

You can print out the "Create your Playground" cheat sheet to help you prepare the learning space

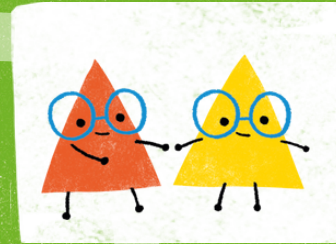
Create YOUR *Playground*

inspired BY Creative Learning

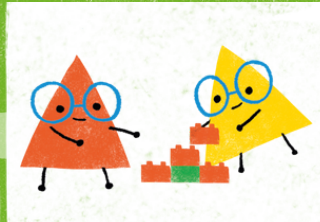
Setting



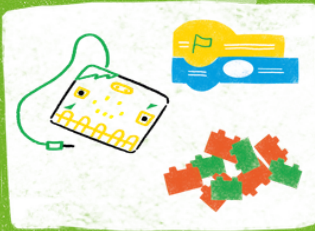
Peers



Play & Passion



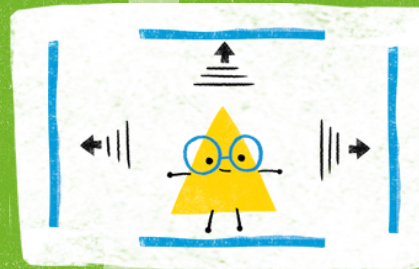
Project



Spiral



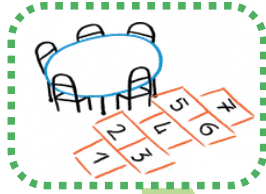
Principles



Create YOUR *Playground*

in FIVE Steps

1



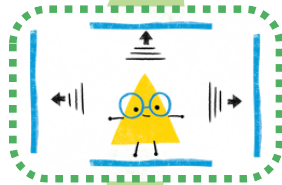
Organize a space where desks can be arranged in **one or more clusters** to promote collaboration among participants. But don't limit yourself to desks! Make use of **other areas** as well, such as the floor, the garden, a relax room, etc.

2



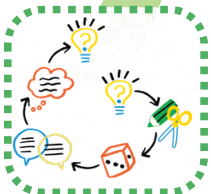
Provide participants with various **devices** (PCs, tablets, etc.), **unplugged materials** (markers, paper, scissors, LEDs, batteries, clamps, recycled materials, fabrics...), available kits, and some **simple pre-assembled projects** for free experimentation.

3



To create a positive experience even for beginner participants, offer *simple* projects that everyone can freely engage with (**low floor**). However, also select tools suitable for more experienced individuals who can experiment with *increasingly complex* projects (**high ceiling**). Furthermore, to *embrace* and *include* everyone's passions and inclinations, don't limit the types of tools and kits (**wide walls**).

4



Let the participants be inspired by the materials (**imagine**). You can introduce a theme for the day ("Earth Day," etc.) to facilitate project creation (**create**), eliminating the fear of a blank page. By collaborating in groups, it will be even easier to play with their own project (**play**), share ideas and processes, and finally reflect together (**share & reflect**) to restart the creative process.

5



Remember: a **facilitator** is, first and foremost, a participant! You don't have to know how all the tools work, but you can learn alongside your participants. A problem to solve, a challenge to face, or a project to create makes learning more effective. It's okay to try, make **mistakes**, and try again :)



