



EU Code Week 4 VET

**Toolkit for VET teachers and
educators**

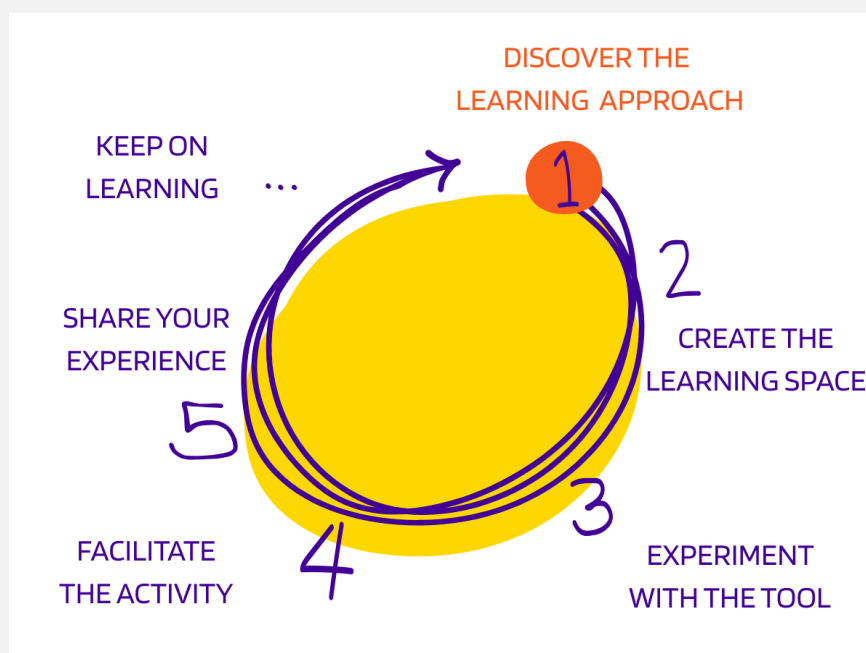
How to use the toolkit

This toolkit is designed for VET teachers and educators who wants to:

- Design and facilitate meaningful project-based learning experiences;
- Ensure that all students, including girls and those at risk of being left behind, are included and engaged in the learning process;
- Foster essential social skills, including collaboration and problem-solving;
- Foster creativity and encourage the use of technology as a "construction material" for creative expression and problem-solving;
- Create a growing community of VET Schools and educators actively involved in EU Code Week.

In this toolkit you can discover the Learning Creative approach through sequential, easy-to-follow steps, using accessible language. Every step is a downloadable PDF, easy to print and use in class. It contains theoretical background, lesson outlines, activity descriptions, facilitation prompts, and guidelines for teachers.

The objective is to guide you from learning the Creative Learning approach to applying it in the classroom, supported by lesson plans and scaffolding materials. **Let's start!**



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| 1. Discover the learning approach



*“Learning is most effective when part of an activity
the learner experiences
as constructing a meaningful product”*

Seymour Papert



Creative Learning principles

The **Creative Learning** approach was developed by the Lifelong Kindergarten group at the MIT Media Lab. This pedagogical framework emphasizes learning through creating **personally meaningful projects** and is anchored in four key principles, known as the **4 Ps**:

1. **Projects**: Educators create learning sessions in which students can learn while working on **their own project**, in hands-on activities that encourage exploration and experimentation.



2. **Passion**: Educators allow students to work on projects **"they care about"**, encouraging them to pursue topics and projects they are passionate about to enhance motivation and engagement.



3. **Peers**: Educators promote collaboration and knowledge sharing among students, to build a supportive **learning community**.
4. **Play**: Educators foster a playful, exploratory, and open-ended learning environment where curiosity and experimentation drive the process. Through **multiple iterations**, students can refine their ideas, develop new insights, and continuously improve their creations.

Structure of a Creative Learning activity

A Creative Learning activity should be structured in 3 phases:

1. IMAGINE
2. CREATE
3. SHARE

Activity Overview

Here's a programming tip for a 1-hour activity:



Divide the class into groups and introduce the theme of the activity



Help participants create their own project, working at their own pace



Plan a final moment of project sharing and reflection

One-hour creative learning activity summary

In the **IMAGINE PHASE**, split the class into groups and get the learners thinking by explaining the theme and coming up with new ideas for the projects.

At this stage, it is important to **come up with ideas and inspiration**. For example, you can show an introductory video about the tool you will use during the activity (in this case Tinkercad), as well as examples of simple objects created with the software.

At this stage, it is helpful to encourage **peer-to-peer collaboration**, to allow people to share their ideas and work together to come up with new ones. Before moving on, give the learners a demo project by showing them the first steps to creating a new project.

In the **CREATE PHASE** 'create' phase, you are the **facilitator** who helps to guide the process by:

- Suggesting ideas to get the project started;
- Displaying demo projects;
- Providing scaffolding materials (Create cards)
- Providing useful resources;
- Encouraging people to work together;
- Inviting them to try more features and face more difficult challenges;
- Helping them solve problems.

TIPS!

You can guarantee an inclusive approach by preparing simple, pre-assembled demos that have "low floor, high ceiling, and wide walls".

- **Low floor:** the demo is accessible for beginners.
- **High ceiling:** the demo offers challenges for advanced learners, allowing space to experiment with increasingly complex ideas.
- **Wide walls:** the demo can be personalised and it offers opportunities for diverse expressions of creativity based on students' interests.

In the **SHARE PHASE**, ask learners to share their projects. Ask questions to join the discussion. For example, ask "*What did you like the most about the project you created?*", "*What was the hardest part?*" and "*If you had more time, what would you have wanted to add or change?*"

If you can, create an online space where everyone can share their projects. This could be used as a source of inspiration for future sessions.

