



# Which are the **STEAM-Lab tools?**

Technological equipment mixing FabLab, MediaLab and UserLab tools



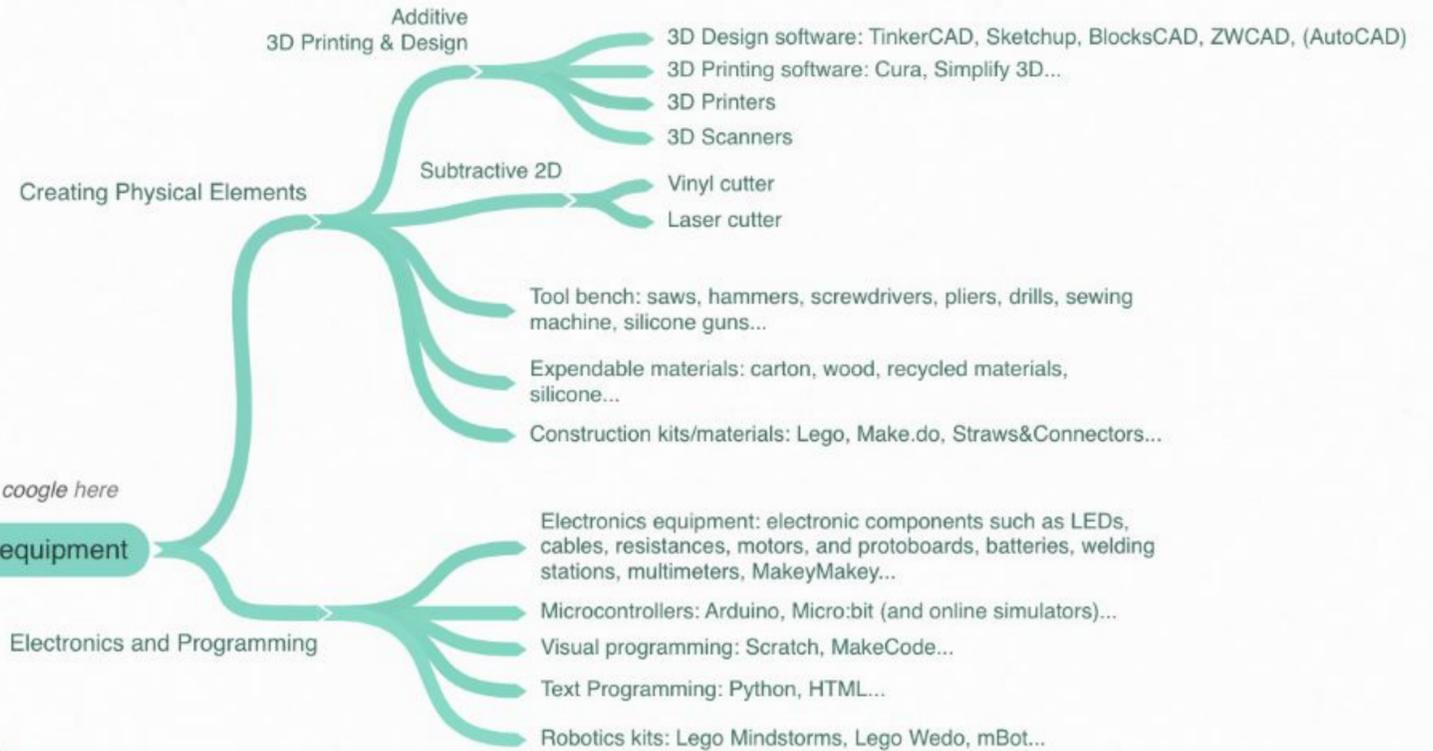
Playrooms and games, animals and  
plants, wood and nails... must take their  
place side-by-side with books and words

Angelo Patri (c.1920's)