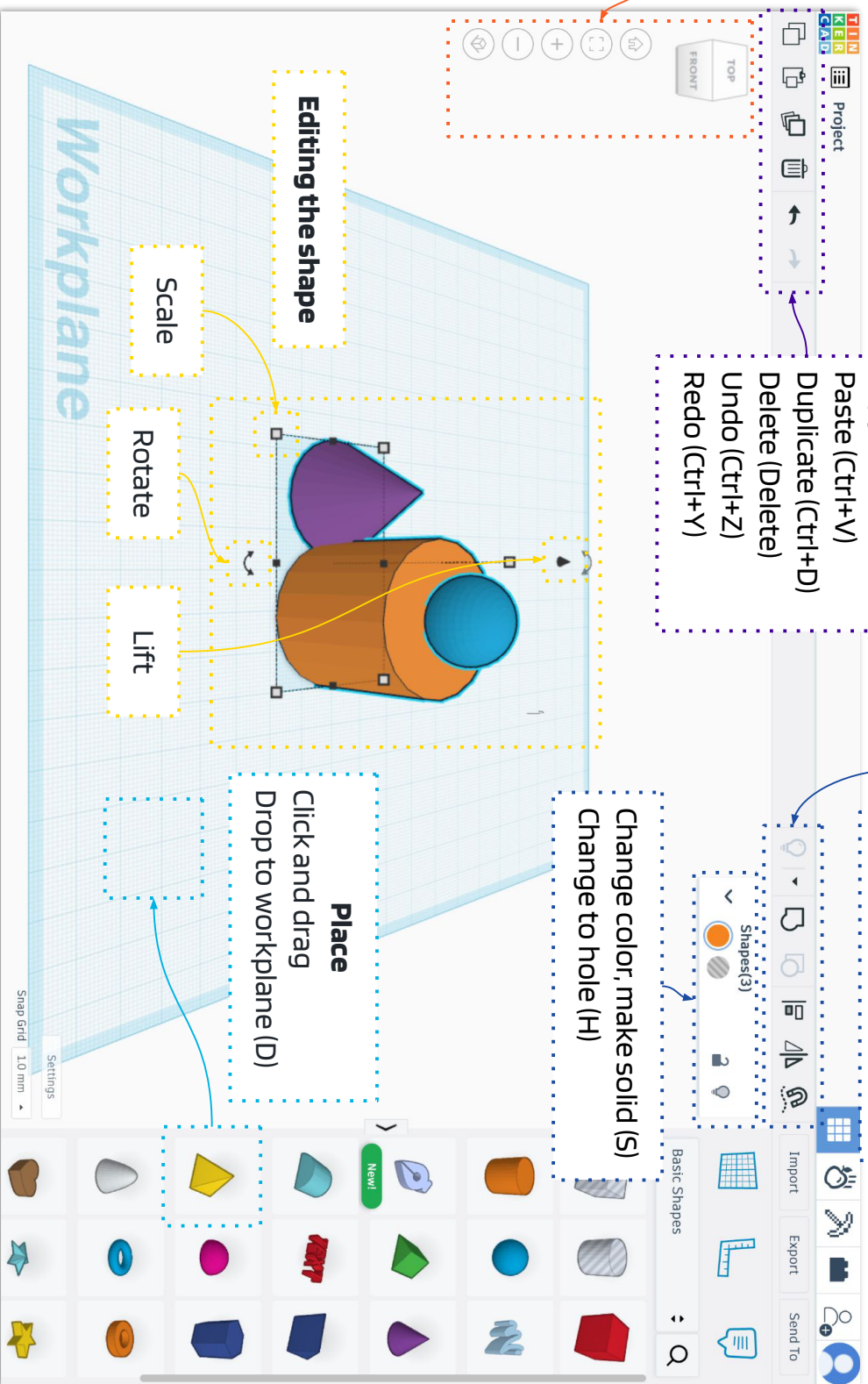
The **Playground** is an **inclusive peer-learning** space where everyone can **freely** experiment with new tools and teaching methods, using technology as a "*building material*", and everyone can **learn through play** in the spirit of *Creative Learning*.

You can print out the "Tinkercad Quick Start Guide" cheat sheet to help you move the first steps in Tinkercad



QuickStart Guide

Tinkercad 3D



Viewing 3D space

- Orbit
- Home view
- Fit all in view (F)
- Zoom in (+)
- Zoom out (-)
- Flat/Perspective view

Mouse shortcuts

- Orbit
- Zoom in/out
- Pan
- Move object

Commands

- Copy (Ctrl+C)
- Paste (Ctrl+V)
- Duplicate (Ctrl+D)
- Delete (Delete)
- Undo (Ctrl+Z)
- Redo (Ctrl+Y)

Editing the shape

Scale

Rotate

Lift

Place

- Click and drag
- Drop to workplane (D)

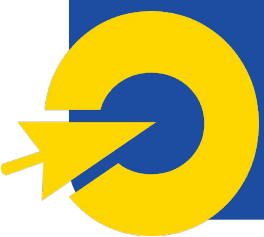
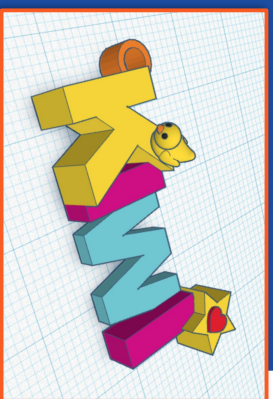
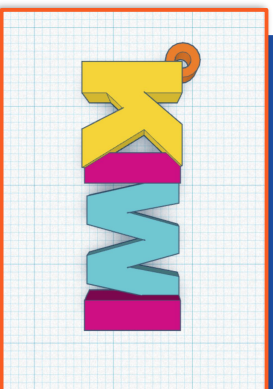
- Change color, make solid (S)
- Change to hole (H)