In the fourth section of the VET Toolkit ("*Facilitate the activity*"), you will learn how to use the Creative learning approach in one-hour class-activity, and you will get practical advice and step-by-step instructions for running project-based activities effectively.



| 2. Create the learning space

This section shows you how to create an environment where people can learn using the Creative Learning approach. Whether physical or virtual, the learning environment should encourage learners to freely explore, collaborate, experiment, and create meaningful projects.

Keep in mind these principles, when adapting your classroom for a Creative Learning session.

- o **Flexible Spaces:** Organise environments where furniture and resources can be arranged to promote teamwork and free exploration.
- o **Diverse Materials:** Provide a variety of tools and materials (e.g., computers, tablets, art supplies, recycled items) to cater to different interests, attitudes and skill levels.

- o **Inclusive Approach:** Provide demo projects that have a "low floor, high ceiling, and wide walls," meaning they are accessible to beginners, offer challenges for advanced learners, and allow for diverse expressions of creativity.

TIPS to help you organise the space

- Arrange desks in clusters or flexible group configurations to promote teamwork.
- Utilise different areas of the room, such as the floor, outdoor spaces, or relaxation corners.
- Provide diverse materials, including digital tools (PCs, tablets) and unplugged resources (paper, markers, recycled materials).
- Prepare simple, pre-assembled demos for beginners while offering advanced materials for experienced participants. In this way, you apply the low floor, high ceiling, wide walls principle:
 - **Low floor:** Accessible entry points for beginners.
 - **High ceiling:** Space to experiment with increasingly complex ideas.Challenges for advanced learners.
 - **Wide walls:** Opportunities for diverse projects based on students' interests.

You can print out the "**Create your Playground**" cheat sheet to help you prepare the learning space. It is available in printable materials.

Create YOUR Playground
inspired by Creative Learning

Create YOUR Playground
in FIVE Steps

1 Organize a space where desks can be arranged in **one or more islands** 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 **desks** (PCs, tablets, etc.), **unplugged materials** (markers, paper, scissors, LEGO, batteries, chalk, 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 (**inspire**). You can introduce a theme for the day ("Learn Day") to facilitate project creation (**create**), ensuring 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 tasks 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 "learning motor", and everyone can **learn through play** in the spirit of Creative Learning.



| 3. Experiment with the tool

In this learning activity you will use the tool **Tinkercad**. It is a free and intuitive **3D modeling** tool, ideal for learning through practice, bringing creative ideas to life, and expressing yourself. Designed for students and educators, it can be used effectively in both in-person and online workshops, making it a versatile option for various educational contexts. It is perfect for beginners but also offers advanced features for creating complex projects.

Tinkercad can be used both on personal computers and on tablets, but not smaller devices (it could be difficult to interact with!).

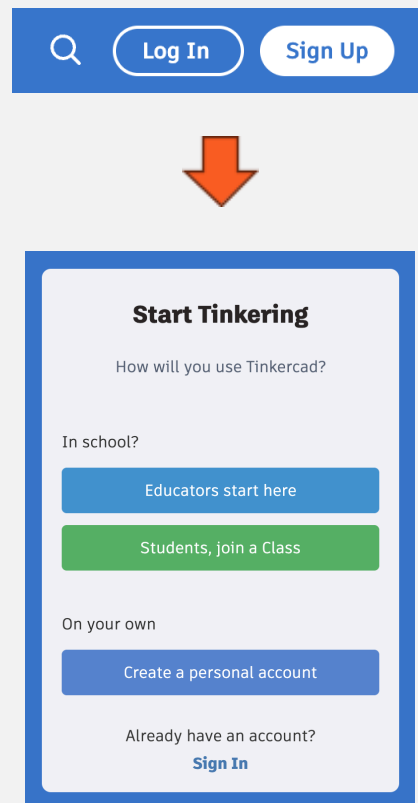
Why Tinkercad?

Tinkercad is much more than a 3D design tool—it is a creative playground that fosters exploration, iteration, and collaboration. It is aligned with the Creative Learning principles for several reasons:

- Tinkercad encourages Project-Based Learning, allowing students to create projects that hold personal significance, in alignment with Creative Learning's principle. Refer to "Section 1 - Discover the learning approach" for details.
- Each Tinkercad project becomes a cycle of experimentation, where students can refine their ideas and learn through successive iterations, following the natural process of the [Creative Learning Spiral](#) (Imagine => Create => Share => Reflect => Imagine => ...)
- Tinkercad embraces the low floor, high ceiling, wide walls principles:
 - Low floor: Students can easily get started and create their first project in no time.
 - High ceiling: The platform offers opportunities to create increasingly complex and ambitious projects.
 - Wide walls: The variety of projects students can create is vast and adapts to their personal interests and creativity.
- Tinkercad is highly flexible, it can be used both in-person and online, fostering a dynamic and accessible learning experience anywhere.

How to register to Tinkercad

- Visit the free website www.tinkercad.com
- Create a personal account (registration is required) by clicking the [Sign Up](#) button and selecting "Create a personal account"
- Follow the instructions, then you can start creating immediately!



Note for teachers

There are also specific options for students and teachers: Tinkercad Classroom. This is an ideal solution for managing classroom activities, by providing the students with the shared class link. For more details, you can refer to the [Official Guide to Tinkercad Classrooms](#).

