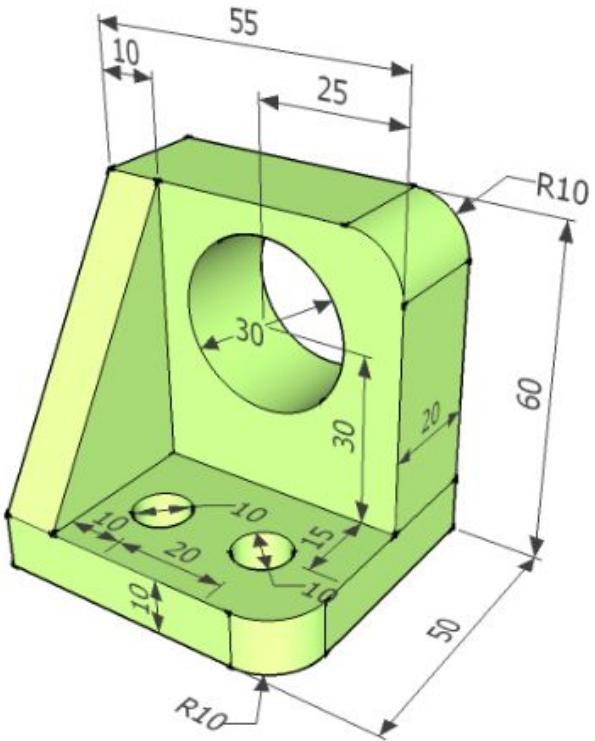
2.4 Exercise 2



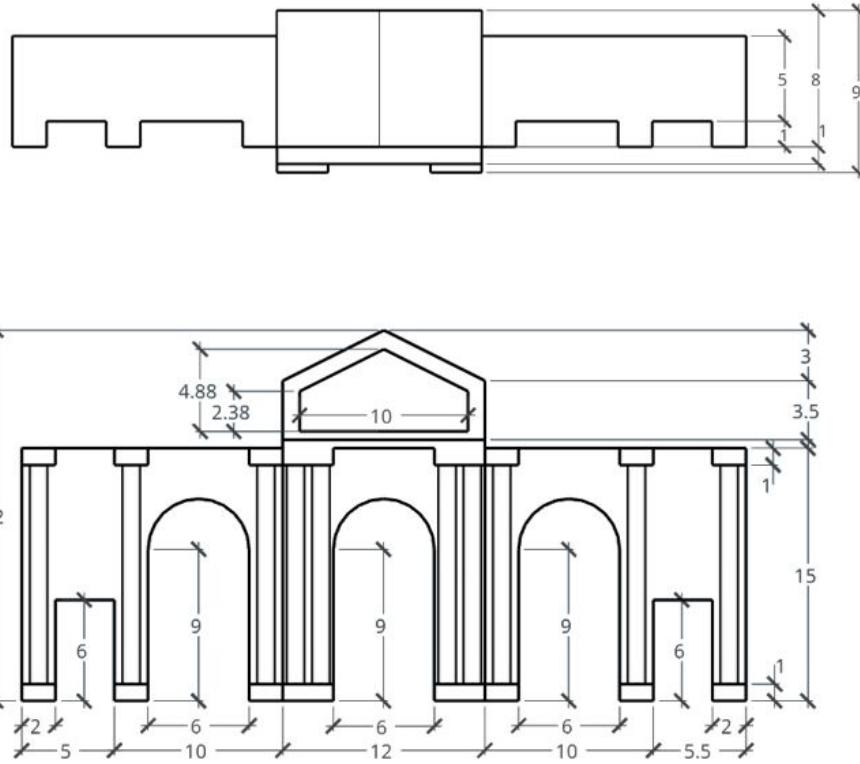
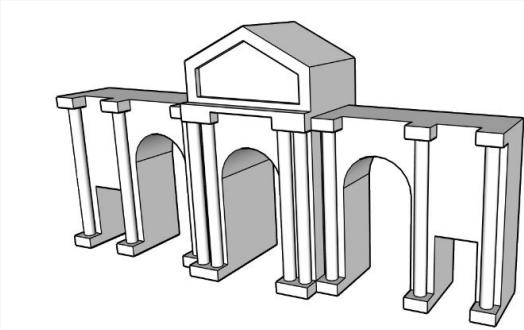
2.4 Exercise 3



2.4 Exercise 4



2.4 Exercise 5



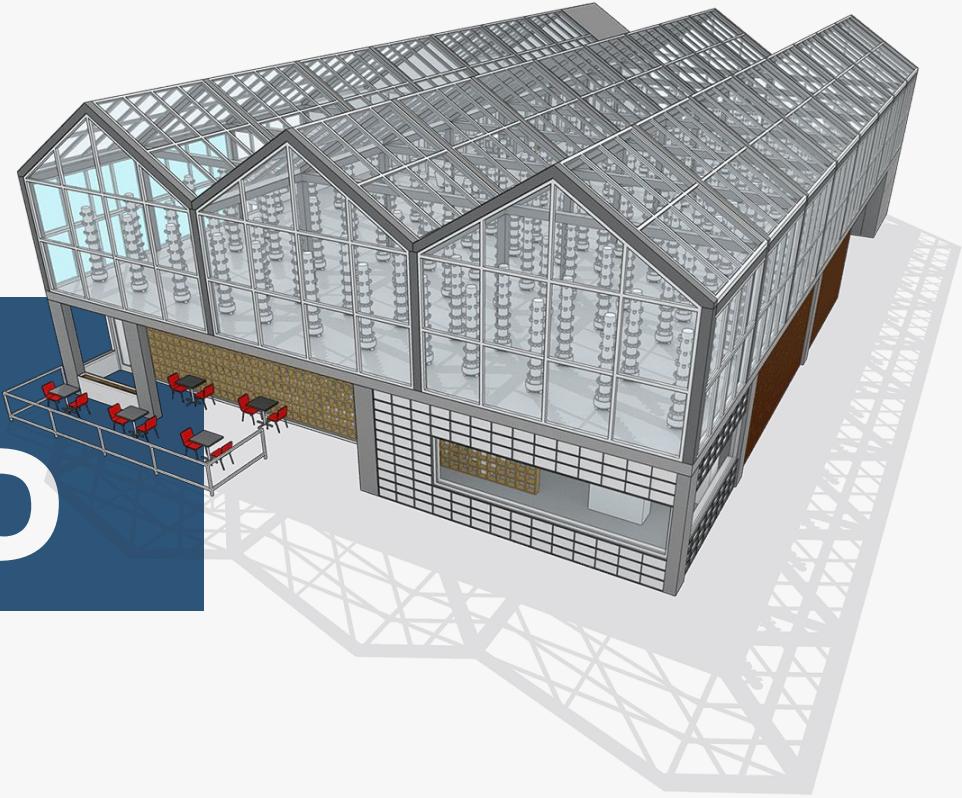
Puerta de Alcalá, Madrid. Visit it on Google Earth by clicking [here](#).

3

ADVANCED

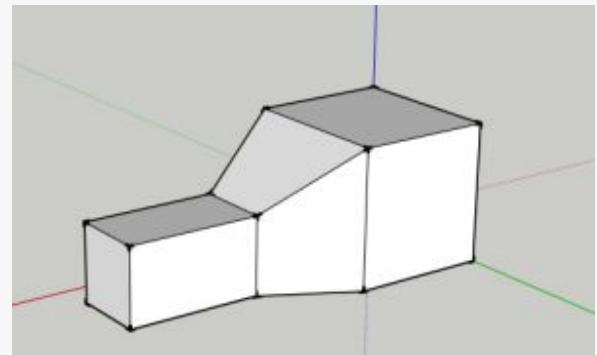
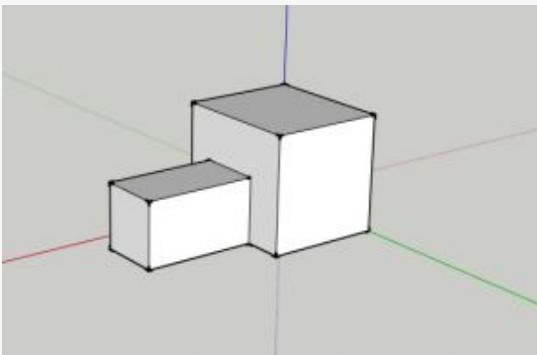
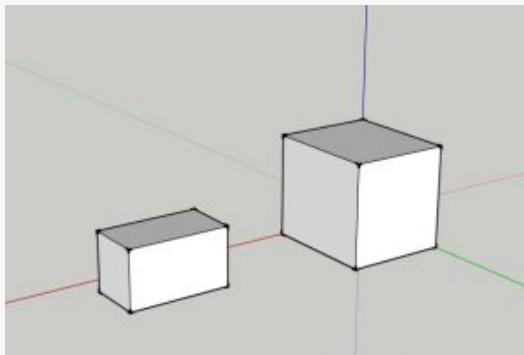
Learn the tools that will allow to take
your models one step further.

