

## Steam Up 2gether – Lesson 01

# Apply 3D Technology to your own Classroom and Campus





# Nick Hsu



## **Product Planner:**

Responsible for product planning and promotion of desktop 3D printers to many countries.



## **Bournemouth University (UK):**

MSc Marketing Management

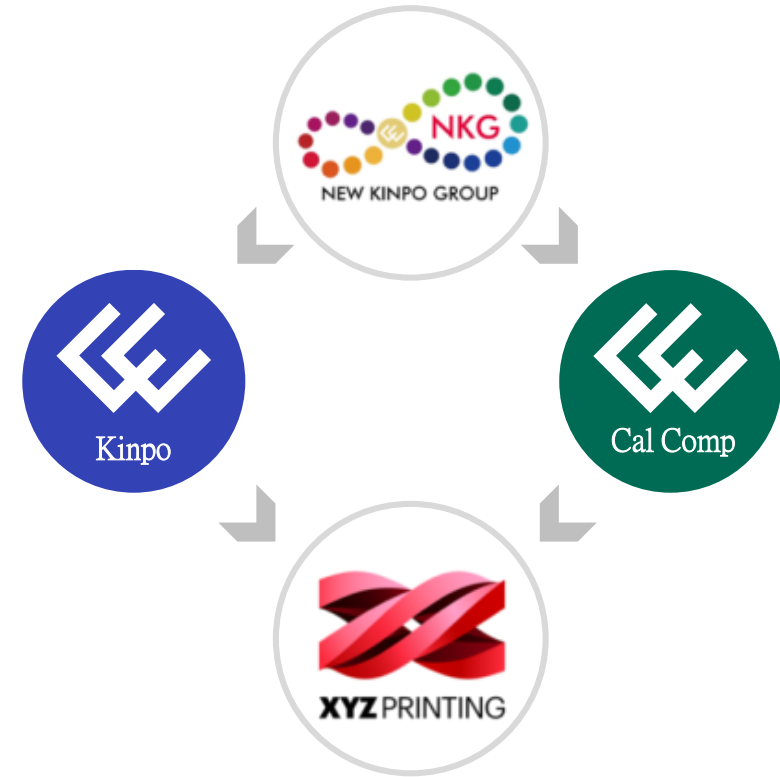


## About us

XYZprinting which founded in 2013 is a subsidiary of New Kinpo Group. The HQ and RD center are located in Taipei and with 7 global branch offices.

## Ambition

XYZprinting dedicates to offer the best 3D printing solutions and industry-leading expertise to help manufacturers transform the workflows in design, engineering and manufacturing.