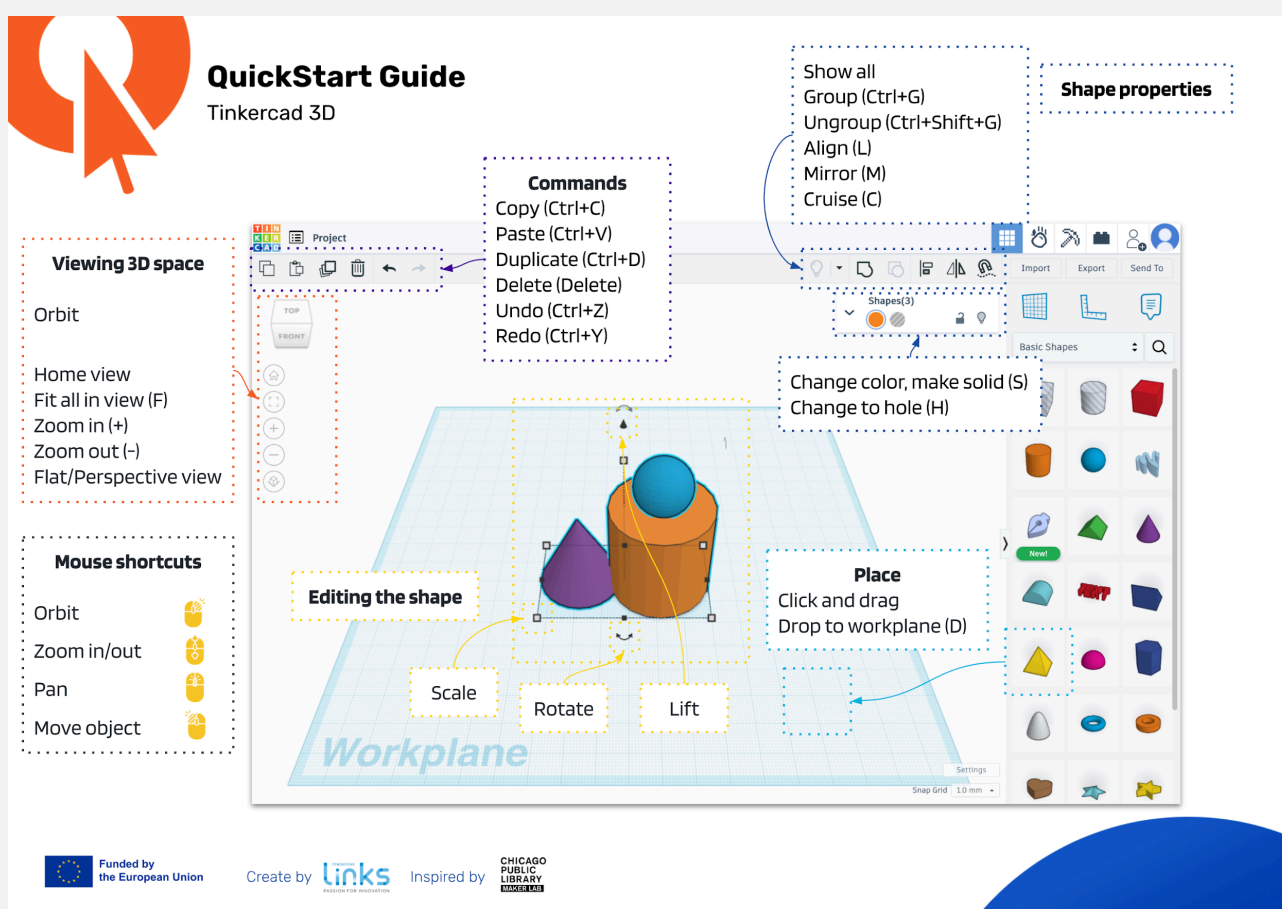


How to move your first steps on Tinkercad

As a Tinkercad beginner the first step to move is to navigate the platform, to quickly gain confidence and a quick overview of key tools and commands.

Print and use the following handout as a reference to:

- Understand basic commands, shortcuts, and navigation tips;
- Find the right tools and actions, while working on projects.



Tinkercad Quick Start Guide cheat sheet, available in printable materials

How to create a demo project

You can try out Tinkercad by making a demo project. To do this, follow the instructions in the 'Create cards' cheat sheet. You can find it at the end of the section, in printable materials.

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

Create by  links
PASSION FOR INNOVATION

Inspired by Scratch Card 

Create Cards cheat sheet, available in printable materials



| 4. Facilitate the activity

The activity in brief

This activity is a **1-hour**, hands-on lesson for VET students, based on Creative Learning using Tinkercad. Students work individually or in small groups on a **concrete mini-project**, supported by Create Cards (Refer to printable materials) and the teacher's facilitation. The focus is on experimenting with digital tools, connecting theory and practice, collaborating with peers and reflecting on what they have learned at the end of the session.

Target:

VET students (upper secondary or post-secondary level) who are approaching topics related to digital skills, IoT, hardware and creative design for the first time, and who can benefit from a guided, hands-on activity using online courses and 3D design tools.

Objectives:

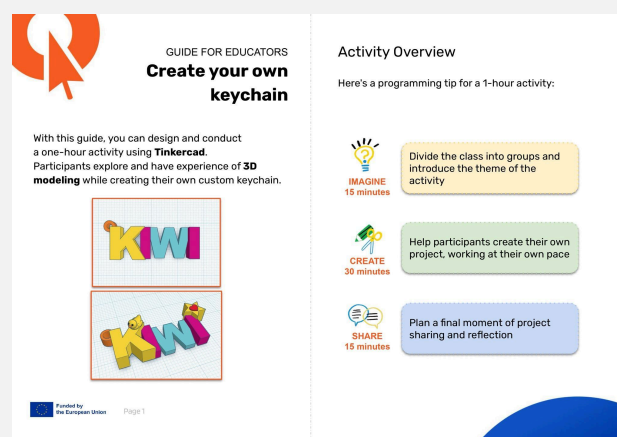
- To introduce VET students to **basic concepts of IoT and computer hardware** through a practical, exploratory activity;
- To support them in using online courses and creative tools (such as Tinkercad) to **design** simple artefacts and projects;
- To foster **collaboration, peer support, problem solving**;
- To foster **reflection** on what they have learned.