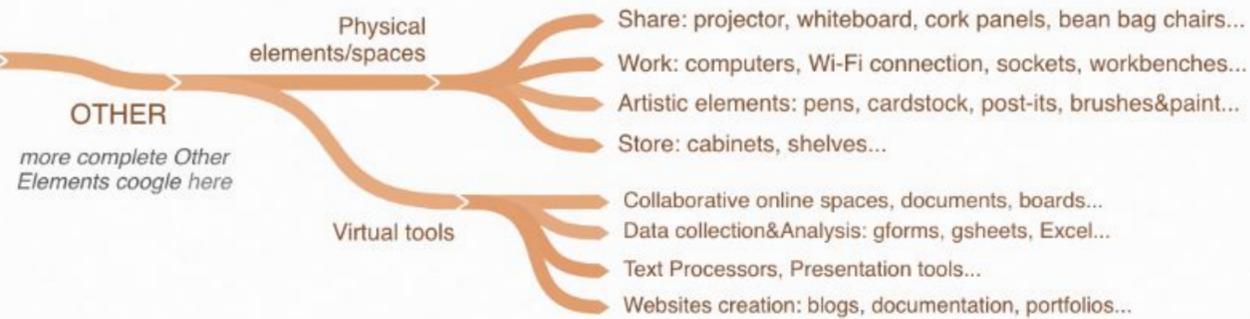
# STEAM-Lab Tools Map

## Inspired in FAB-Lab equipment

*more complete Fab-Lab coogle here*



## Technology in a STEAM-Lab ★



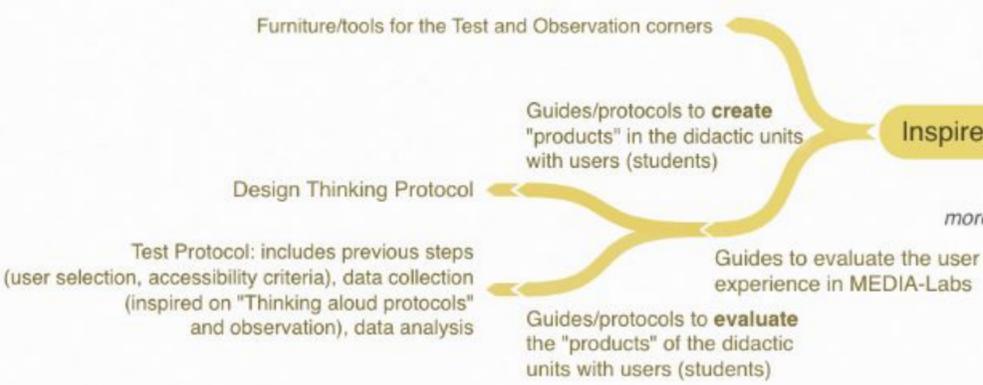