Comprehend how these new tools
allow you to do complex tasks in an
easy way.



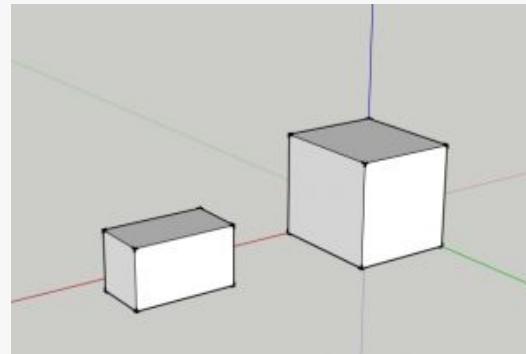
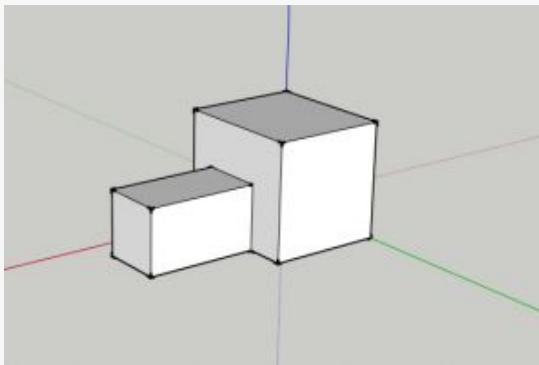
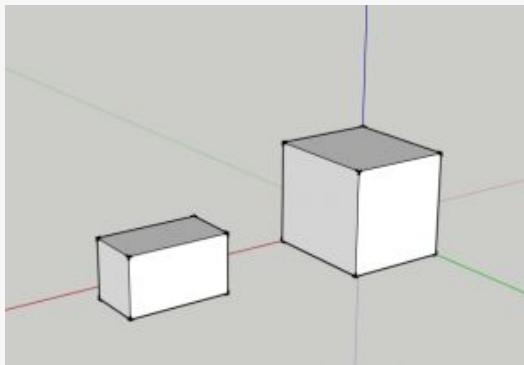
3.1 Groups

Sometimes we do not want independent objects interacting with each other.



3.1 Groups

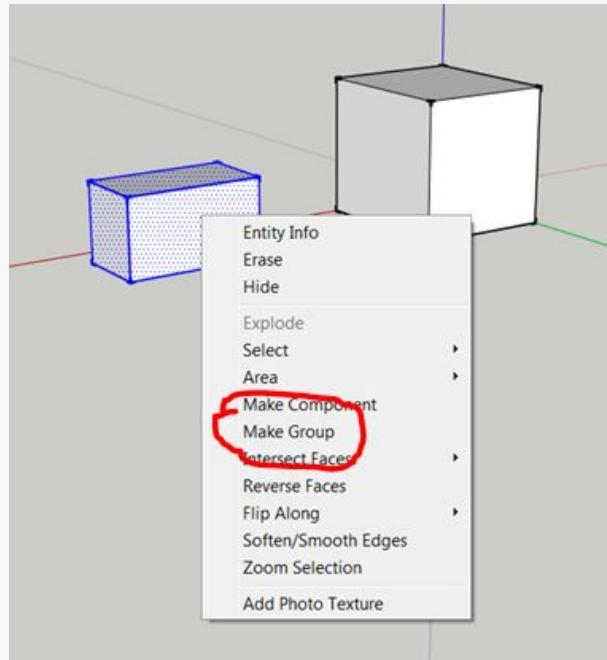
This can be solved by defining a **group** for each of the independent objects.



3.1 Groups

To **make a group**:

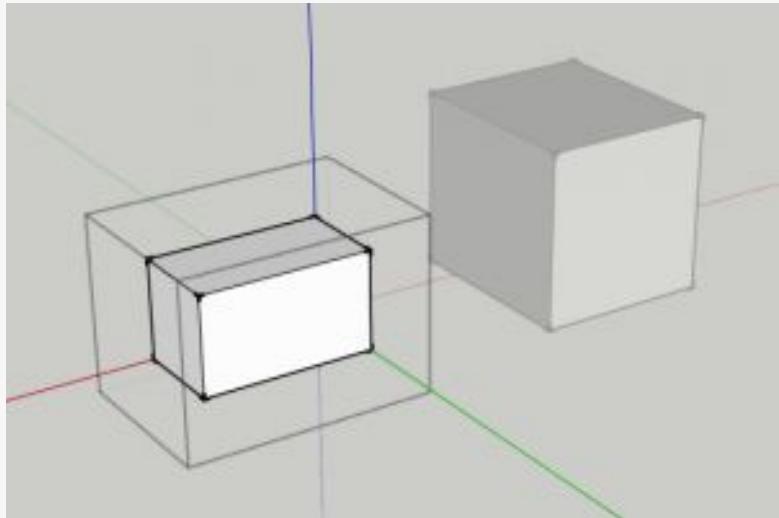
1. Select every element (edges and surfaces) that you want to include in the group
2. Right click + “Make Group”



3.1 Groups

To **edit a group**:

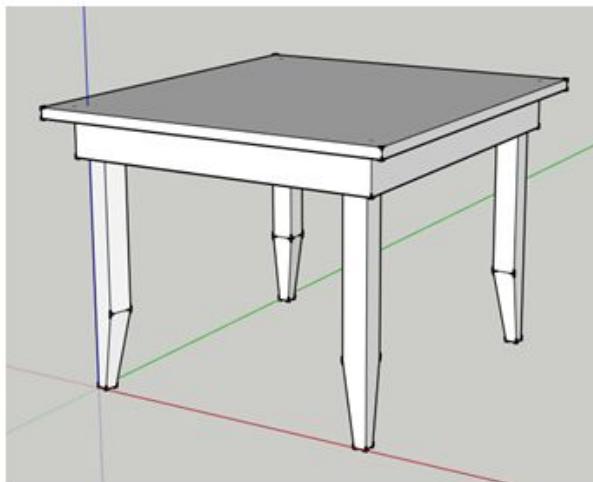
1. Double click the group
2. Every modification you make now will be kept inside the group
3. To stop editing the group, press ESC



3.2 Components

A component is just like a group. However, if you copy it several times, all the copies will be linked. **If you modify one, the changes will also apply to the rest.**

If I model all 4 table legs as copies of a single component, then all I have to do is change 1 leg and the other 4 will change as well



3.2 Components

To **make a component**:

1. Select every element (edges and surfaces) that you want to include in the group
2. Right click + “Make Component”

To **copy a component**:

1. `Ctrl+C -> Ctrl+V`

3.2 Components

To **make a component**:

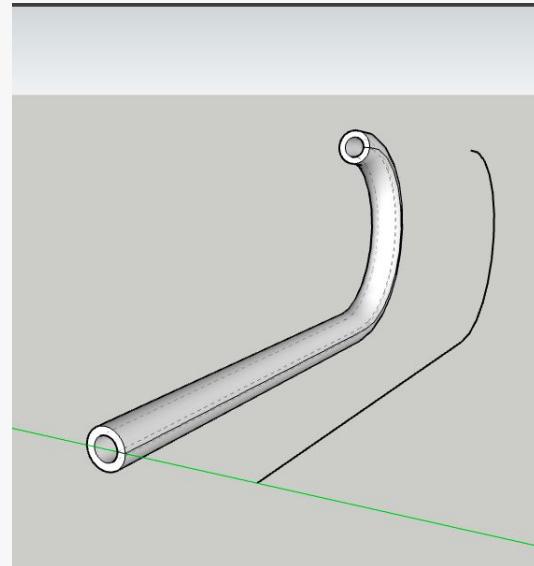
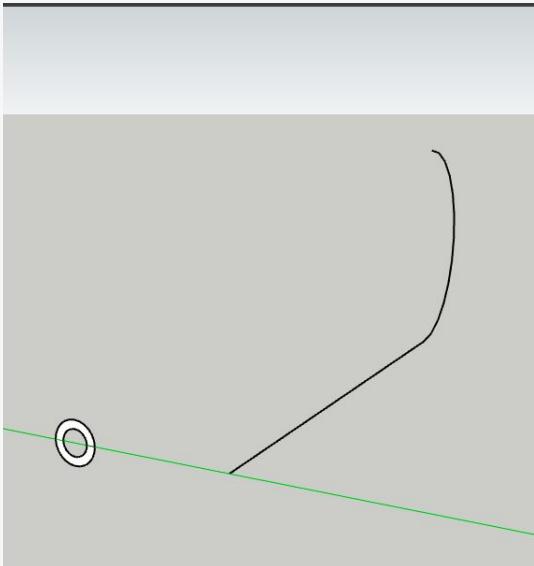
1. Select every element (edges and surfaces) that you want to include in the group
2. Right click + “Make Component”