Activity's steps:

You just read about a few different tools, and you might be wondering how to concretely implement them during your lesson. Although there are different ways in which you can use them, we have put together a sample 1-hour class that is powered by the earlier-mentioned Creative Learning approach together with the different tools that you can easily download from this toolkit.

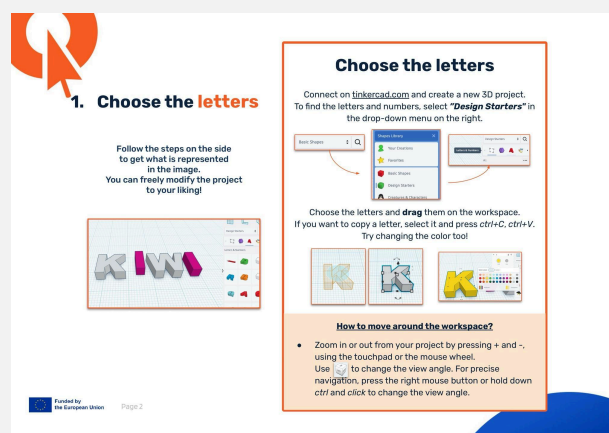
Before the activity

- Sign up for [Tinkercad](https://www.tinkercad.com) using your school email to access all features and manage student activities. Explore Tinkercad in advance and create a Demo project. Refer to "Section 3 - Experiment with the tool" for details.
- Decide how to divide the class in small groups.
- Print out the "Guide for Educators" cheat sheet to help you with your role as a facilitator.



"Guide for Educators" cheat sheet, available in printable materials

- Arrange the classroom setting to promote peer collaboration and experimentation. Refer to "Section 2 - Create the learning space" for details.
- Print out the "Quick start guide" and "Create cards" cheat sheets for each group to support learners' in the create phase.
- Ensure each group has access to at least one device and a set of "Quick start guide" and "Create Cards".



"Create cards" cheat sheet, available in printable materials

- Give the learners a list of design challenges to choose from.

Possible design challenges	Focus
Make something for someone you care about, share the love!	These challenges focus on self expression
Create your own superhero	
Create the avatar that represents your favourite character in science and technology	
Create a product that allows you to discover a monument from your favourite city	
Make Some Art	
Design your dream room	
Create an object from the future	
Create a product that allows you to tidy up your desk or workstation	These challenges are Dream Jobs oriented
Create a product that helps you spend less time on your smartphone	
Design your dream workstation for your future job	
Design a small "smart" device (sensor, support, alert system) that makes your work safer and more efficient.	
Create a gadget to promote your company	
Create a product that support text readability	
Design an artefacts (tool holder, checklist, label system) that would help you during your first internship.	
Create a smart upgrade for your classroom or laboratory	
Create a product that.... Invent your own challenge!	

[Click here](#) to explore a variety of official Tinkercad lesson plans designed to engage your students in creative 3D projects and support hands-on learning across different subjects.

During the activity

- Start with a brief **introduction to the challenge**: explain what the materials are, where to find them, and how students can use them.
- Run a short **demo project** and actively involve students — ask for suggestions, invite them to take small steps, let their input guide some decisions. You could show this [video](#) to introduce Tinkercad.
- Emphasise that the main goal is **experimentation**, and that making mistakes is a natural and valuable part of the process.
- Allow students to work at **their own pace** while providing support when needed (e.g., some students may prefer to use the printed “Create Cards” (available in printable materials), others may prefer to explore on their own) .
- Encourage **peer exchanges** to stimulate creativity and problem-solving. If a student is stuck for a long time, prompt them to ask a peer for help.

After the activity

- Facilitate a short **reflection** session where students can share their projects and insights.
- Ask **reflective questions** to encourage deeper thinking (e.g., “What did you learn? What would you do differently next time?”).
- Collect **feedback** to improve and refine future activities.
- Reach us out at codeweek@linksfoundation.com to share your feedback on the toolkit and suggest new themes for future materials!
- Did your students engage well with the Cisco Networking Academy courses? You can become a **Cisco Networking Academy** and teach the whole portfolio for free!



| 5. Share your experience

Every time you run an activity in class, during a school event, a team building, or a training course, register it on the [map of the European Code Week](#) with the hashtag **#DreamJobsinDigital**. Every organizer will receive a participation certificate for their commitment and will contribute to a campaign raising awareness of digital skills and careers.

If you want to get in touch with an international group of enthusiastic teachers, sign up for the [EU Code Week teachers' Facebook group](#)! To take a further step and collaborate with other schools in your country or across borders, join the [Code Week 4 All challenge](#).

TIPS

You can use and customize the following text for registering your activity [on the European Code Week map](#) and showcase your experience

Title: "EU Code Week 4 VET @ ___name your institution___"

Description:

"Imagine, create, share, and reflect! Today, the class worked in teams with Tinkercad, following the Creative Learning approach. Learners faced different design challenges that not only trained digital skills, but also collaboration, problem solving, and creativity, in preparation for their future work with [#DreamJobsinDigital](#) and [#CodeWeekEU](#) resources.



| 6. Keep on learning

Continuous learning for students

If you want to promote continuous and advanced learning, the **free online courses from CISCO Networking Academy** are a good place to start.

NetAcad's introductory classes are the perfect means to combine theoretical knowledge from the courses with practical, hands-on projects to reinforce learning through application. These classes are meant for **anyone above the age of 13**, and all last under 10 hours, so they are perfect for those who are completely new to the topic or need a refresher. Find below a brief explanation of each

class and click on the links to enroll as a student! As an educator, you can share the links below to your own students to let them independently work through the course materials.