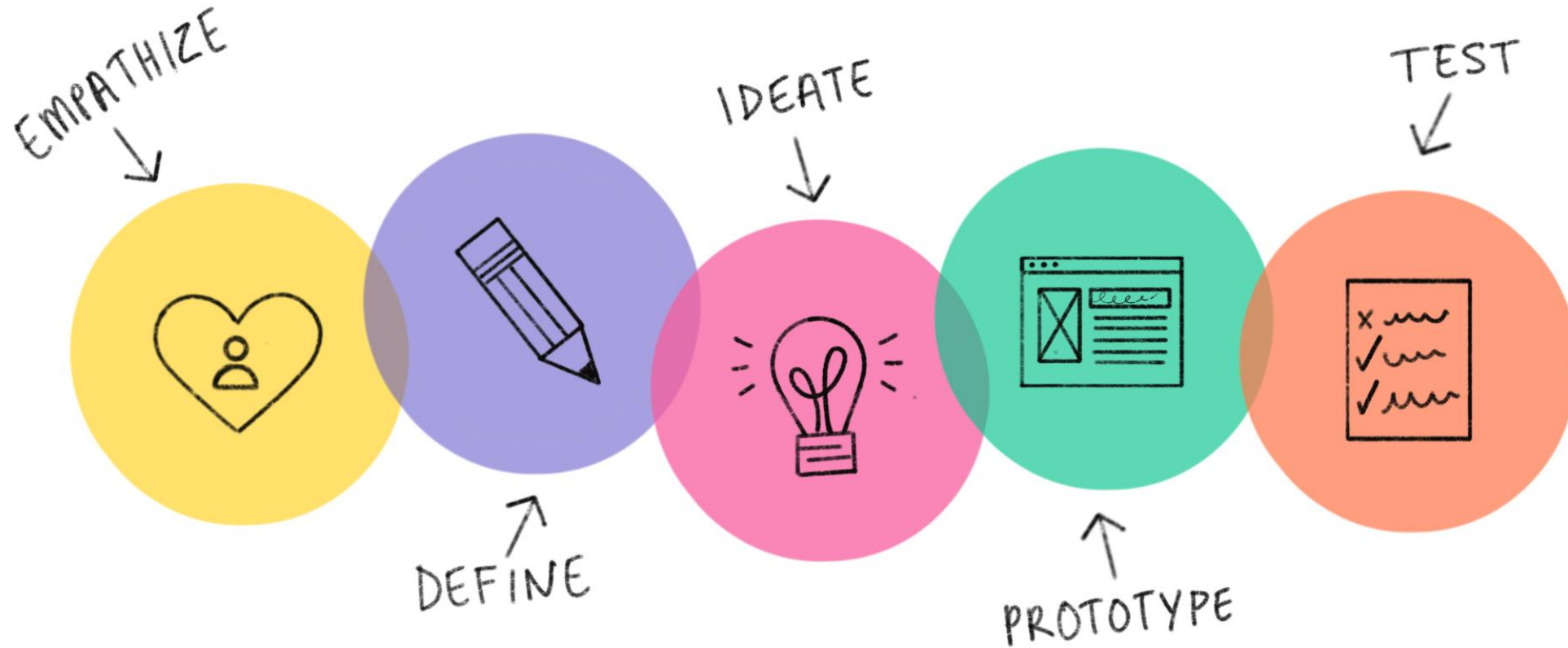


# STEAM 3D Curriculum

XYZprinting **STEAM** 3D Curriculum  
A whole new way of Learning

 [XYZprinting STEAM 3D Curriculum](#)

# What is Design Thinking?



# Class Outline with Design Thinking

**01** Empathize  
and Define

**Experience Sharing: School in Taiwan**

**02** Ideate

**Brainstorming the 3D printing  
application in the classroom**

**03** Prototype

**XYZmaker 3DKit Operation  
Design a teaching tool: Tangram**

**04** Test

**Application of Tangram**

# Empathize and Define



[Case Study: National Taipei University of Education](#)

# Ideate


Think about 3D printing application to different subjects...

REVOLUTIONIZING  
*the*  
**CLASSROOM**


3D printing has caught the attention of educators who are looking into ways to incorporate it into the classroom.

**Using 3D printers in the classroom could mean:**


Biology students can study cross-sections of hearts or other organs.




Engineering and design students can print out prototypes of their creations.




Chemistry students could print out molecules to study.




Architecture students could easily print out 3D models of their designs.




Auto class students could print replacement or modified car parts.




History classes could print out historic artifacts for closer examination.




Cooking class students could design intricate molds for ices and gelatins.



Graphic design students could create 3D versions of their artwork.

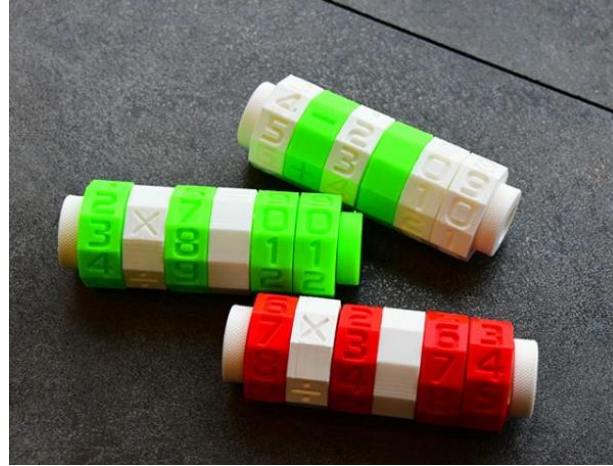


Students in geography courses could print out maps showing the topography, population or demographics of an area.





# 3D printing application in the class



# Other interesting decorations



<https://www.instagram.com/xyzprinting/>

# Pop quiz – Complete in Corelab

What are the benefits of 3D printing in a Classroom?

- (A) Practical Hands-On Approach
- (B) Engagement and Interactivity
- (C) Promotes Problem Solving Skills
- (D) Sparks Creativity and Innovation
- (E) All of the above



# Pop quiz – Complete in Corelab

Which process include in Design Thinking?