To **copy a component**:

1. `Ctrl+C -> Ctrl+V`

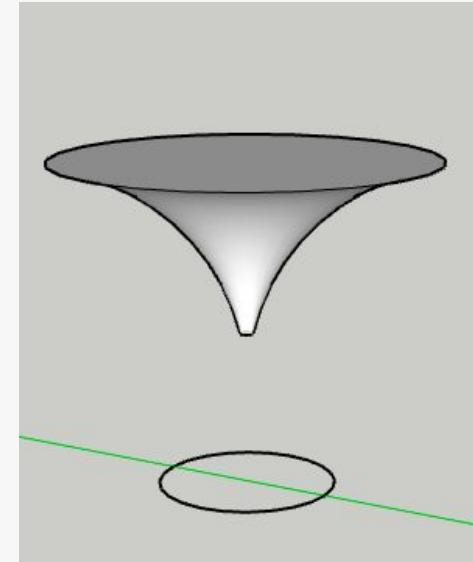
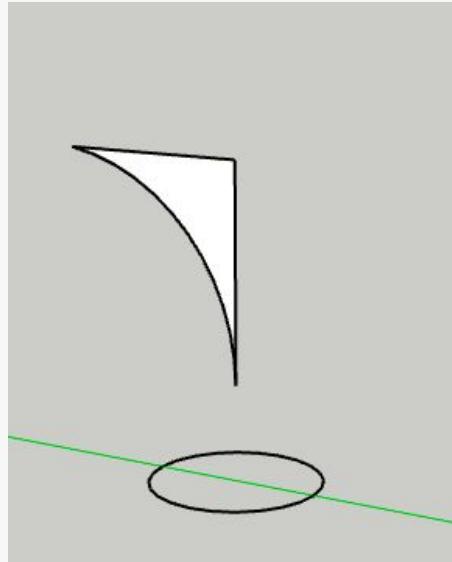
3.3 “Follow Me” tool

Given a surface and a path (several edges connected together), the “Follow Me” tool will extrude the surface along the path.



3.3 “Follow Me” tool

Possibilities are endless. Think about revolution bodies, it is just like pottery.

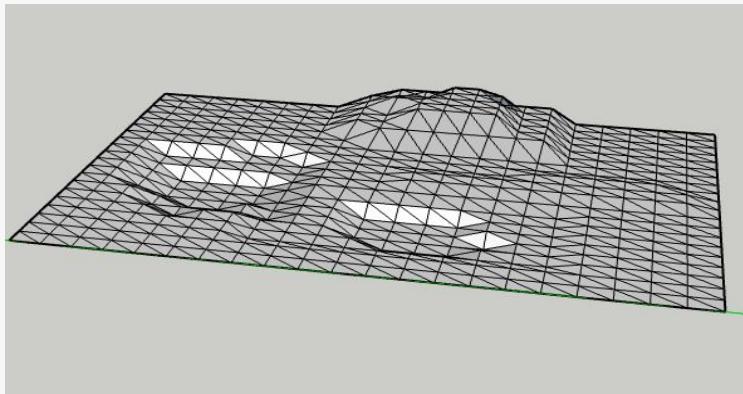
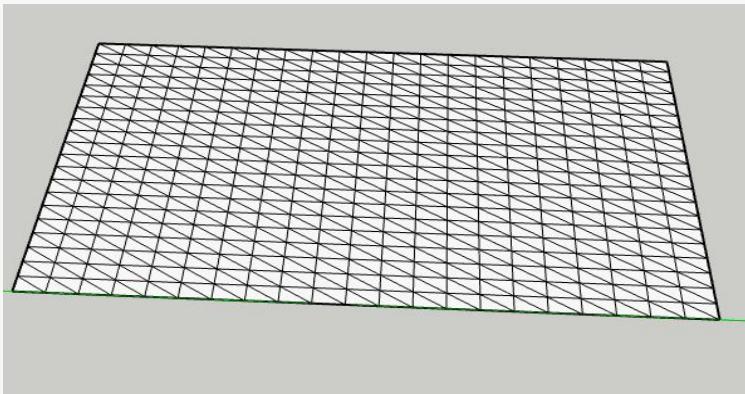


3.3 Meshes/Terrains

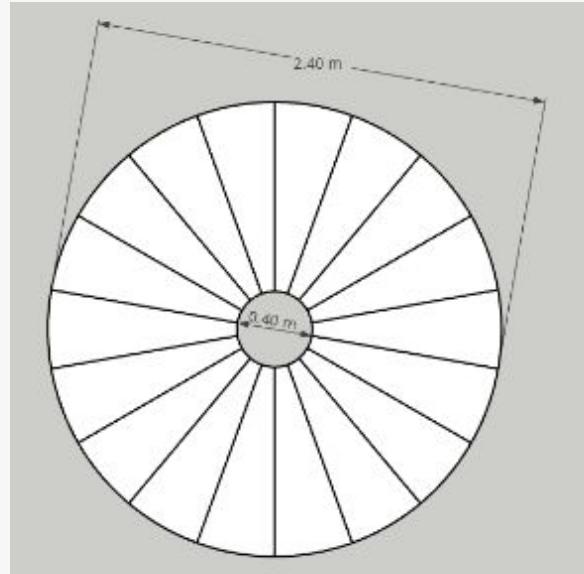
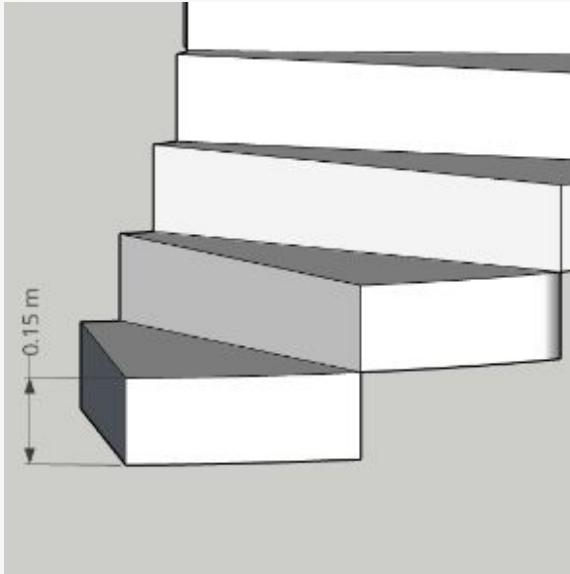
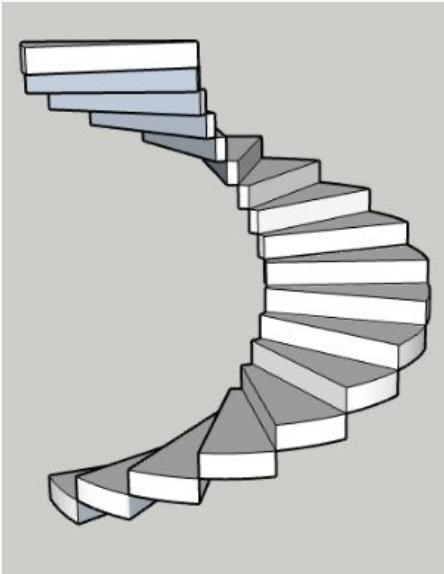
With what you know, you can build a mesh pretty easily.
You can see it as an adaptable surface, just like a terrain.

Move each intersection on the up/down axis.

You can select multiple intersections at a time



3.4 Exercise 1



3.4 Exercise 1

Staircase Tip: Make it so that all the steps are components linked together, meaning that if you change one, the others will change as well.