- **Introduction to IoT:** Offers foundational knowledge about the Internet of Things, preparing students for the interconnected world of technology. ([>> click here!](#))
- **Intro to Cybersecurity:** Teaches cybersecurity basics to protect the students' personal digital life and gain insights into the biggest security challenges companies, governments, and educational institutions face today. ([>> click here!](#))
- **Intro to Data Science:** Teaches data science, data analytics, and data engineering to understand how machine learning is shaping the future of business, healthcare, education, and more. ([>> click here!](#))
- **Introduction to Modern AI:** Helps students learn key AI concepts and get hands-on practice with AI-enabled apps. ([>> click here!](#))
- **Digital Awareness:** Equips students with fundamental knowledge and practical digital skills that can be applied at home, school or work. ([>> click here!](#))
- **Computer Hardware Basics:** Explores the fundamentals of computers and mobile devices, the components that comprise them, how they work, and basic troubleshooting tools and techniques. ([>> click here!](#))

[Click here](#) for a full orientation course on all the available Cisco Networking Academy courses and how you can make the most of these materials!

Continuous learning for educators and teachers

You can become a **Cisco Networking Academy**

Cisco Networking Academy partners globally with **12,100 academies** and **31,300 instructors**, offering a curriculum in 18 languages. There are **many more courses** than the ones outlined in this toolkit, including more advanced levels! Once your school is registered as a Cisco Networking Academy, you will be able to independently exploit this curriculum, use useful teaching tools and you can be supported by our global network of institutions through, for example, teacher training and technical support.

*To exploit all the resources offered and gain support from our global network, you can easily **become a Cisco Networking Academy** through the following [link](#).*

*Find out [here](#) about **data privacy**.*

| Printable materials

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

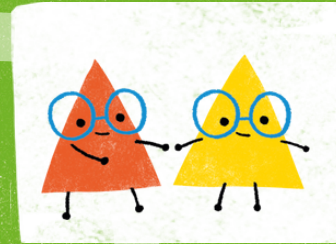
Create YOUR *Playground*

inspired BY Creative Learning

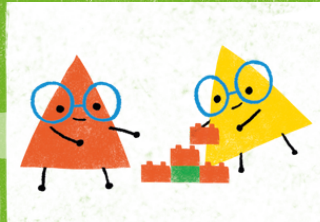
Setting



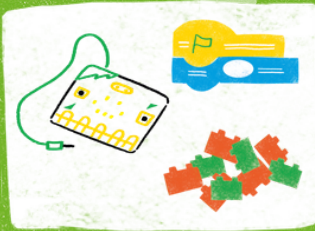
Peers



Play & Passion



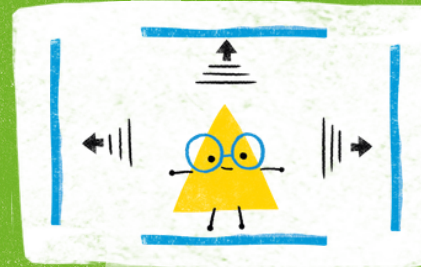
Project



Spiral



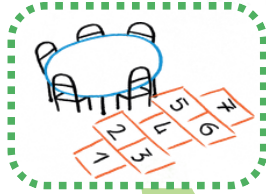
Principles



Create YOUR *Playground*

in FIVE Steps

1



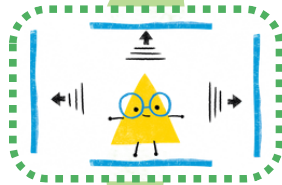
Organize a space where desks can be arranged in **one or more clusters** to promote collaboration among participants. But don't limit yourself to desks! Make use of **other areas** as well, such as the floor, the garden, a relax room, etc.

2



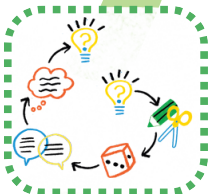
Provide participants with various **devices** (PCs, tablets, etc.), **unplugged materials** (markers, paper, scissors, LEDs, batteries, clamps, recycled materials, fabrics...), available kits, and some **simple pre-assembled projects** for free experimentation.

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)