(Multiple Choice)

- (A) Empathize and Define
- (B) Ideate
- (C) Observe
- (D) Prototype and Test



# Please download our XYZmaker 3DKit

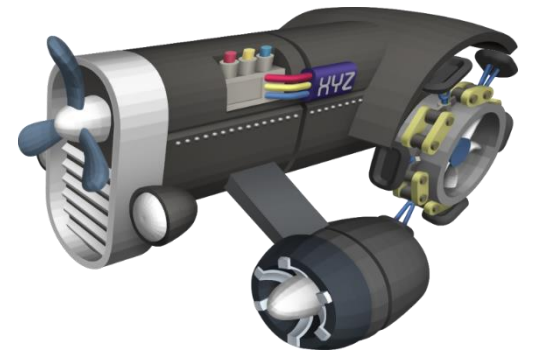
1. Preview the function of XYZmaker 3DKit  
[\(Introduction of 3DKit\)](#)
2. Prepare a Desktop / Tablet (Above 7" screen size) / Chromebook
3. Download XYZmaker 3DKit  
[\(Download for Windows\)](#)  
[\(Download for Mac\)](#)



XYZmaker 3DKit  
iOS



XYZmaker 3DKit  
Android



4. Install XYZmaker 3DKit software on your device  
[\(System Requirements\)](#)
5. Open 3DKit and play it.



# Minimum System Requirements

OS	Requirements
Windows	<p>Windows 10 or higher            Intel 4th generation CPU i5 or newer            8GB RAM memory            20GB available hard disk space            OpenGL 3.3.0 or newer version(Provided by display card vendor)</p>
Mac	<p>macOS 10.13 or higher            Intel 4th generation CPU i5 or newer            8GB RAM memory            20GB available hard disk space            OpenGL 3.3.0 or newer version(Provided by display card vendor)</p>
Chromebook	<p>Chrome OS Systems Supporting Android Apps(<a href="#">Relevant Information</a>)            *The status of device is marked as available in the stable channel</p>
Android	<p>Android 5.0 or higher            Minimum screen 7"</p>
iOS	<p>iOS 9.0 or higher            iPad mini2, iPad Air and iPads series launch after them</p>

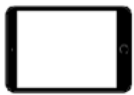


# Modeling – By using XYZmaker 3DKit

- Quite appropriate for beginners of 3D modeling: Offer a lot of easy-to-use 3D modeling tool.
- 3DKit is developed by XYZprinting and improve constantly.
- Support wide range of device: Desktop, tablet (Minimum 7" screen size), and Chromebook.
- It is free!



XYZmaker 3DKit supports **5** OS!