Shape properties

- Show all
- Group (Ctrl+G)
- Ungroup (Ctrl+Shift+G)
- Align (L)
- Mirror (M)
- Cruise (C)

You can print out the "Create cards" cheat sheet to help you
create a demo project

Create your keychain with Tinkercad!



Create your own keychain

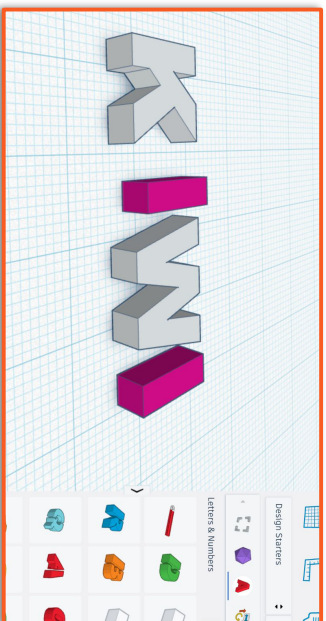
Use the cards in this order:

1. Choose the letters
2. Align
3. Change size
4. Create the ring
5. Customize it!
6. Ready to print



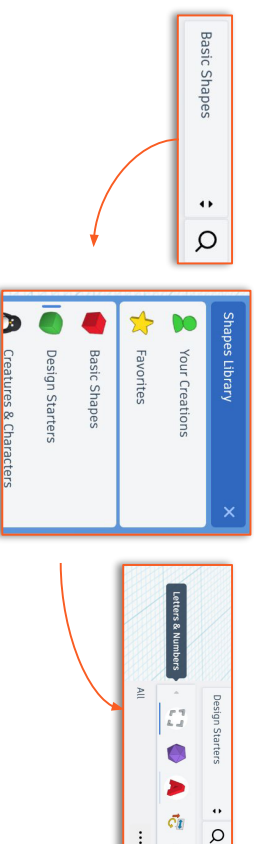
1. Choose the letters

Follow the steps on the side to get what is represented in the image. You can freely modify the project to your liking!

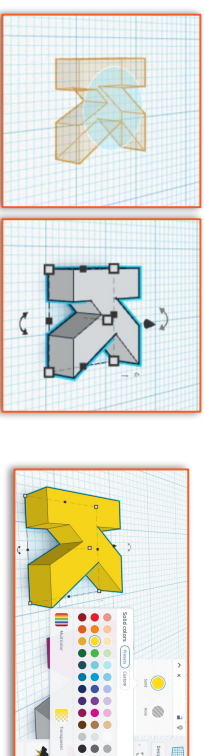


Choose the letters


Connect on tinkercad.com and create a new 3D project. To find the letters and numbers, select "**Design Starters**" in the drop-down menu on the right.



Choose the letters and **drag** them on the workspace. If you want to copy a letter, select it and press **ctrl+C**, **ctrl+V**. Try changing the color tool!



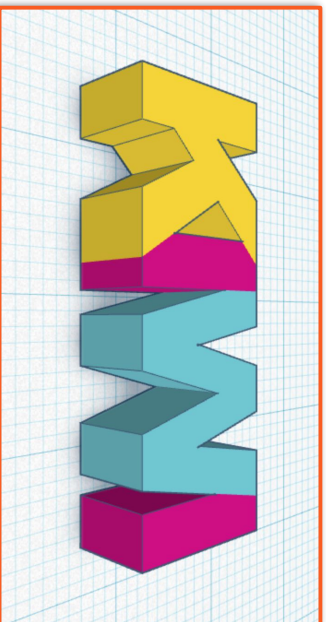
How to move around the workspace?

- Zoom in or out from your project by pressing + and -, using the touchpad or the mouse wheel. Use  to change the view angle. For precise navigation, press the right mouse button or hold down **ctrl** and **click** to change the view angle.