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

Shape properties

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

Editing the shape

Scale

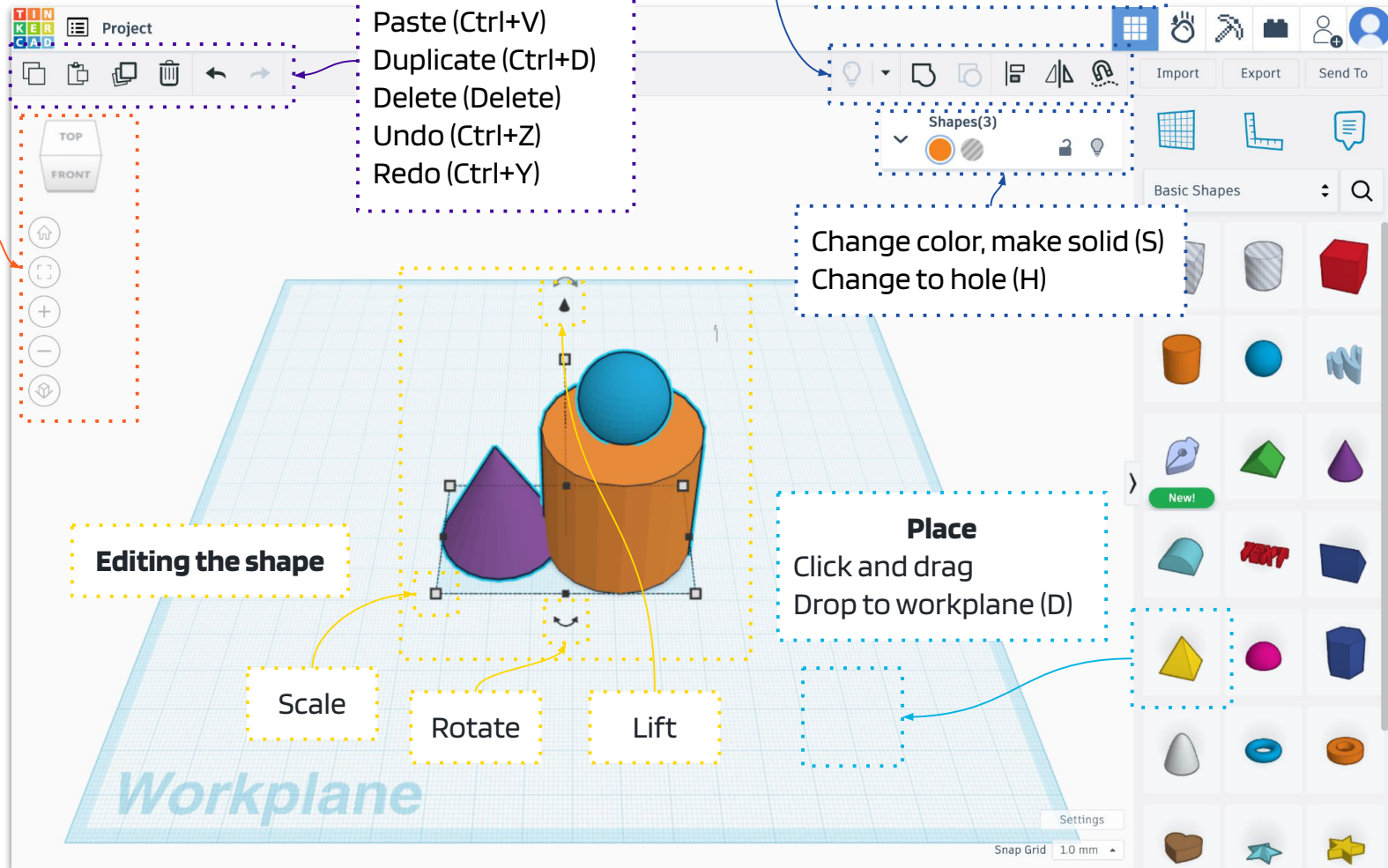
Rotate

Lift

Place

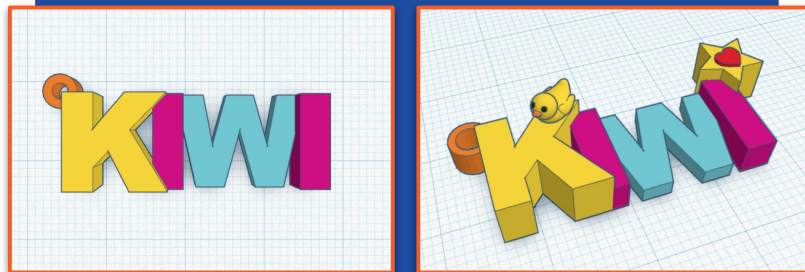
Click and drag

Drop to workplane (D)



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

Create your keychain with Tinkercad!



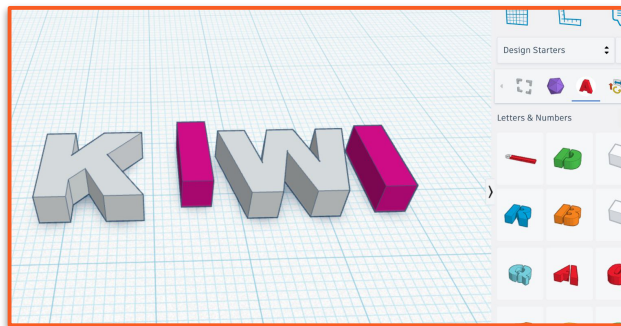
Create your own keychain

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

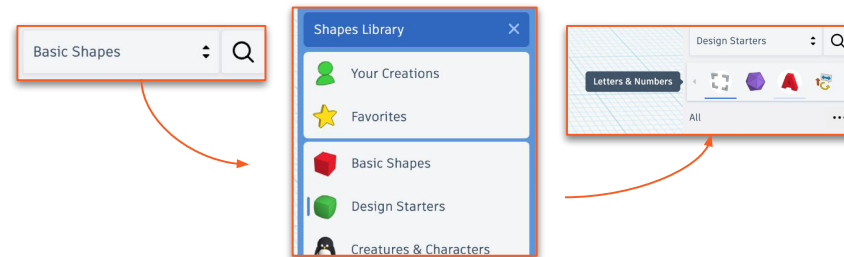
1. Choose the letters

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

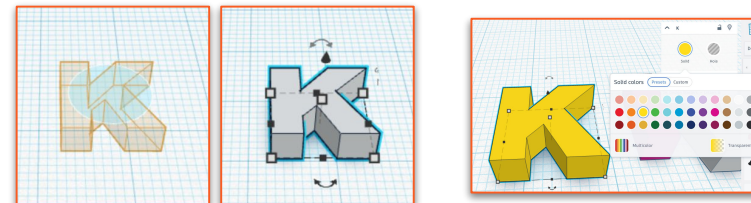


Choose the letters


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 too!



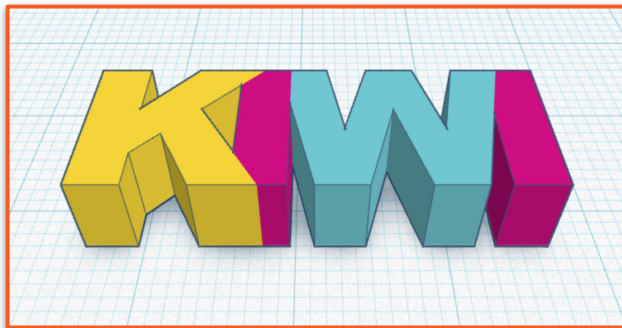
How to move around the workspace?

- 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.