## Inspired in MEDIA-Lab equipment

*more complete Media-Lab coogle here*  
*software list here (points 2 and 5)*



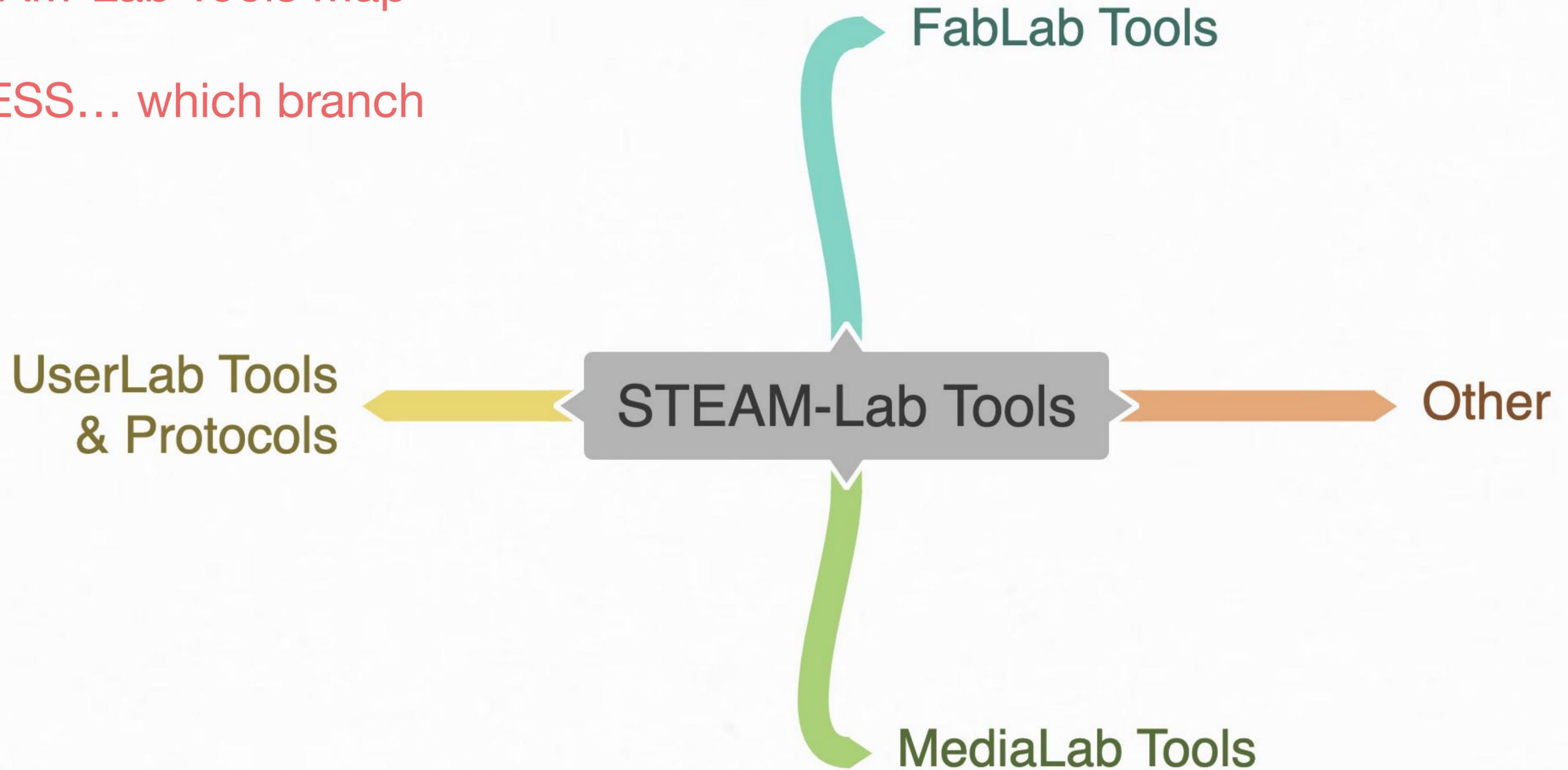
## Inspired in USER-Lab equipment

*more complete UserLab coogle here*

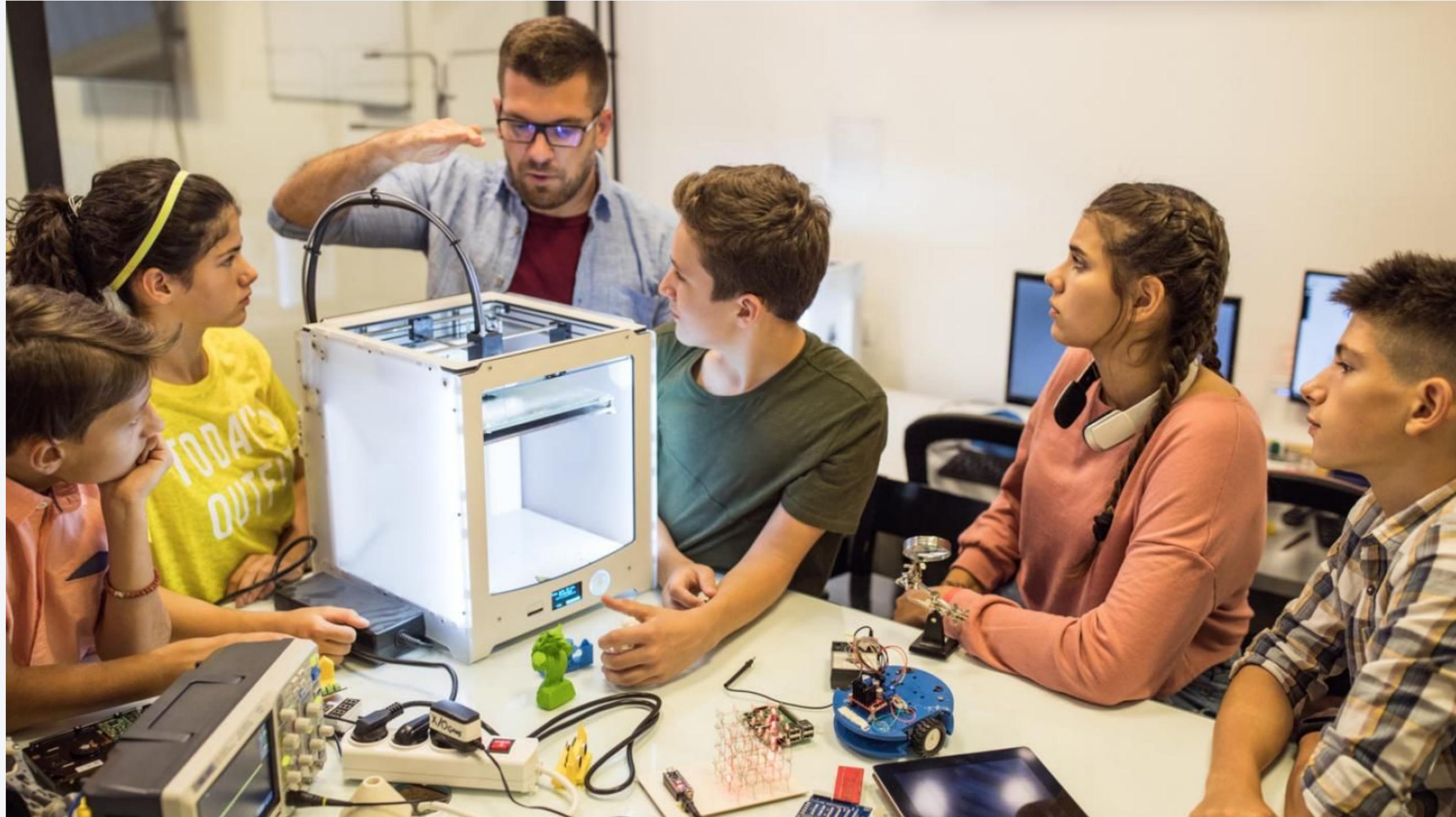