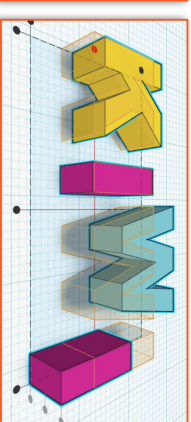
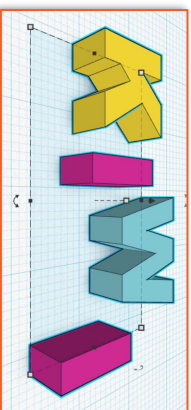
2. Align

Follow the steps on the side to get what is represented in the image. You can freely modify the project to your liking!



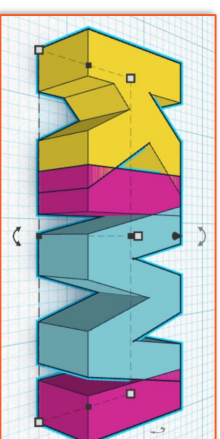
Align

Select all the letters and click the **icon**  to align them. Find out different alignment types by using the different **black dots**.



Place the letters close together: you can also move them using the arrows.

Select all of them and **group**  them together.



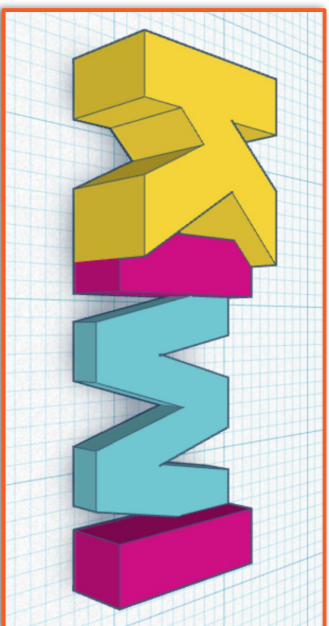
Tip: Change the setting of the *Snap Grid* to work with greater accuracy.





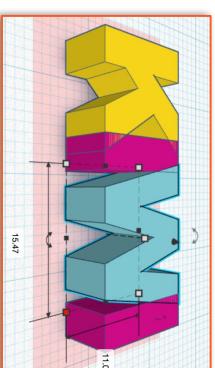
3. Change size

Follow the steps on the side to get what is represented in the image. You can freely modify the project to your liking!

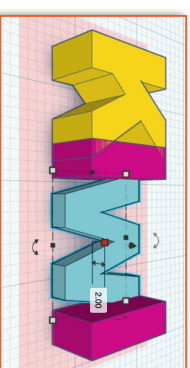


Change size


To change the size of a single letter, *double-click* on the group and select the element, then use the **small squares** that will appear. To maintain the aspect ratio, hold down *shift* while changing the size.

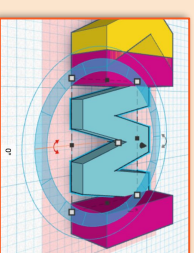


If you want to change the height, use the square in the middle position.



Try it yourself!

What happens if you act on the arrows  ?

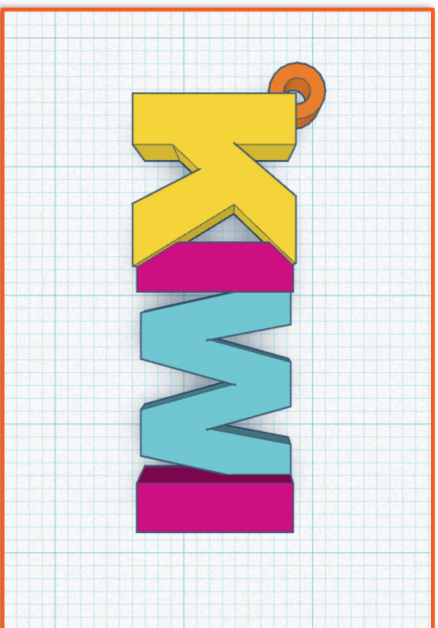




4. Create the ring

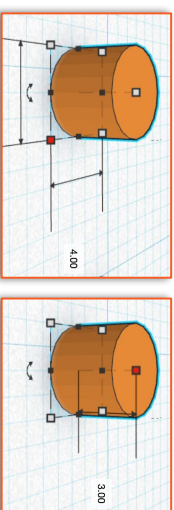
Follow the steps on the side to get what is represented in the image.

You can freely modify the project to your liking!