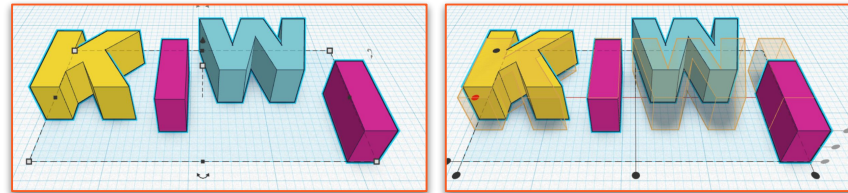
2. Align

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



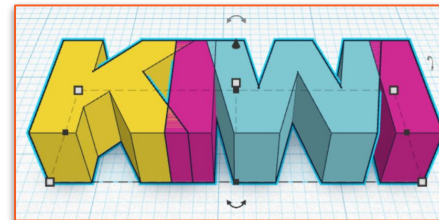
Align

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

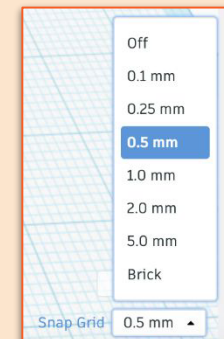


Place the letters close together: you can also move them using the arrows.

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



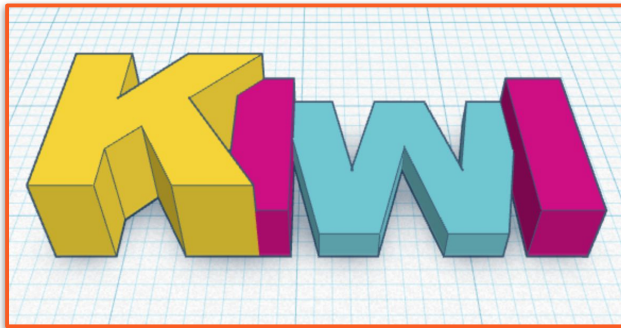
Tip: Change the setting of the *Snap Grid* to work with greater accuracy.





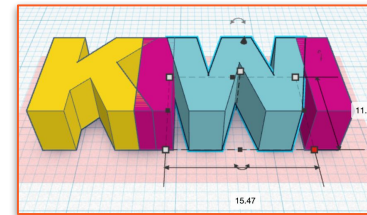
3. Change size

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

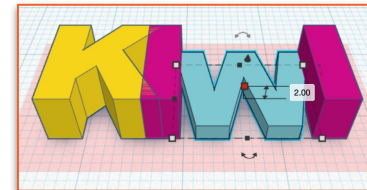


Change size


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.

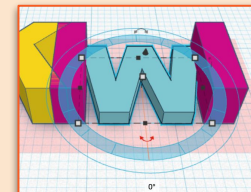


If you want to change the height, use the square in the middle position.



Try it yourself!

What happens if you act on the arrows  ?

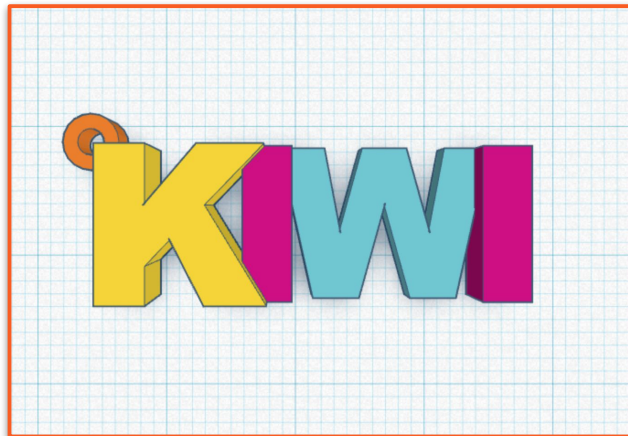




4. Create the ring

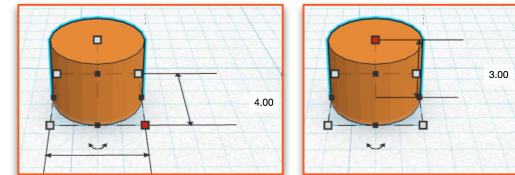
Follow the steps on the side to get what is represented in the image.

You can freely modify the project to your liking!

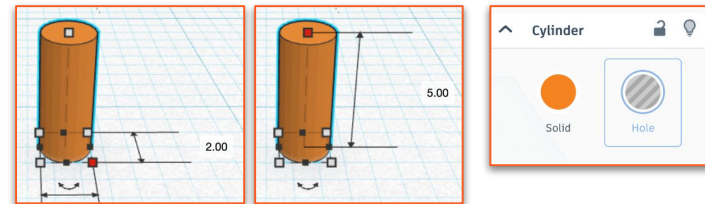


Create the ring

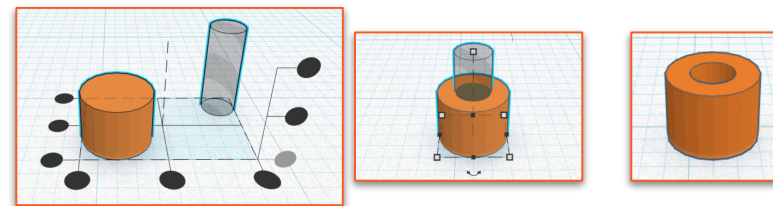
Place a **cylinder** (diameter 4mm and height 3mm) on the work surface.



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.