# STEAM-Lab Tools Map

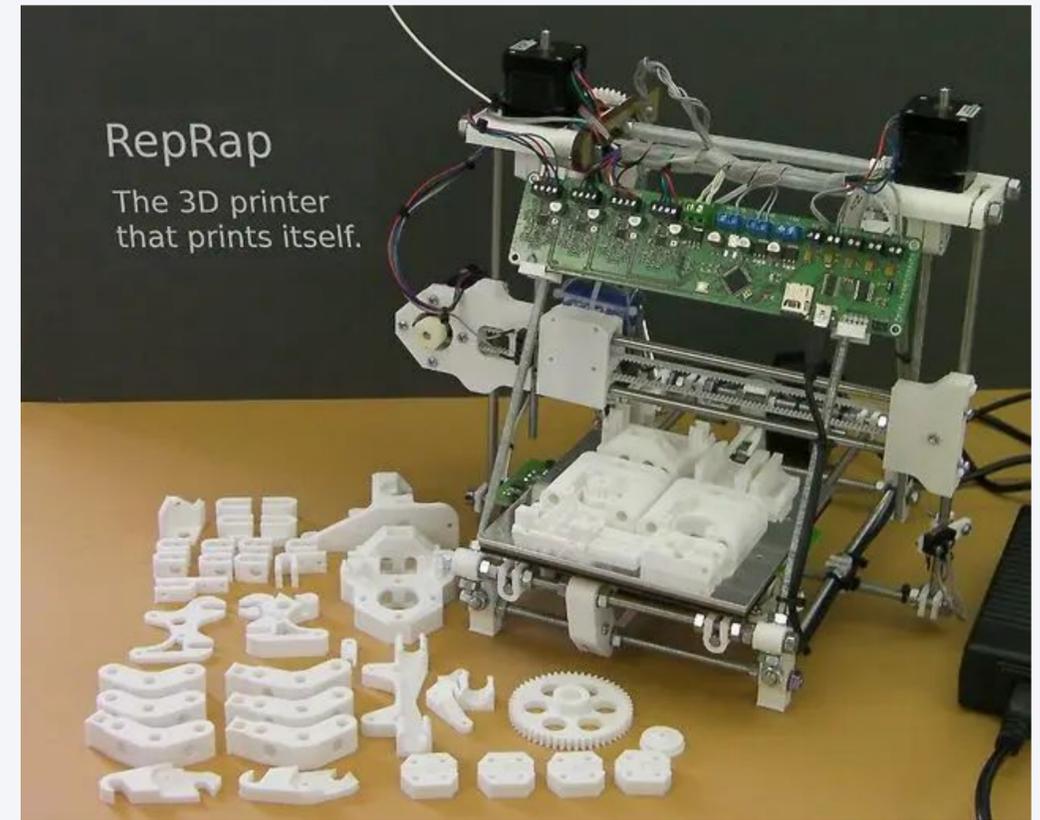
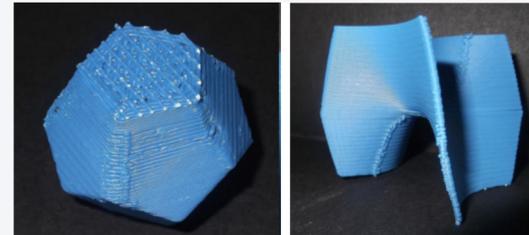
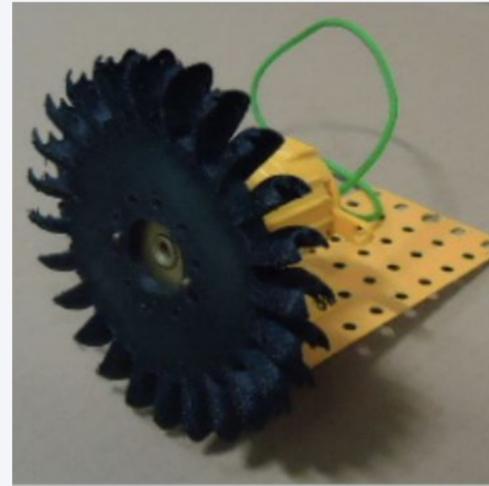
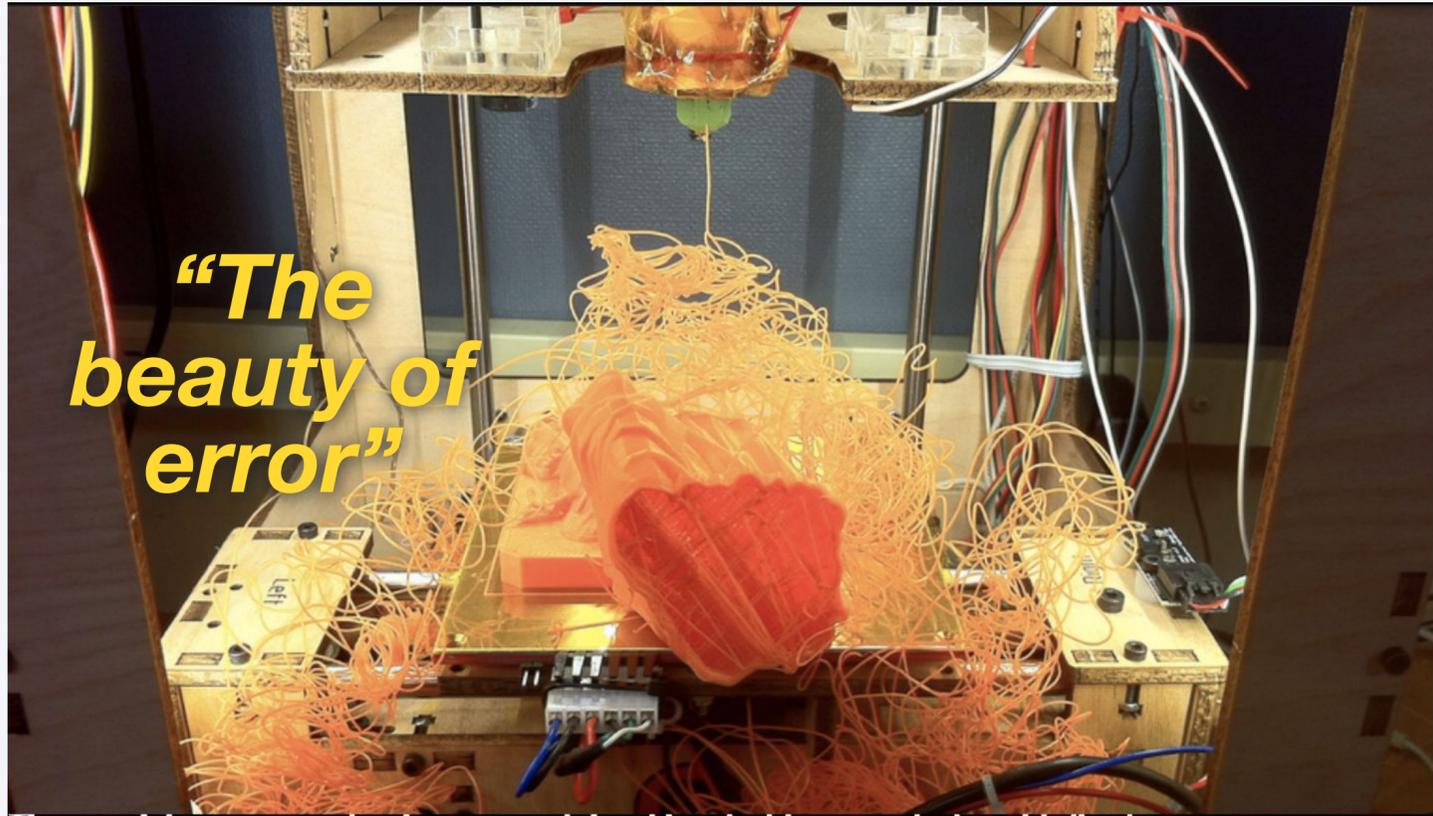
GUESS... which branch



GUESS... ¿name and branch of this tool?