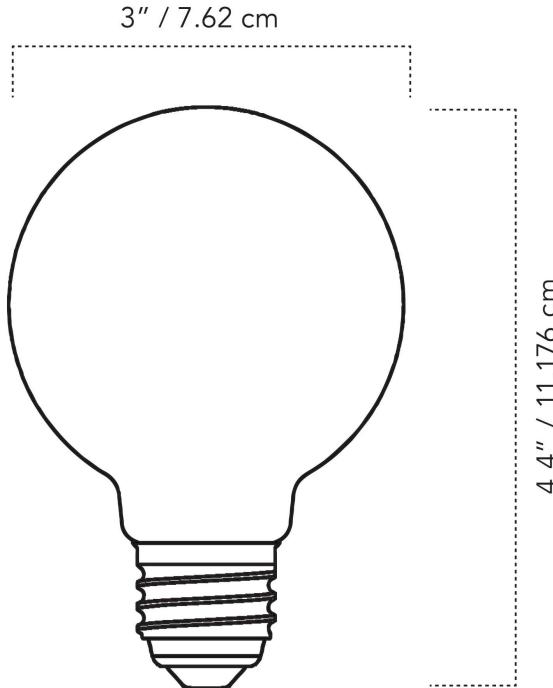
Once you have it, add a pillar at the center of the staircase.

Adding a handle to the staircase using the Follow Me tool is also a very good idea.

3.4 Exercise 2

Ask us for some tips on how to make the bulb's screw.

For the glass part of the bulb, think about it being a revolution body (use Follow Me to follow a circle).

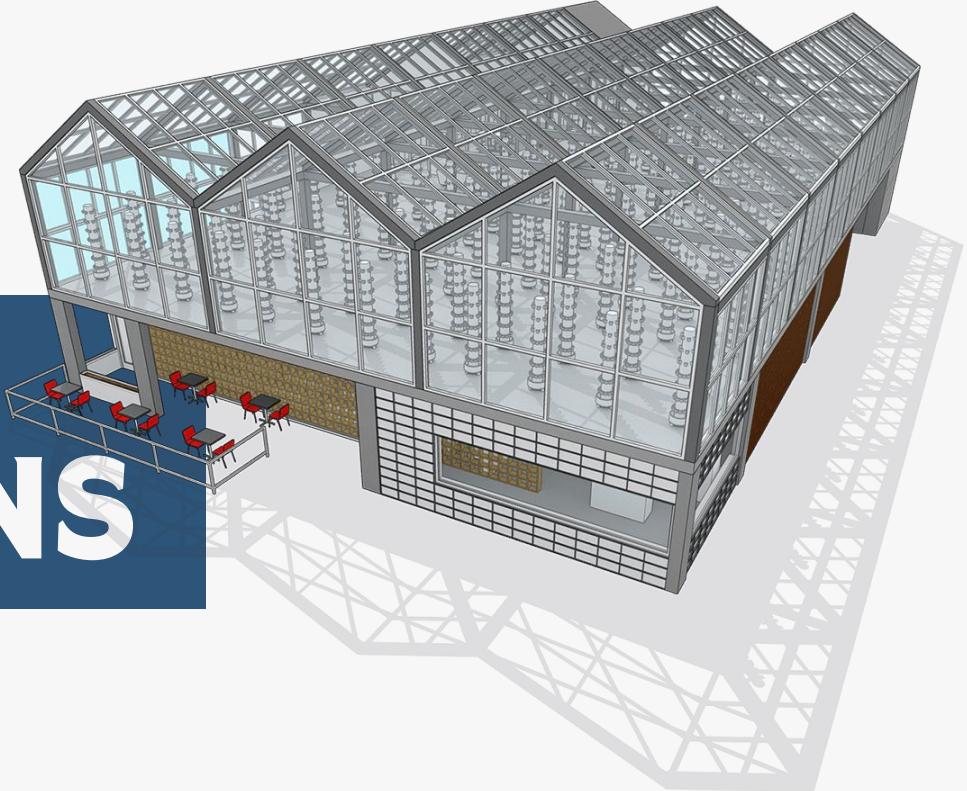


4

EXTENSIONS

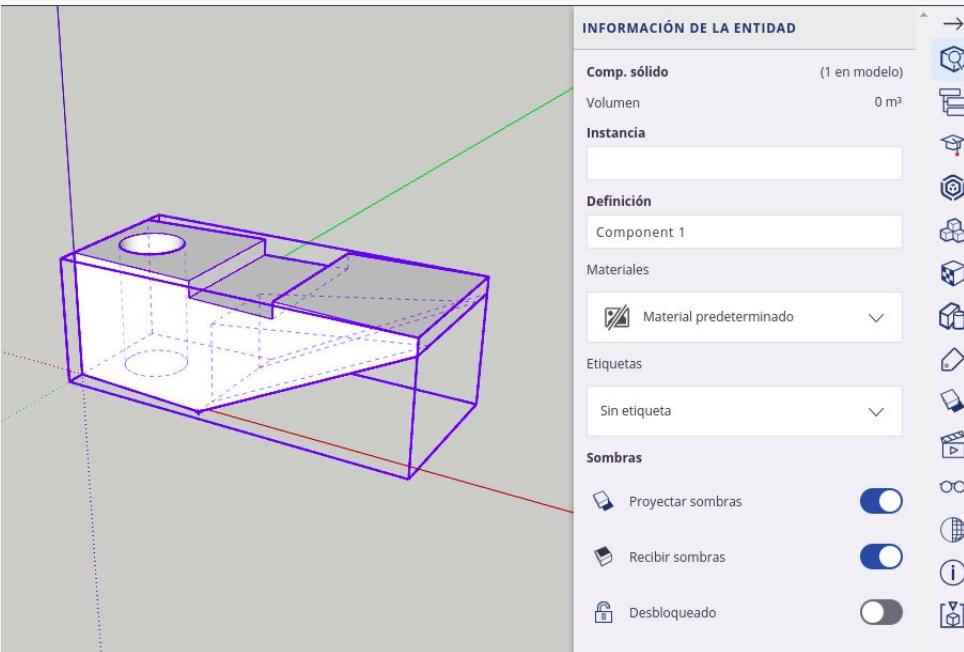
SketchUp comes with a variety of extensions that will make your life easier.

We'll take a look at a couple of them.



4.1 Entity Information

It is the first icon on the right-hand side of the screen.
It displays information about whatever entity we have selected.



ICON

4.2 The 3D Warehouse

Use any model built by the community.
For example, you can search for a “Table with chairs” model and import it to your model.

The screenshot shows the 3D Warehouse search interface. The search bar at the top contains the query "Table with chairs". Below the search bar, there are navigation icons and a user profile icon. The main search results area displays three items:

- Courtyard Table and 4 Chairs with arms**: An image of a round table surrounded by four chairs. Details: 1.4 MB, 16,810 downloads.
- 8 person table with chairs - B**: An image of a long rectangular table with eight chairs. Details: 225 KB, 1,295 downloads.
- Meeting Table Scenario - 1.2m diameter t...**: An image of a large circular table. Details: 1.7 MB, 25,946 downloads.



4.3 And many more...

Explore the rest of the extensions on your own.

SketchUp is easy to grasp as long as you are driven by curiosity.

Do you want to 3D-print your model? Check out the Solid Inspector extension.

Do you want to make a small video showcasing your model?
Check out the Scenes extension.

Etc.



**THAT'S ALL
FOLKS**

Thank you for your interest.