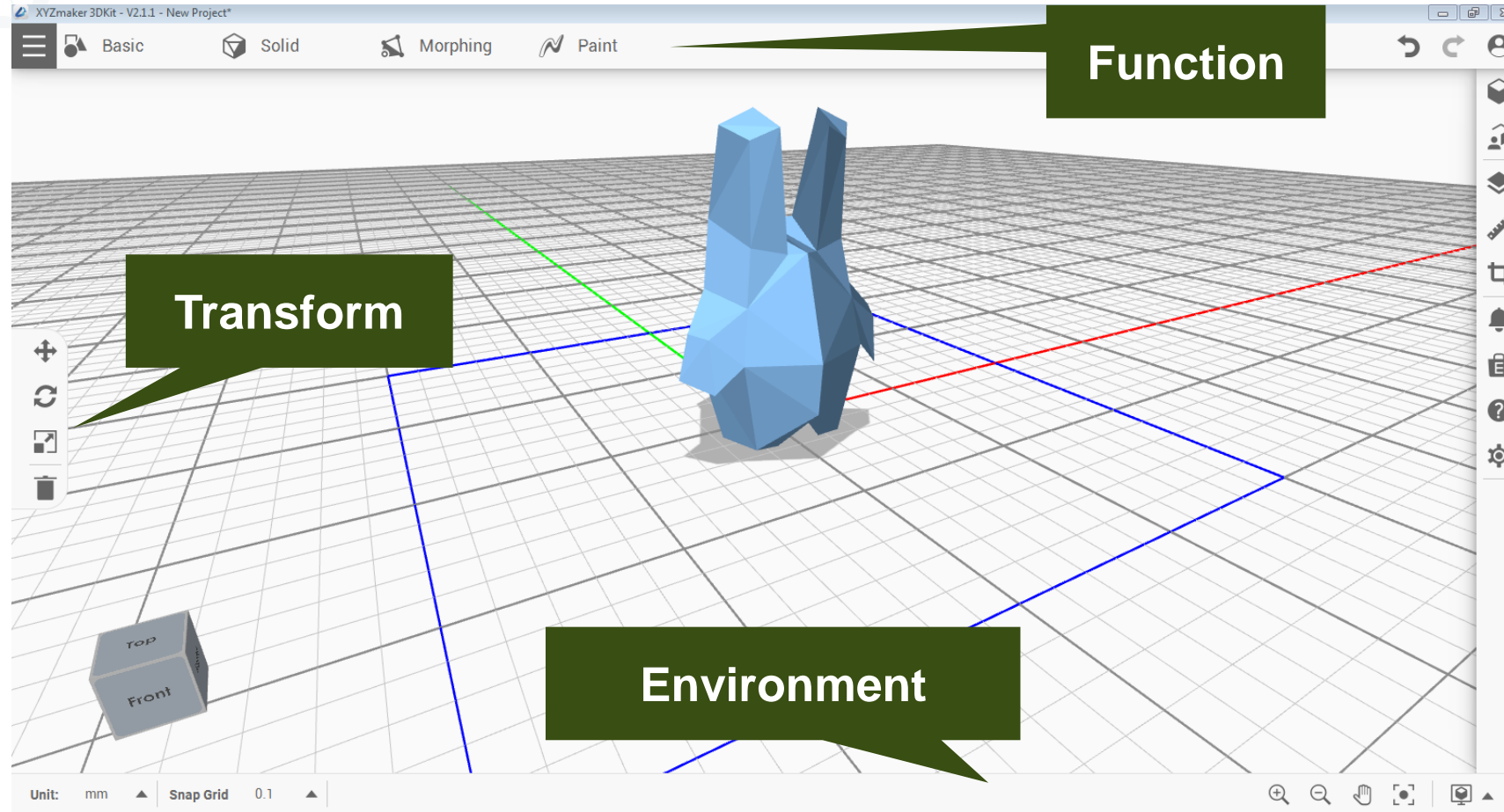


iOS



chromebook

# The Interface of XYZmaker 3DKit



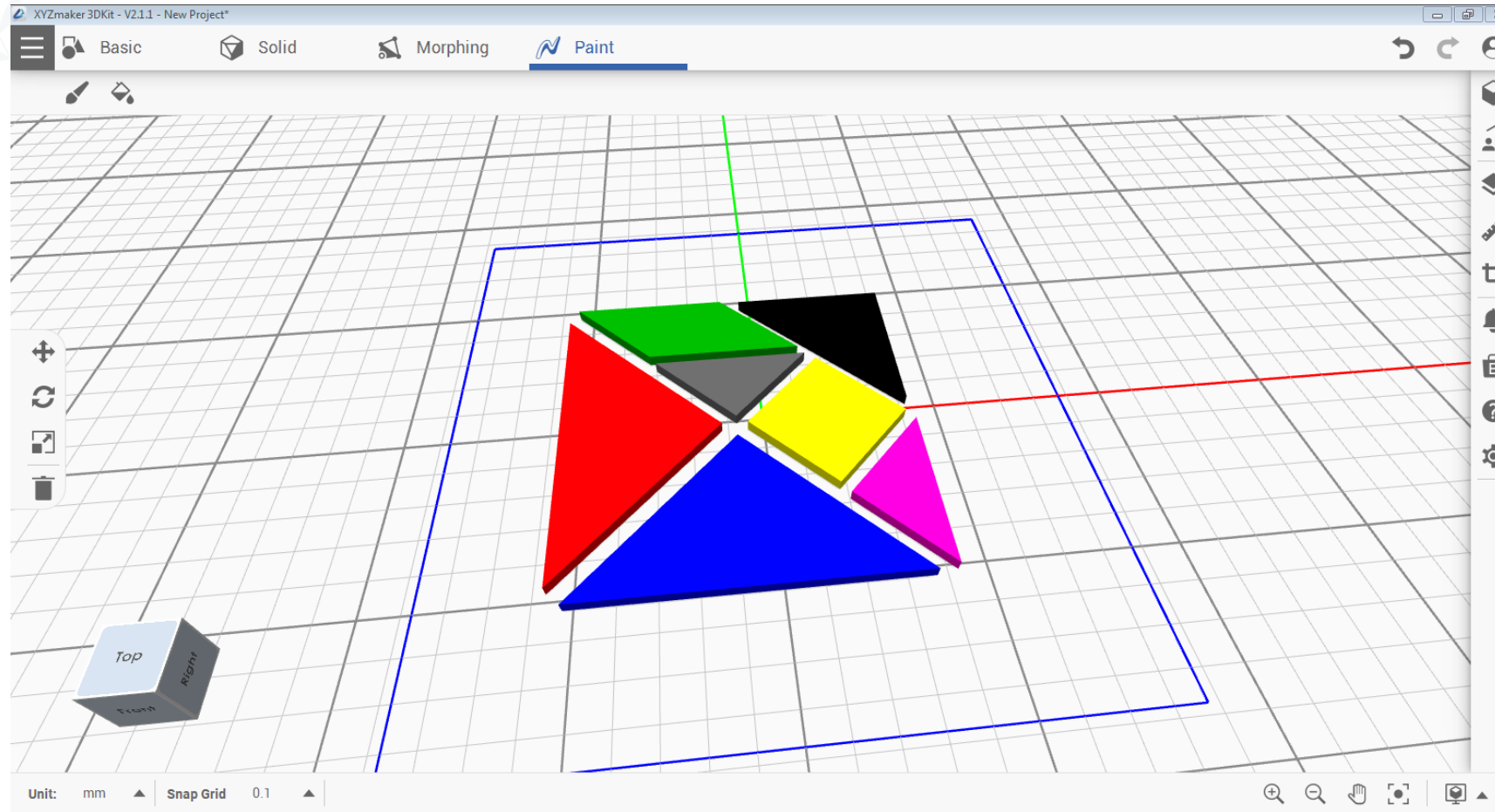


# Modeling - Create a Tangram

The tangram is not only able to create interesting shapes which full of beauty, but which fulfill with knowledge of math and geometry. It is capable of helping kids to develop their potential of creativity and reasoning ability.