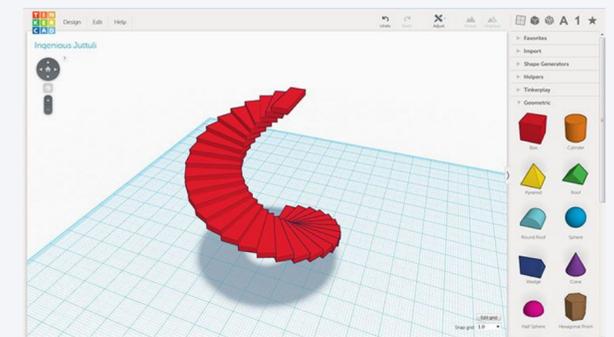


# 3D Printers

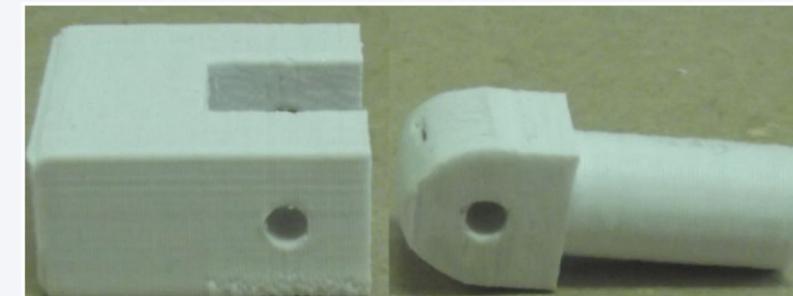
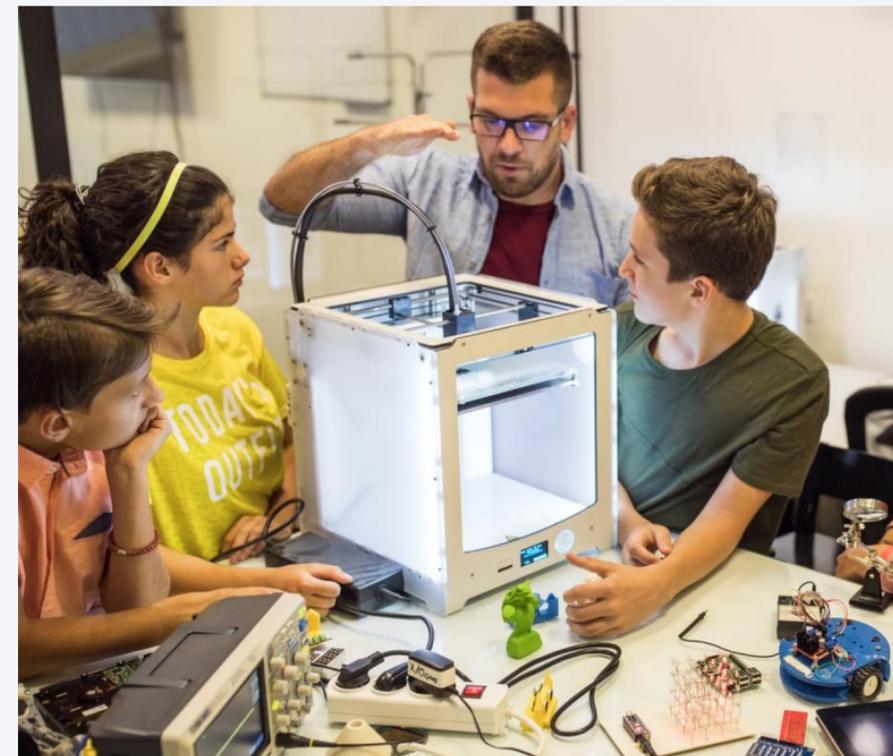
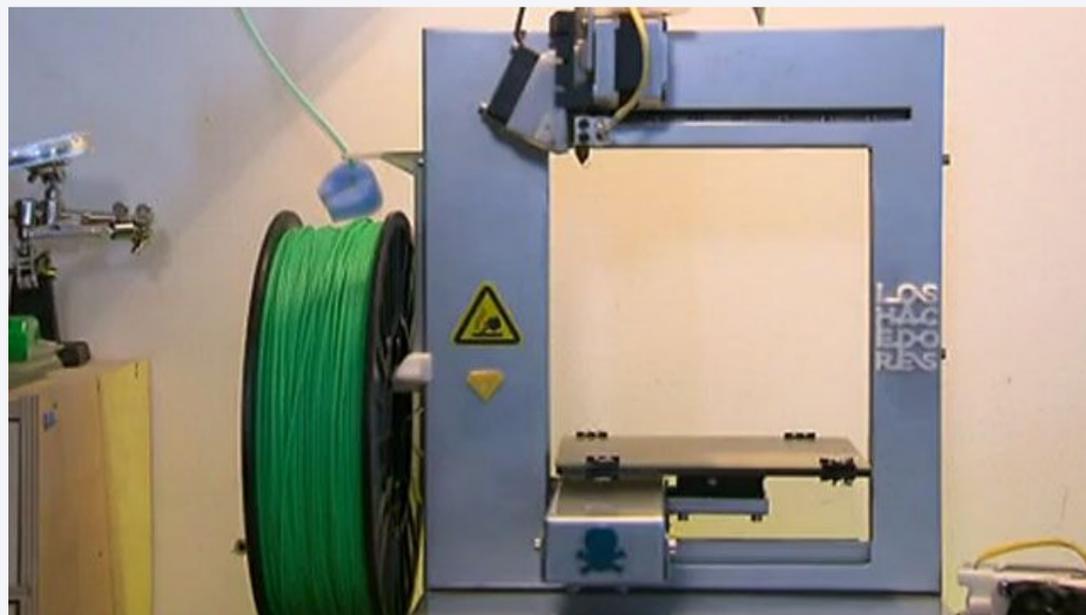