CONTENTS OF THIS TEMPLATE

You can delete this slide when you're done editing the presentation

<u>Fonts</u>	To view this template correctly in PowerPoint, download and install the fonts we used
<u>Used and alternative resources</u>	An assortment of graphic resources that are suitable for use in this presentation
<u>Thanks slide</u>	You must keep it so that proper credits for our design are given
<u>Colors</u>	All the colors used in this presentation
<u>Icons and infographic resources</u>	These can be used in the template, and their size and color can be edited
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of the section here

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You can describe the topic
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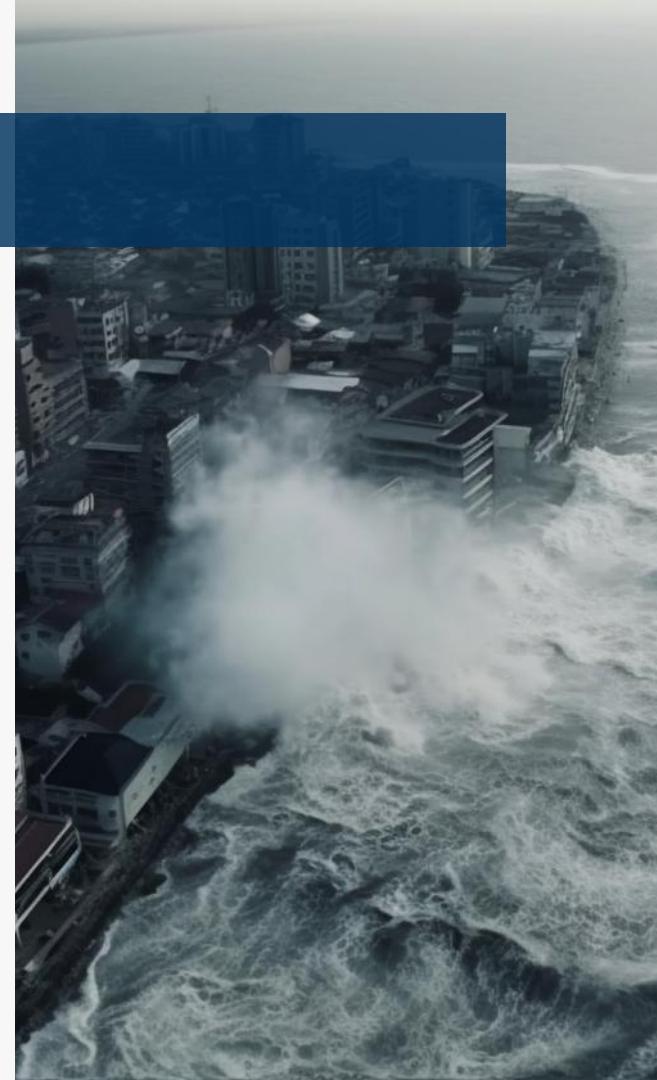
SECTION

You can describe the topic
of the section here

04

SECTION

You can describe the topic
of the section here





WHOA!

This can be the part of the presentation where you introduce yourself, write your email...

OI

NAME OF THE SECTION

You can enter a subtitle here if you need it



DO YOU NEED A LONGER TEXT?

Mercury is the closest planet to the Sun and the smallest one in the entire Solar System. This planet's name has nothing to do with the liquid metal, since Mercury was named after the Roman messenger god. Despite being closer to the Sun than Venus, its temperatures aren't as terribly hot

Speaking of craters, many of them were named after artists or authors who made significant contributions to their respective fields. Mercury takes a little more than 58 days to complete its rotation, so try to imagine how long days must be there! Since the temperatures are so extreme



THE SLIDE TITLE GOES HERE!

Do you know what helps you make your point clear?
Lists like this one:

- They're simple
- You can organize your ideas clearly
- You'll never forget to buy milk!

And the most important thing: the audience won't miss the point of your presentation



INTRODUCTION



You can give a brief description of the topic you want to talk about here. For example, if you want to talk about Mercury, you can say that it's the smallest planet in the entire Solar System

DIVIDE THE CONTENT



NEPTUNE

Neptune is the fourth-largest planet in the Solar System



SATURN

Saturn is the second-largest planet in the Solar System



HERE ARE THREE IMPORTANT IDEAS



MERCURY

Mercury is the closest planet to the Sun and the smallest of them all



VENUS

Venus has a beautiful name and is the second planet from the Sun



MARS

Despite being red, Mars is actually a cold place. It's full of iron oxide dust



DIVIDE THE CONTENT IN FOUR IDEAS



VENUS

Venus has a beautiful name and is the second planet from the Sun



MARS

Despite being red, Mars is actually a cold place



EARTH

Earth is the third planet from the Sun and has life



JUPITER

Jupiter is a gas giant and has around eighty moons

YOU CAN USE FIVE COLUMNS TOO!



IDEA #1

Mercury is the smallest planet of them all



IDEA #2

Venus has extremely high temperatures



IDEA #3

Earth is the only planet known to harbor life



IDEA #4

Despite being red, Mars is actually a cold place



IDEA #5

Jupiter is the biggest planet in the Solar System

REVIEWING CONCEPTS IS GOOD



MERCURY

Mercury is the smallest planet of them all



VENUS

Venus is the second planet from the Sun



EARTH

Earth is the only planet known to harbor life



MARS

Despite being red, Mars is actually a cold place



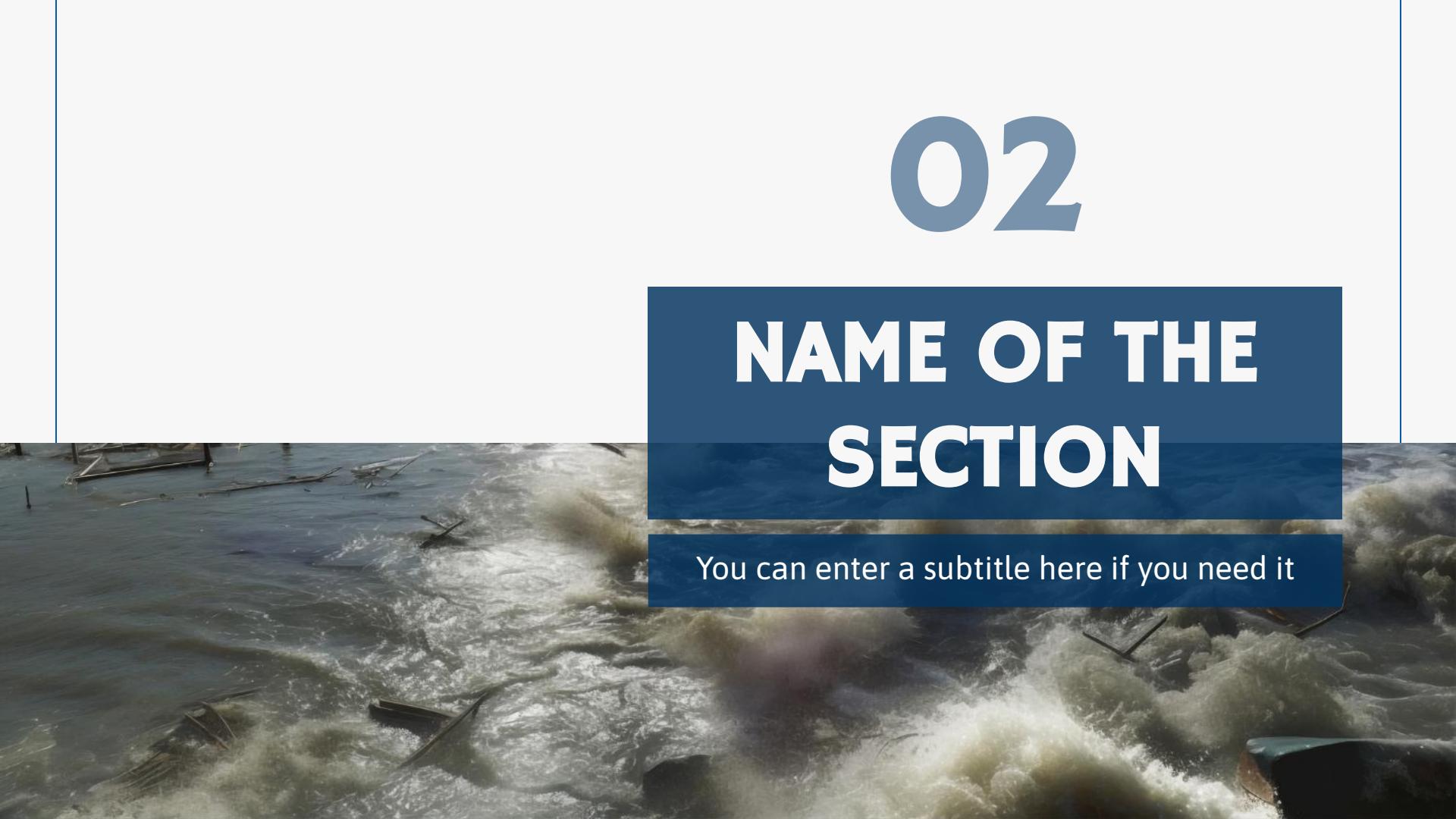
JUPITER

Jupiter is the biggest planet in the Solar System



SATURN

Saturn was named after a Roman god

The background image shows a scene of severe flooding or a river in full spate. The water is dark and choppy, with white foam from waves crashing. Debris, including what looks like a small boat and other unidentifiable items, is scattered across the surface. The overall atmosphere is one of chaos and destruction.

02

NAME OF THE SECTION

You can enter a subtitle here if you need it



AWESOME WORDS

“This is a quote, words full of wisdom that someone important said and can make the reader get inspired.”