# Modeling - Create a Tangram



[Tutorial Video](#)

# Pop quiz – Complete in Corelab

Which shape **DOES NOT** include in a tangram set?

- (A) Circle
- (B) Parallelogram
- (C) Triangle
- (D) Square.



# Pop quiz – Complete in Corelab

The Tangram involves the knowledge of...  
(Multiple Choice)

- (A) Engineering
- (B) Geometry
- (C) Math
- (D) Biology



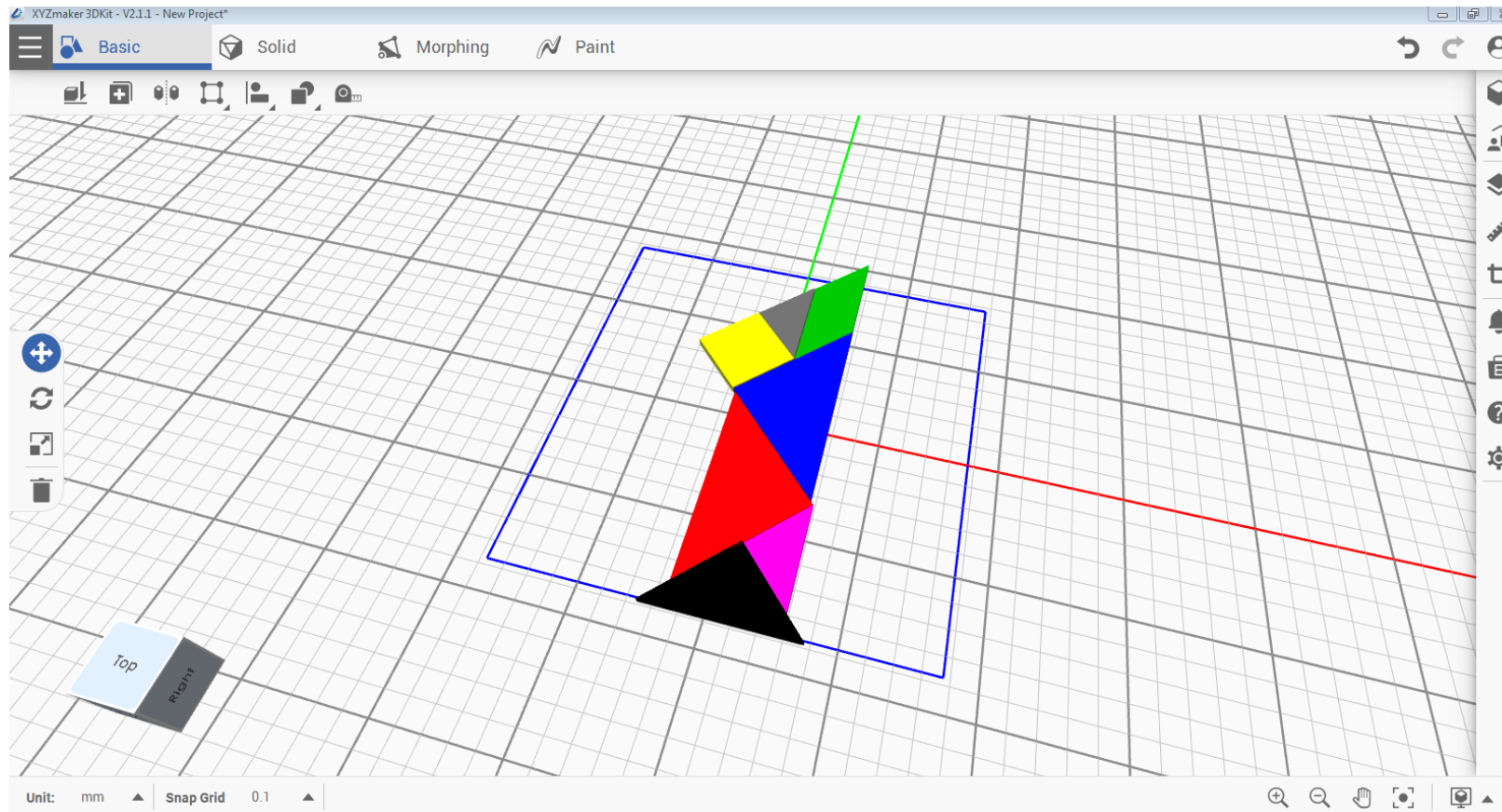
# Pop quiz – Complete in Corelab

Which function is hard to see in the elementary modeling software?