Source: <https://reprap.org/wiki/RepRap/es>

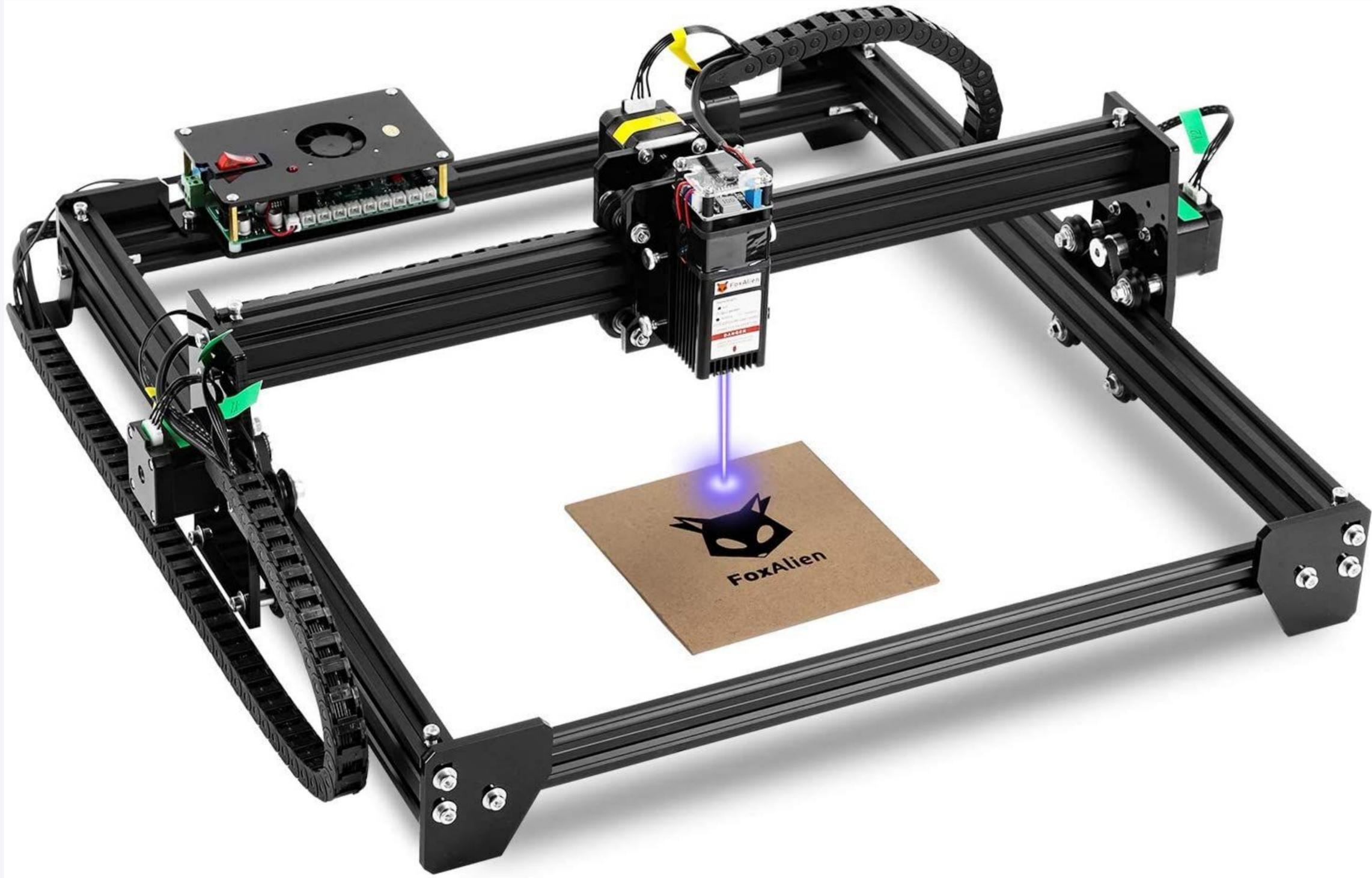
<https://www.gov.uk/government/publications/3d-printers-in-schools-uses-in-the-curriculum>