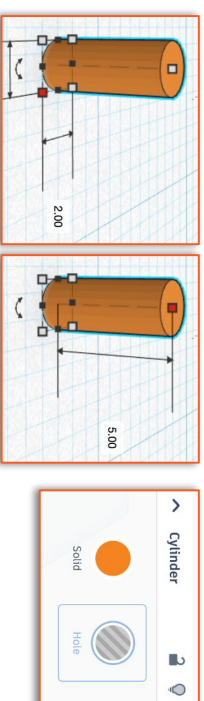


Create the ring

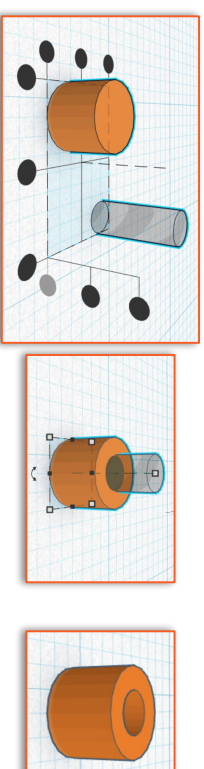
Place a **cylinder** (diameter 4mm and height 3mm) on the work surface.



Place a **second cylinder** (diameter 2mm and height 5mm) and select "**empty**".



Align the two cylinders in the center and **group** them together to create a **hole**. Then, place the ring in one corner of the keychain and group all the objects together.

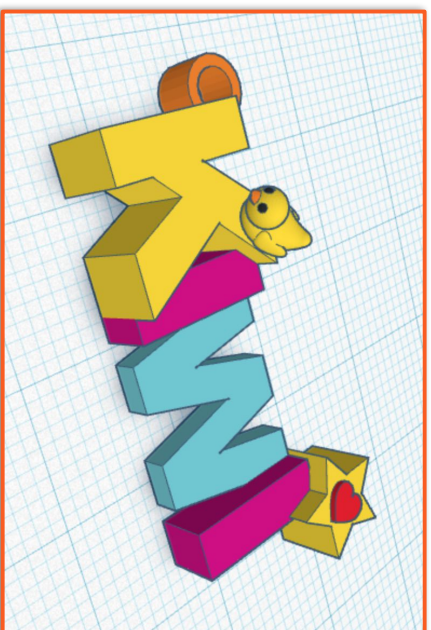




5. **Customize it!**

Follow the steps on the side to get what is represented in the image.

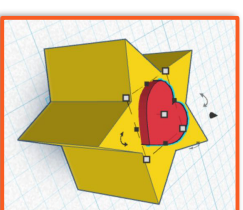
You can freely modify the project to your liking!



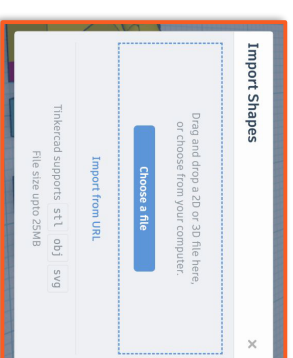
Customize it!

To customize your keychain you can:

1. **Add** new objects from the gallery by searching through categories. You can use the cone  to move elements vertically.



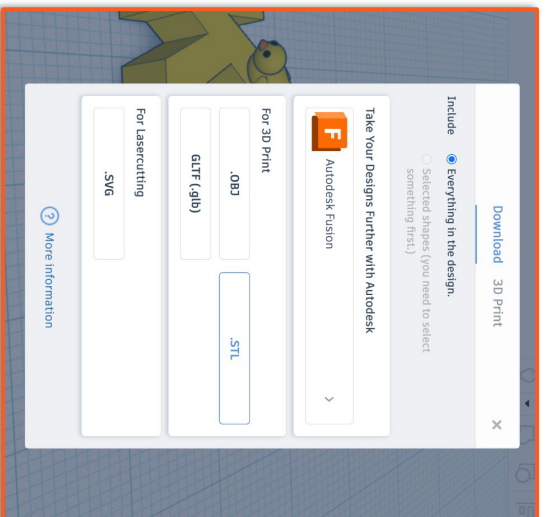
2. **Create** and invent new shapes, combining different elements and grouping them.
3. **Import** items from files. You can find useful sites online with libraries of ready-made and ready-to-use objects. For example thingiverse.com





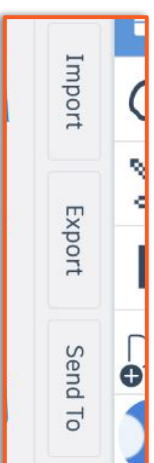
6. Ready to print

Follow the steps on the side to print your keychain!