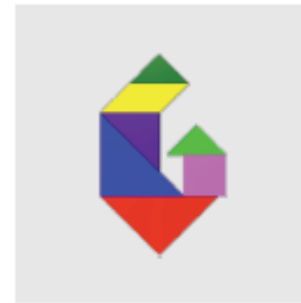
- (A) Move
- (B) 2D Sketch
- (C) Redo / Undo
- (D) Clone.



# Test - Assemble the number from 1-9

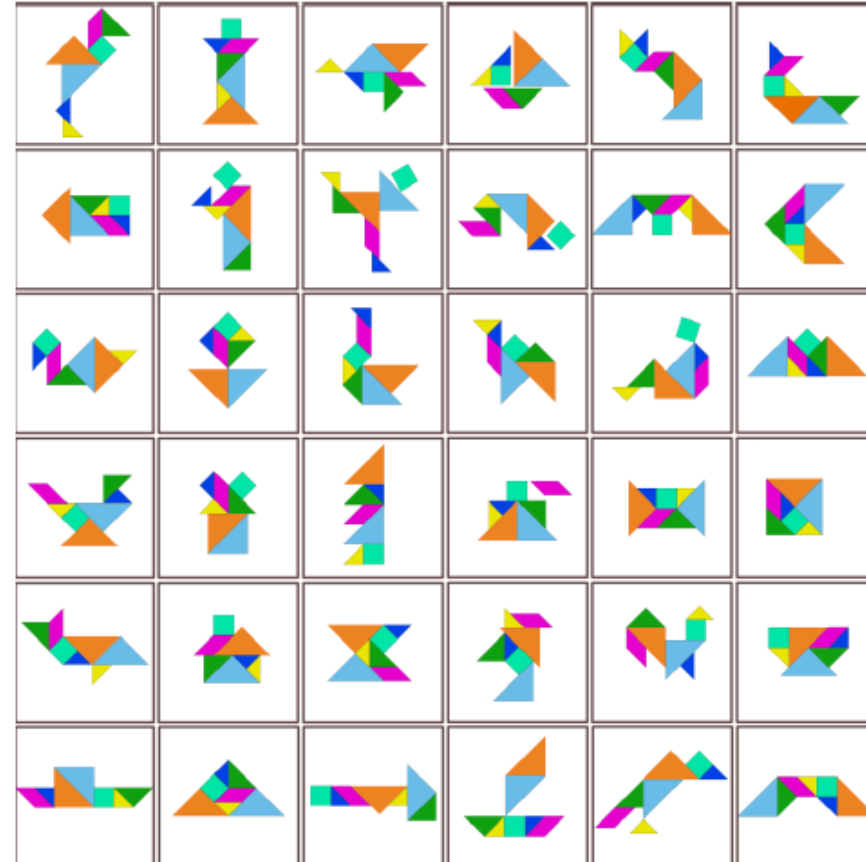
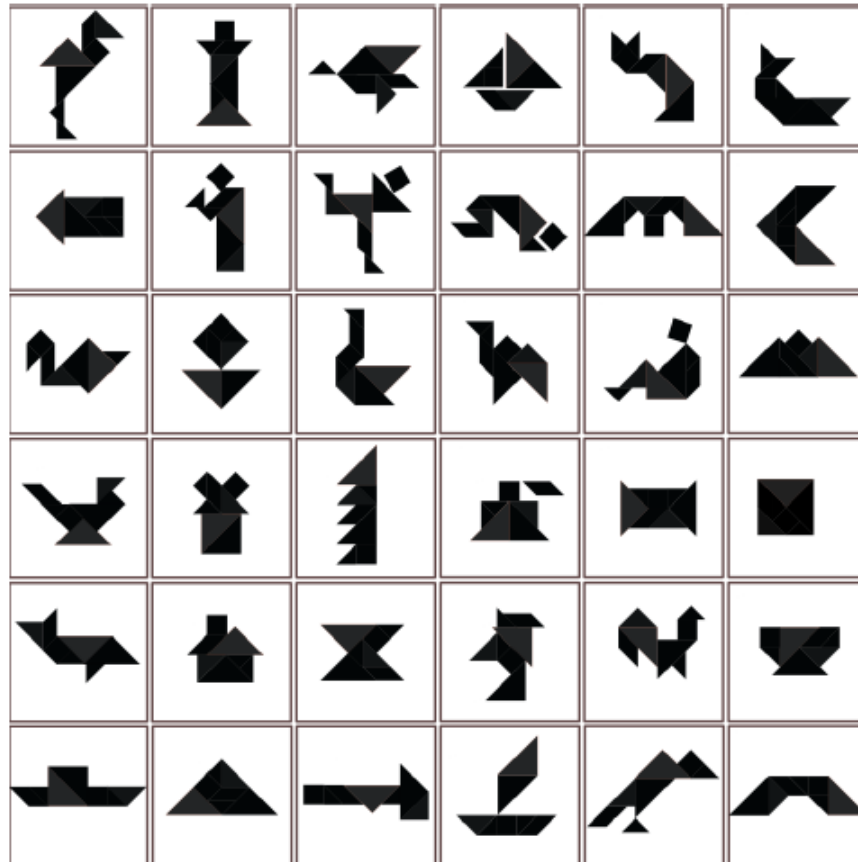