—SOMEONE FAMOUS



An aerial photograph of a coastal city, likely Durban, South Africa, during a severe storm. The city is densely packed with buildings of various heights, mostly in shades of grey and white. A massive, dark green wave is crashing onto the shore, sending up a large plume of white spray that covers the lower half of the image. To the right, the ocean is a dark, choppy grey-blue. In the far distance, more land and hills are visible under a hazy sky.

**A PICTURE IS WORTH A
THOUSAND WORDS**

A PICTURE REINFORCES THE CONCEPT

Images reveal large amounts of data, so remember: use an image instead of a long text. Your audience will appreciate it





4,498,300

Big numbers catch your audience's attention



333,000

The Sun's mass compared to Earth's

386,000 KM

Distance between Earth and the Moon

9H 55M 23S

Jupiter's rotation period

PERCENTAGES MIGHT HELP!

16%



EARTH

The earth is the third planet from the Sun and has life

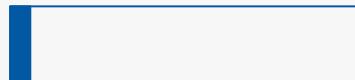
21%



MARS

Despite being red, Mars is actually a cold place

04%



JUPITER

Jupiter is a gas giant and has around eighty moons

51%



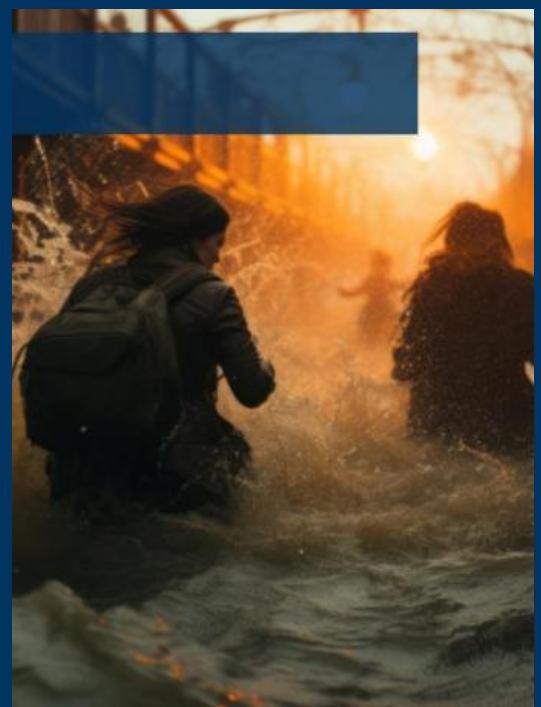
SATURN

Saturn is the second-largest planet in the Solar System

DESKTOP MOCKUP

You can replace the image on the screen with your own work. Just right-click on it and select “Replace image”





TABLET MOCKUP

You can replace the image on the screen with your own work. Just right-click on it and select “Replace image”

PHONE MOCKUP

You can replace the image on the screen with your own work. Just right-click on it and select “Replace image”



03

NAME OF THE SECTION

You can enter a subtitle here if you need it

THIS IS A MAP



INFLUENCE A

Ceres is located in the main asteroid belt



INFLUENCE B

The Moon is Earth's only natural satellite



INFLUENCE C

Neptune is very far away from us



A TIMELINE ALWAYS WORKS WELL

2XXX

MARS

Despite being red,
Mars is very cold

2XXX

SATURN

Saturn was named
after a Roman god

2XXX

JUPITER

Jupiter is a huge
gas giant

2XXX

NEPTUNE

Neptune is far
away from us

MAKE YOUR IDEA UNDERSTANDABLE

MERCURY

Mercury is the closest planet to the Sun



MARS

Despite being red, Mars is very cold

VENUS

Venus is the second planet from the Sun



EARTH

Earth is the third planet from the Sun



JUPITER

Jupiter doesn't have a solid surface

SATURN

Saturn is a gas giant and has several rings

SIGNIFICANT TYPHOONS IN HISTORY

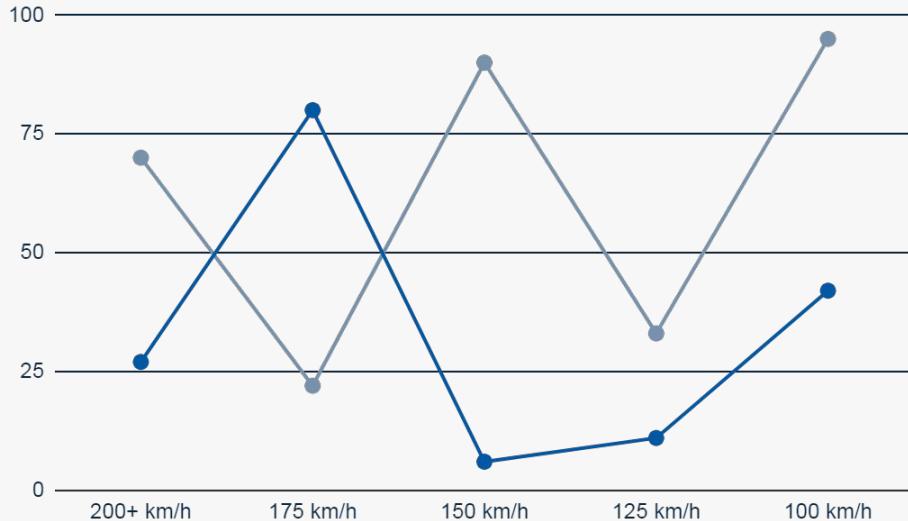
NAME	YEAR	AREA	HISTORICAL NOTES
Typhoon Haiyan	2013	Philippines	Mercury is a small planet
Typhoon Katrina	2005	New Orleans, U.S.	Venus is very hot
Typhoon Bopha	2012	Philippines	Earth has life
Typhoon Mireille	1991	Japan	Mars is very cold

WHAT TO DO WHEN IT HAPPENS

	ACTION	TIP	DURING	AFTER
PREPAREDNESS	Emergency kit	Non-perishable food and water	Stay informed with weather	Check for injuries
	Monitor official alerts	Reinforce doors and windows	Stay inside	Structural damage
	Pack essentials	Know location shelters	Avoid flooded roads	Stay informed
	Contact insurance	Document damage	Exercise caution	Share experiences



YOU CAN USE THIS GRAPH



LOCATION A

Mercury is the closest planet to the Sun

LOCATION B

Venus has extremely high temperatures

Follow the link in the graph to modify its data and then paste the new one here. [For more info, click here](#)

ANOTHER GRAPH MIGHT HELP YOU!

MONTH A

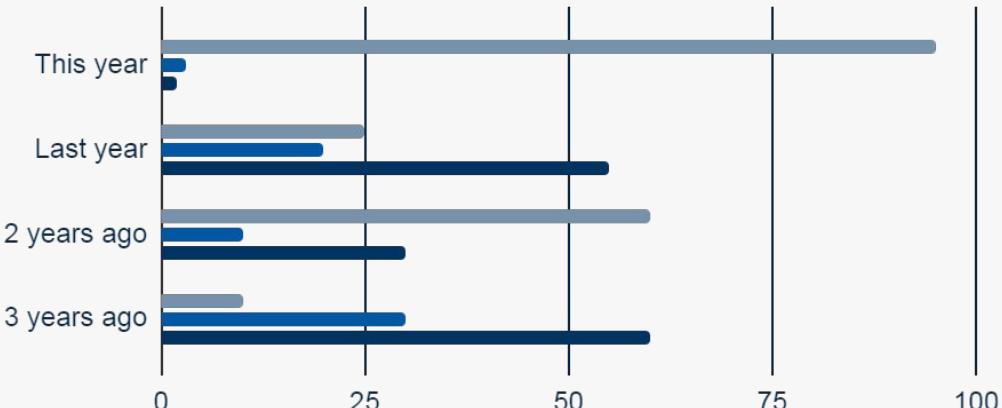
Mercury is the closest planet to the Sun

MONTH B

Venus is the second planet from the Sun

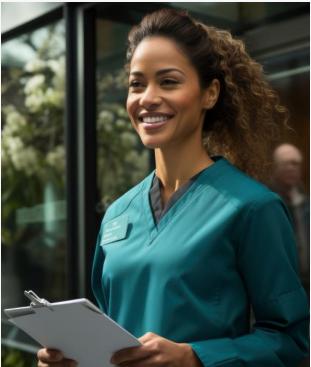
MONTH C

Earth is the only planet that harbors life



Follow the link in the graph to modify its data and then paste the new one here. [For more info, click here](#)

OUR TEAM



**SARAH
YANG-LEE**

You can speak a bit
about this person



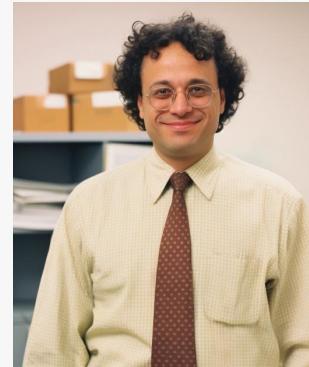
**BRIAN
MCDERMOTT**

You can speak a bit
about this person



**JOHNSON
KILLUA**

You can speak a bit
about this person



**ALKALÁ
MCCLEIN**

You can speak a bit
about this person

YOU CAN WRITE CONCLUSIONS!