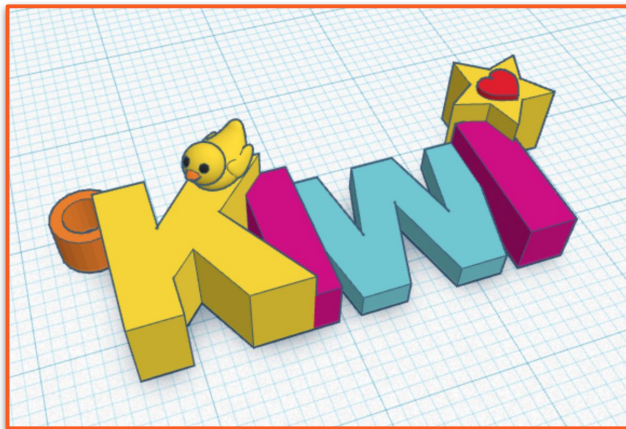




5. Customize it!


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

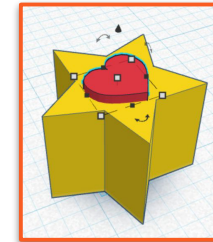
You can freely modify the project
to your liking!



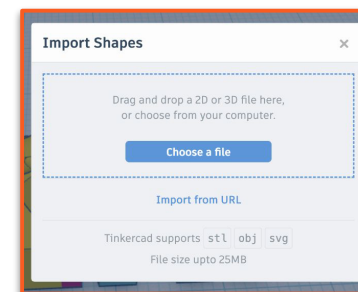
Customize it!

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.



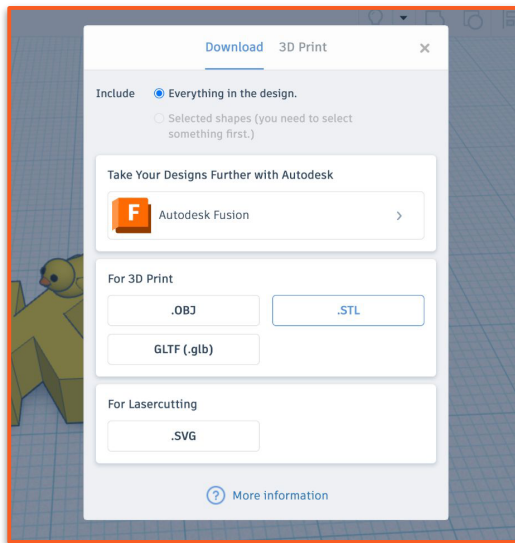
2. **Create** and invent new shapes, combining different elements and grouping them.
3. **Import** items from files. You can find useful sites online with libraries of ready-made and ready-to-use objects. For example thingiverse.com





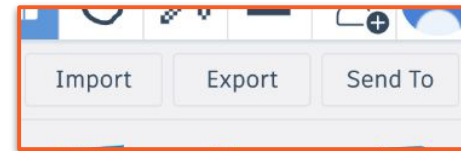
6. Ready to print

Follow the steps on the side to print your keychain!

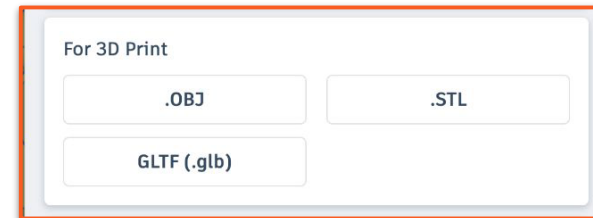


Ready to print

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**.



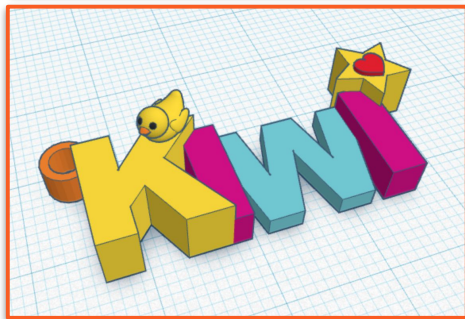
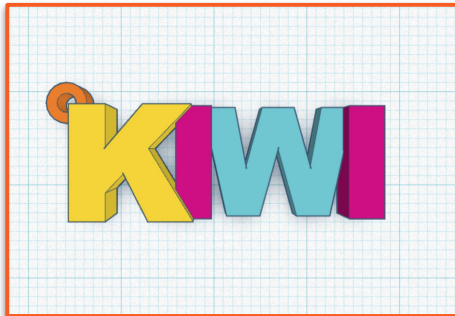
Insert the **SD card** into the slot on your printer and start pt printing process!

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



GUIDE FOR EDUCATORS
**Create your own
keychain**

With this guide, you can design and conduct a one-hour activity using **Tinkercad**. Participants explore and have experience of **3D modeling** while creating their own custom keychain.



Activity Overview

Here's a programming tip for a 1-hour activity:



IMAGINE
15 minutes

Divide the class into groups and introduce the theme of the activity



CREATE
30 minutes

Help participants create their own project, working at their own pace



SHARE
15 minutes

Plan a final moment of project sharing and reflection



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

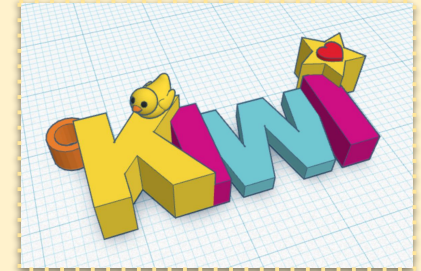
Start engaging the participants by introducing the theme and stimulating new ideas for the projects.



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

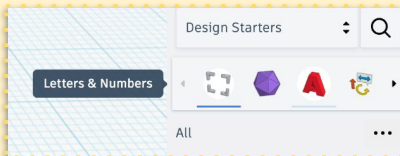
To zoom in or out press + or -, use the touchpad or rotate the mouse wheel.

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



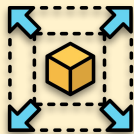
Choose a letter

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](https://www.tinkercad.com).

Suggest ideas to get started

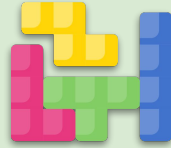
- Choose a name
- Change colors
- Think of a composition
- Add decorative elements





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