# Challenge: Create Tangram 1-9 shapes



# 3D Printing Tangram Challenge!

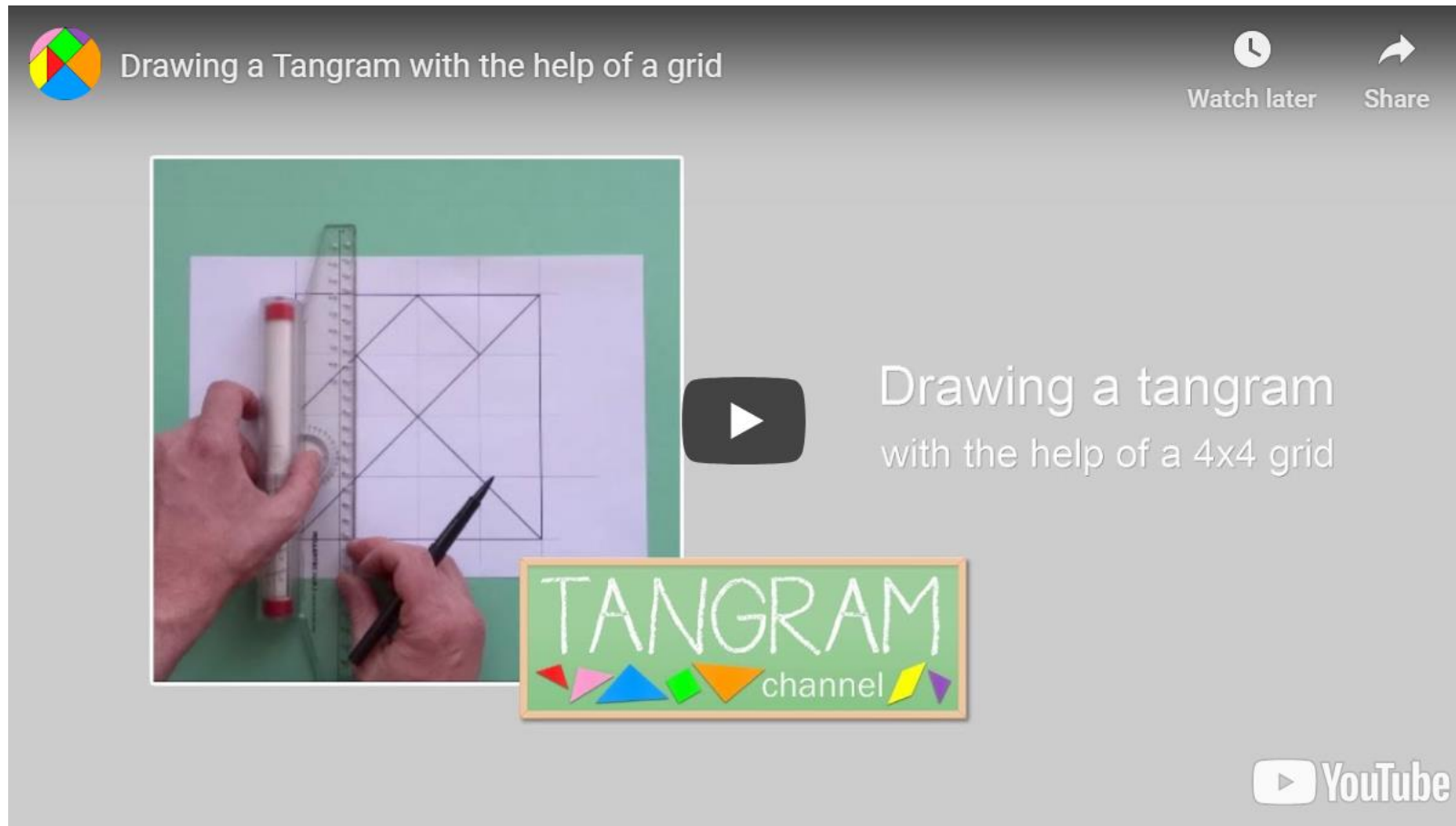
Try to create as many tangram as you can and post your results on our Facebook Group!