CONCLUSION 1:

Write a conclusion here about typhoon emergency management and how to react

CONCLUSION 2:

Write a conclusion here about typhoon emergency management and how to react

CONCLUSION 3:

Write a conclusion here about typhoon emergency management and how to react



THANKS!

Does anyone have any questions?

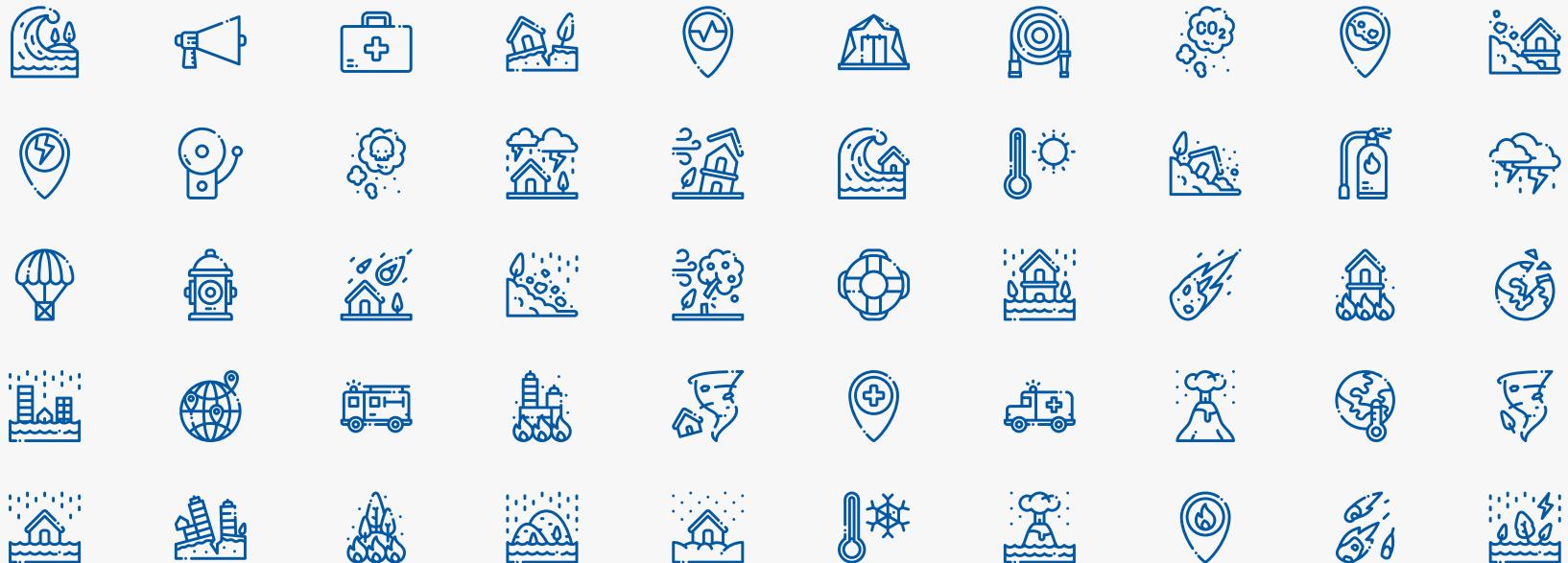
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- [Landscape of extreme storm damages](#)
- [Natural disaster concept with flood I](#)
- [Natural disaster concept with flood II](#)
- [Landscape of extreme earthquake](#)
- [View of apocalyptic dark stormy clouds I](#)
- [View of apocalyptic dark stormy clouds II](#)
- [View of apocalyptic dark stormy clouds III](#)
- [Photorealistic style clouds and storm](#)
- [View of apocalyptic dark stormy clouds II](#)

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- [Earth seen from space](#)
- [Natural disaster concept with flood I](#)
- [Natural disaster concept with flood II](#)
- [Extreme tornado near houses](#)
- [Earth seen from space](#)
- [Landscape of extreme typhoon damage I](#)

- [Natural disaster concept with flood III](#)
- [Landscape of extreme typhoon damages I](#)
- [Landscape of extreme typhoon damages II](#)
- [Landscape of extreme typhoon damage II](#)
- [Natural disaster concept with flood IV](#)

Icons:

- [Icon Pack: Natural Disaster | Lineal](#)