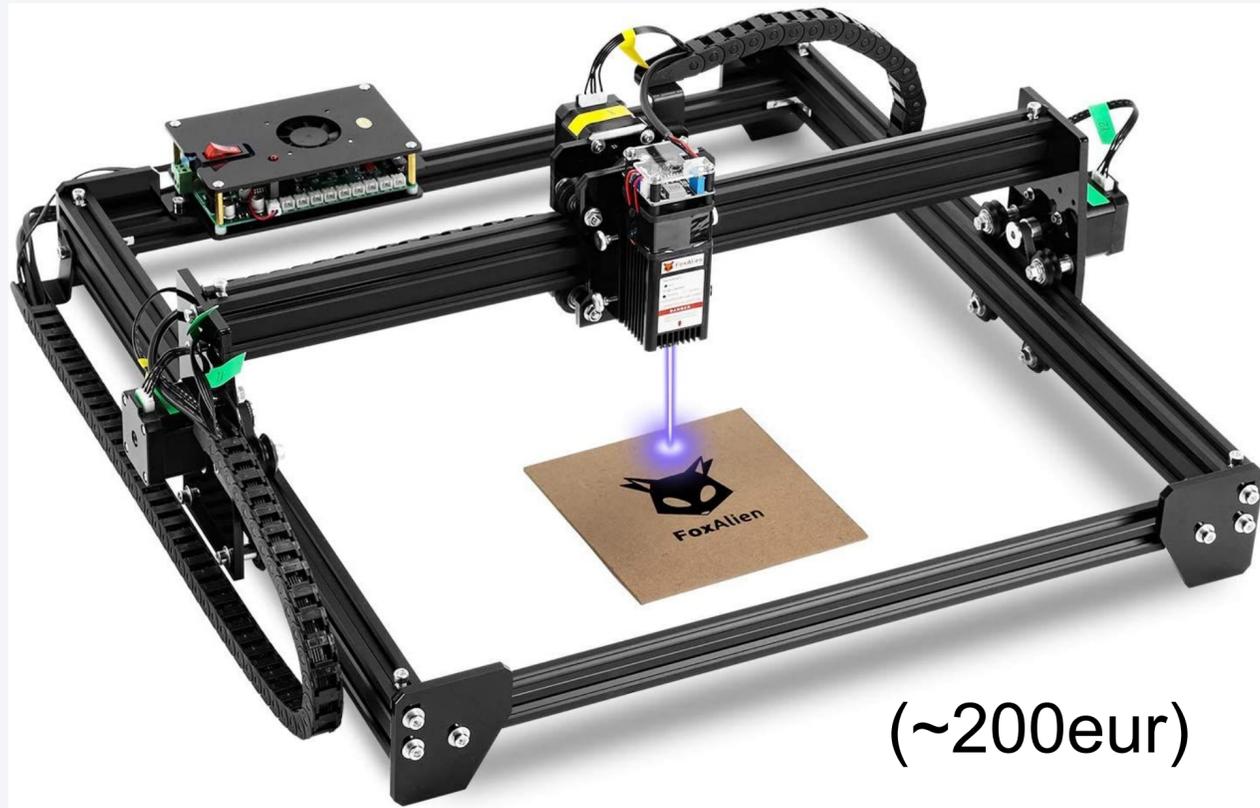
<https://www.3dnatives.com/en/3d-software-beginners100420174/>



GUESS... ¿name and branch of this tool?



## Similar Laser Cutters



(~200eur)



Epilog Mini/Trotec Speedy 1000 (>1000eur)



A4 cutter K40 (360€)

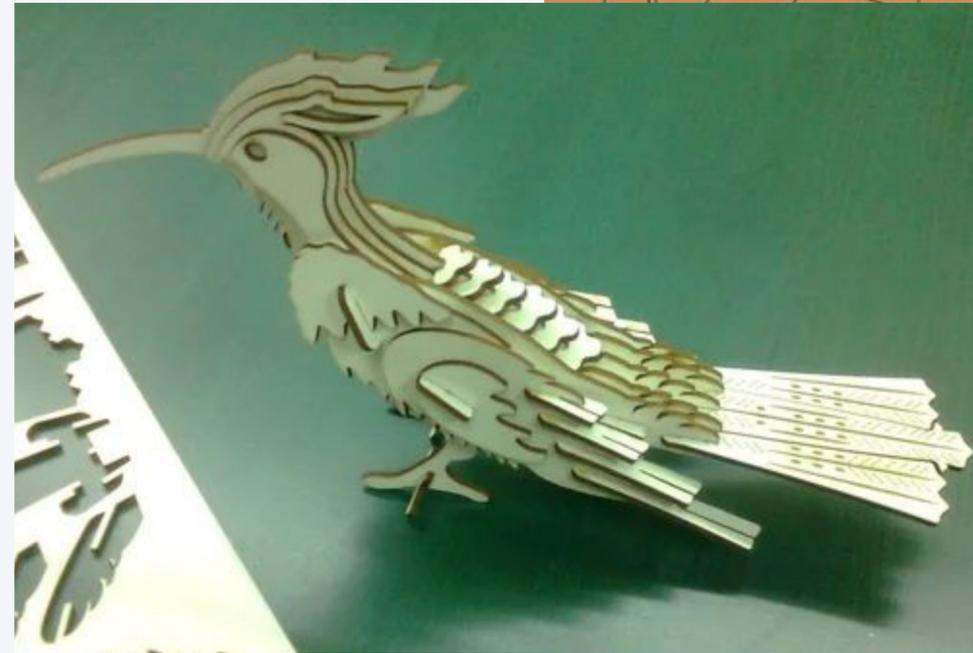


GCC LaserPro X252  
63 x 45 cms 7995€

# What can we do with Laser Cutter?



LAMINATED WOOD



PAPER

CARDBOARD



ENGRAVING



GUESS... ¿name and branch of this tool/material?



GUESS... ¿name and branch of this tool/material?