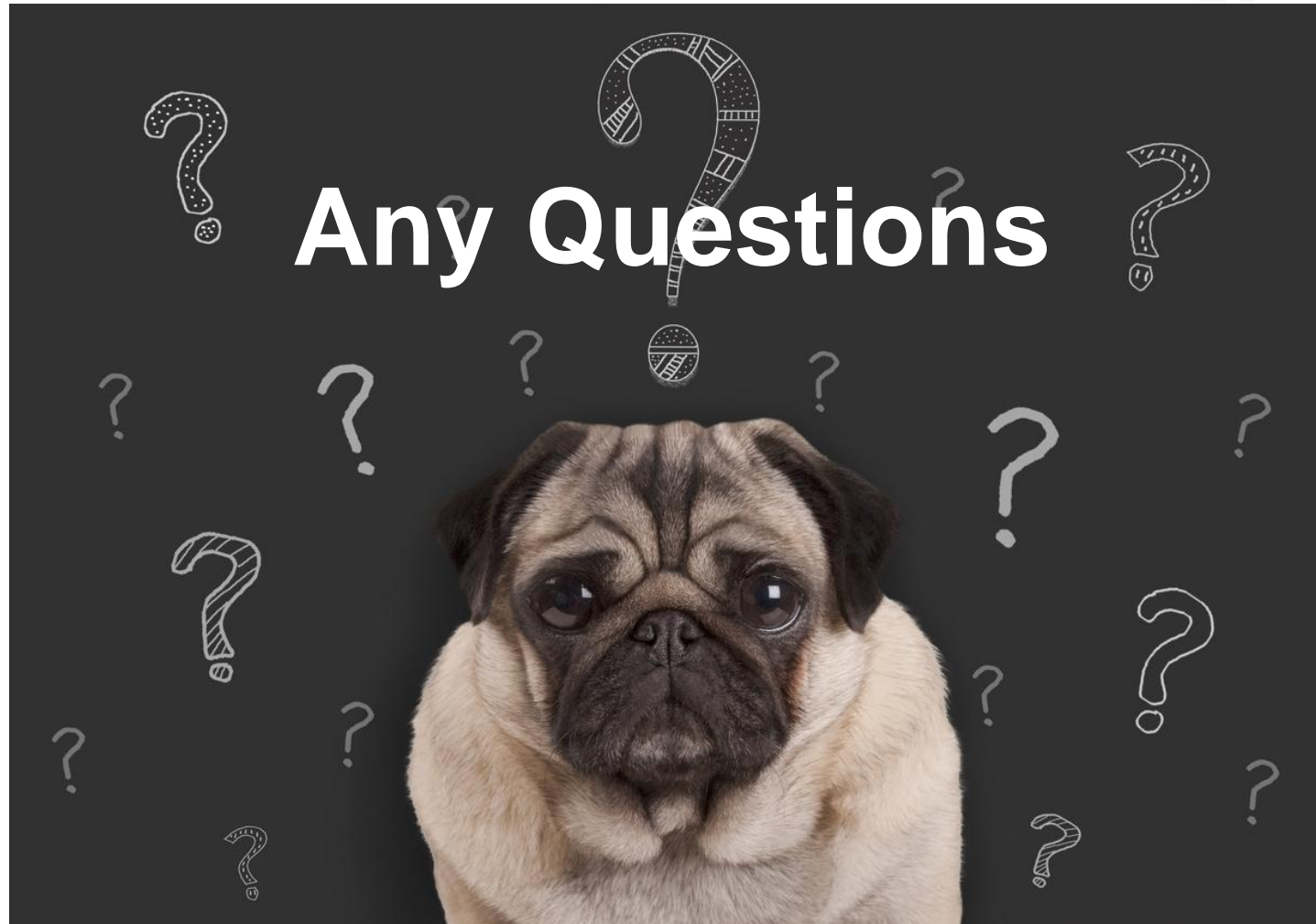


# Create your own Tangram at Home

You can use the 3D Kit software or use an A4 paper to explore and play with Tangram



<https://www.tangram-channel.com/crafts-activities/draw-your-own-tangram/>



# Preview the next lesson

- 3D Technology concepts introduction
- 3D printer and 3D Pen Cool operation
- 3D model design practice





# Thank You !

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