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Pana



Amico



Bro



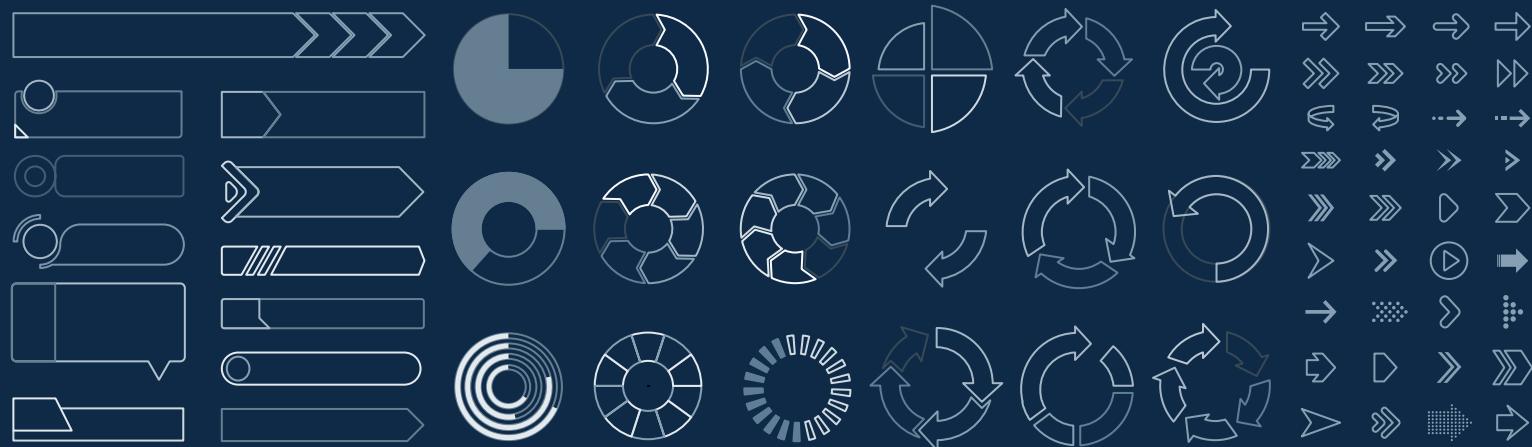
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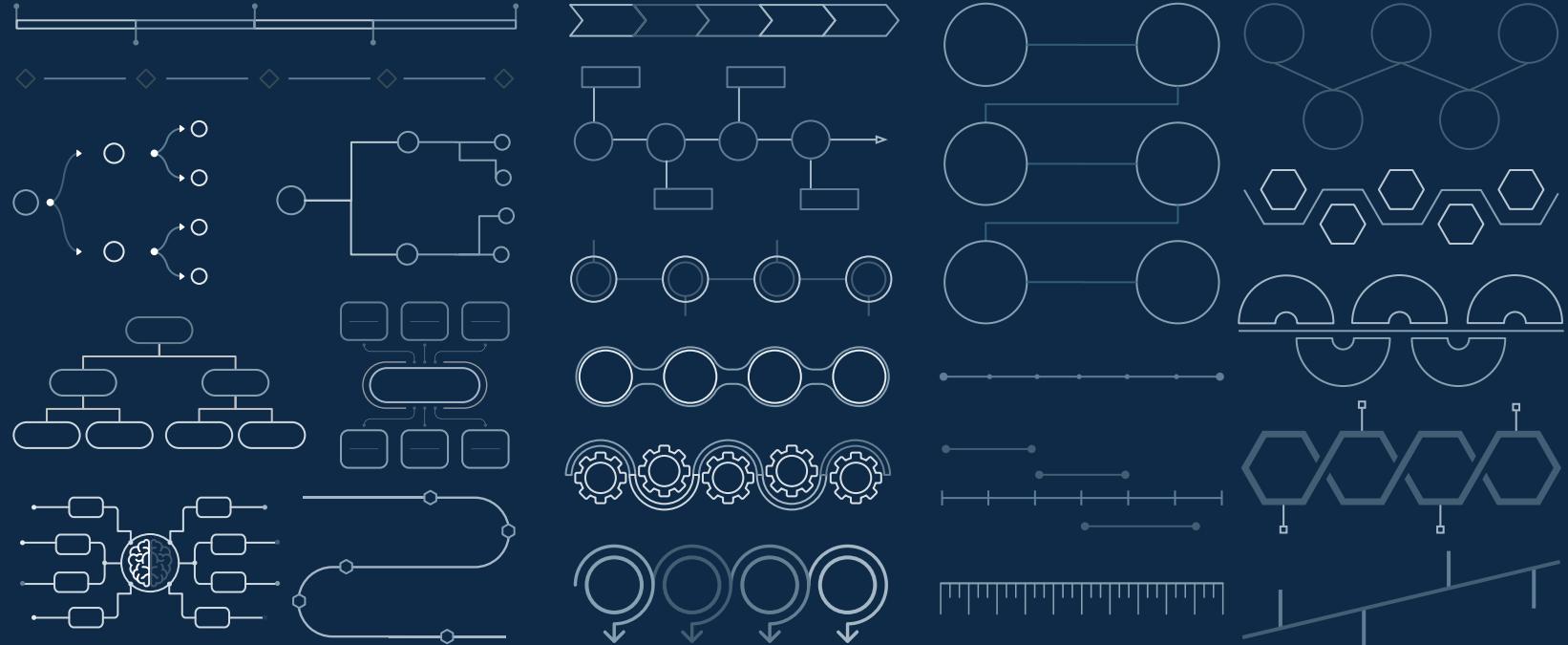
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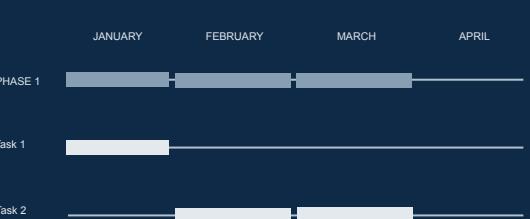
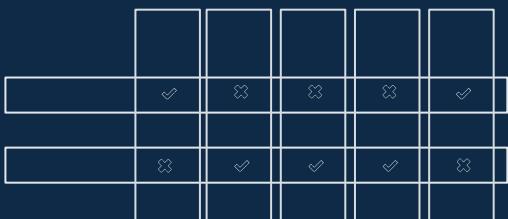
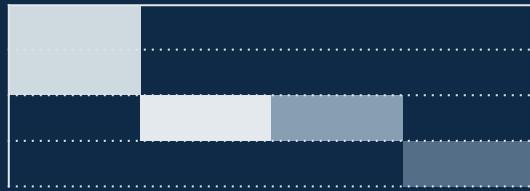
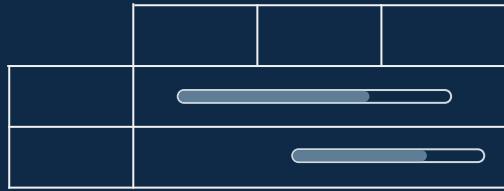
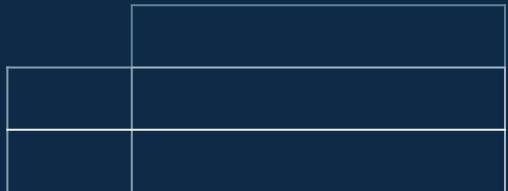
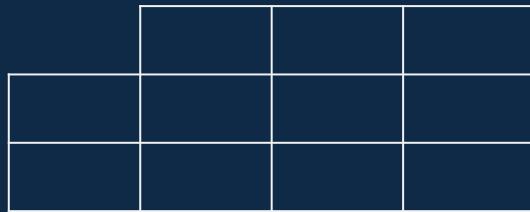
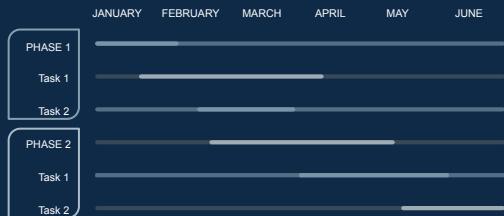
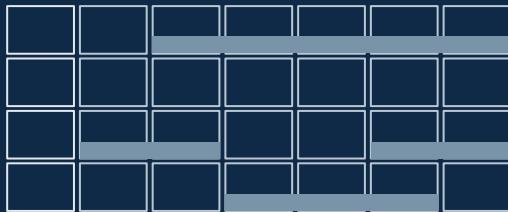
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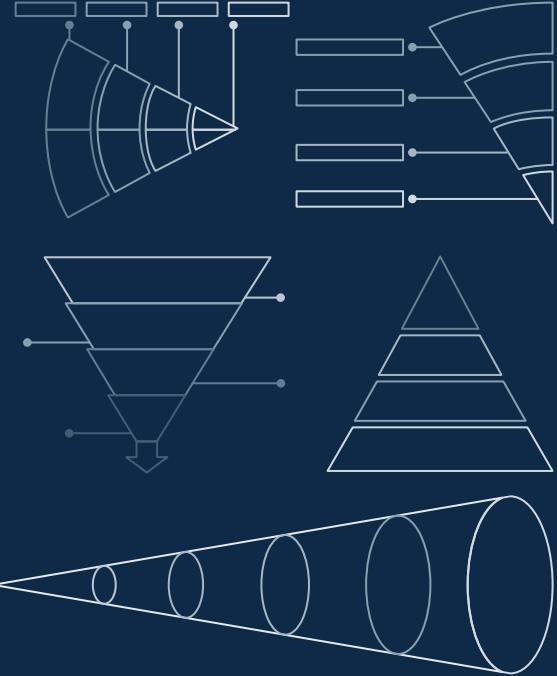
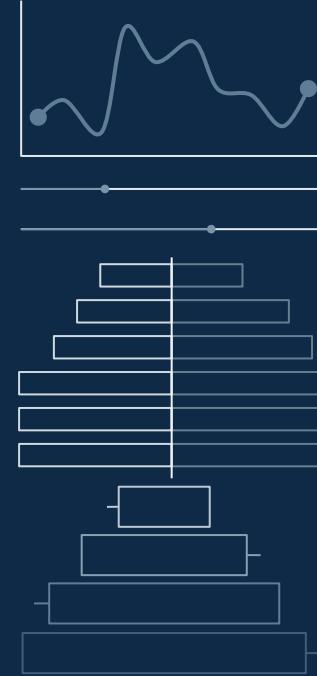
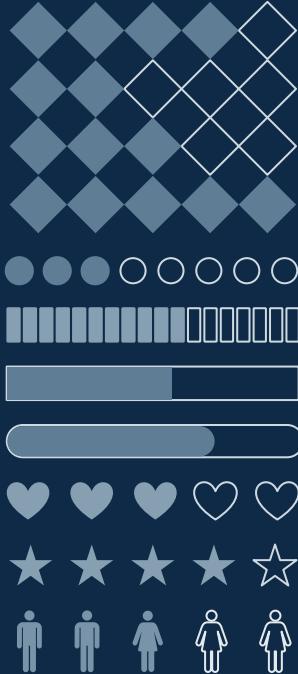
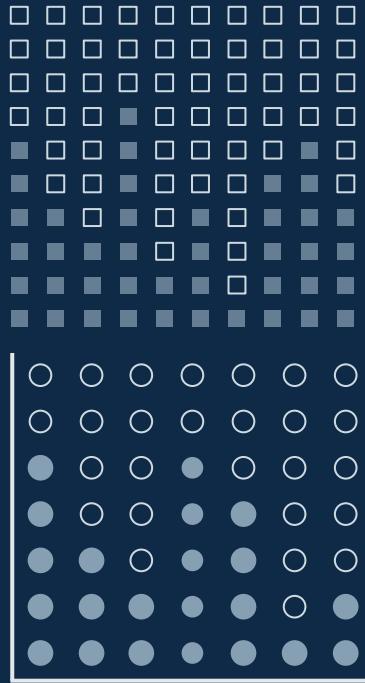












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