Ready to print

Select "Export" to prepare the project for printing



Select **.stl** format



Import the **.stl** file in *Ultimate Cura* software to resize the keychain, check for possible errors, and enable printing supports if necessary.

Export the file in **.gcode** format and upload it to an **SD card**.



Insert the **SD card** into the slot on your printer and start pt printing process!



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Page 7

You can print out the "Guide for Educators" cheat sheet to help
you facilitate the activity



Checklist

Use this checklist to prepare for the activity:

- Have a tutorial with the participants.**
Before the activity, explore Tinkercad and do a simple tutorial to create 3D objects. You can show how you move in space and how to create simple elements.
>>>> Are you new to Tinkercad?
No problem! Open the **Create Cards** and follow the steps to create your first 3D project!

- Print the activity cards.**
Prepare some printed copies of the "guides for participants" that can be used during the workshop.

- Verify that participants have an account.**
Participants can register for free at tinkercad.com. If you are facilitating the workshop for a class of students, you can create a teacher account to easily support students.
- Prepare the computers.**
Arrange devices so that participants can work in small groups. Also set up a computer connected to a projector or a large screen to show examples and guide participants through the first steps.

Imagine

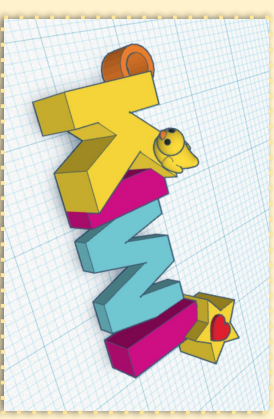
Start engaging the participants by introducing the theme and stimulating new ideas for the projects.



Provide ideas and inspiration

Show an introductory video about Tinkercad or examples of simple objects created with the software.

Show different examples with different customizations, such as keychains with the shape of animals, comic book characters, etc...



Peer-to-peer exchanges of ideas

To help participants, come up with ideas for their keychain, brainstorm creative themes. Take turns to share shape ideas or customizations, such as a star-shaped keychain with your name, or a keychain that represents a hobby, like a tennis racket or a book.






Demo project: First steps

Show the first steps to create a new project.



How to move in space

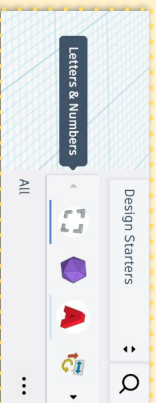
To zoom in or out press + or -, use the touchpad or rotate the mouse wheel.

Use  to change the view angle. For precise navigation, press the right mouse button or hold down *ctrl* and *click* with the mouse.



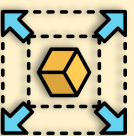
Choose a letter

Select "Project Starters" in the drop-down menu on the right, select a letter and drag it onto the workspace.



Change the parameters

Show participants how to change the size or color of selected objects, how to add more shapes and group them together.



Create

Support participants during the creation of their project.



Start with...

Ask questions to guide participants to start creating their own project.

For example:

- Which name did you choose?
- What new element would you like to add?



Provide helpful resources

Offer different ways to get started.

For example: some participants will be happy to follow printed guides, others will instead watch online tutorials. See example resources in the "Learning Center" section on tinkercad.com.

Suggest ideas to get started

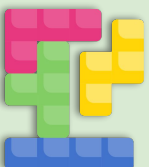
- Choose a name
- Change colors
- Think of a composition
- Add decorative elements





Try more

- Create new shapes
- Create a keychain made up of multiple parts that fit together
- Import complex shapes from other galleries



Support peer collaboration

- When someone gets stuck, encourage collaboration with other participants who can help them.
- Have you found an interesting idea? Ask the person who thought of it to share it with others.



Facilitate problem solving

Help participants to feel comfortable trying different combinations of shapes and seeing what happens.

To understand their thought process, you can ask questions like:

- How is it going?
- What are you working on now?
- What do you plan to try next?

Share

Ask participants to share their project with their peers of exploration.



Ask questions they can discuss:

What did you like the most about the project you created?

What was the hardest part?

If you had more time, what would you have wanted to add or change?

And then...?



- Participants can use the ideas and the concepts from this workshop to create a wide variety of projects.
- If possible, provide an online space to collect and share everyone's projects.

These guides were created by
Inspired by the



Cards



CodeWeek
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