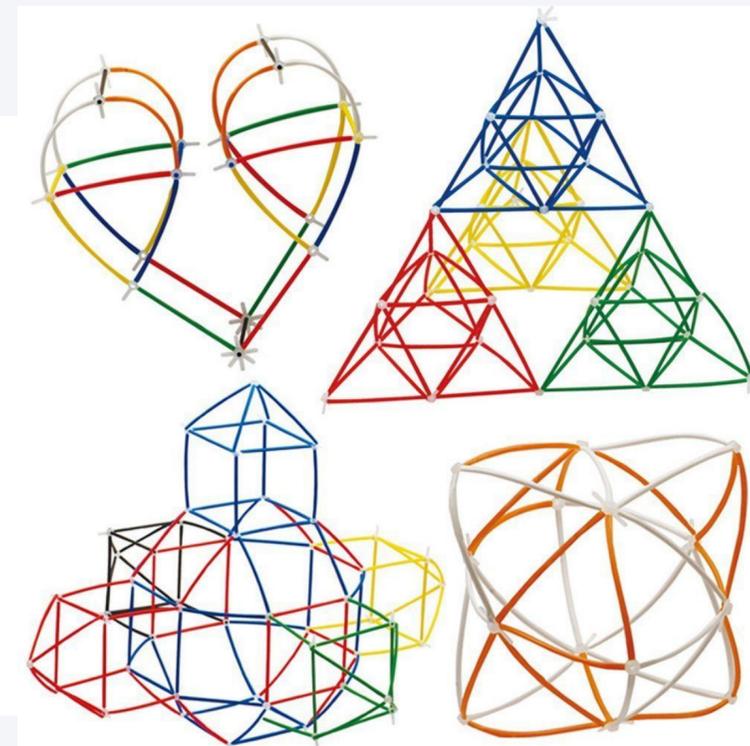
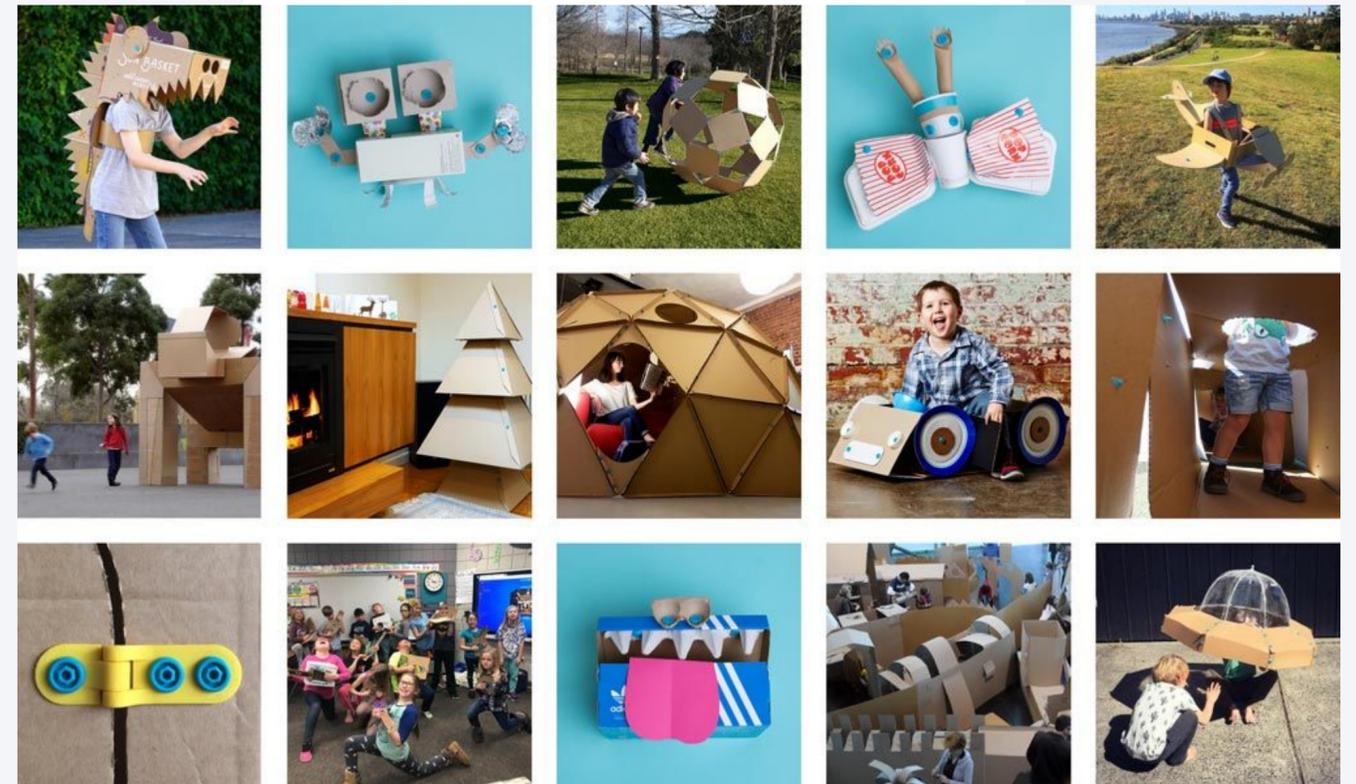
# What can we do with cardboard, expendable materials, silicone gun...?



Source: <https://www.polygon.com/gaming/2012/4/10/2938825/caines-arcade-video>

Source: <https://intertecheducation.edublogs.org/2018/08/16/still-inspired-by-caines-arcade/>

# Construction Kits



GUESS... ¿name and branch of this tool/material?



# Bench Tools and Power Tools



Portfolio School



Sewing Machine  
FaLab Devon

GUESS... ¿name and branch of this tool?



## Similar Vinyl Cutters

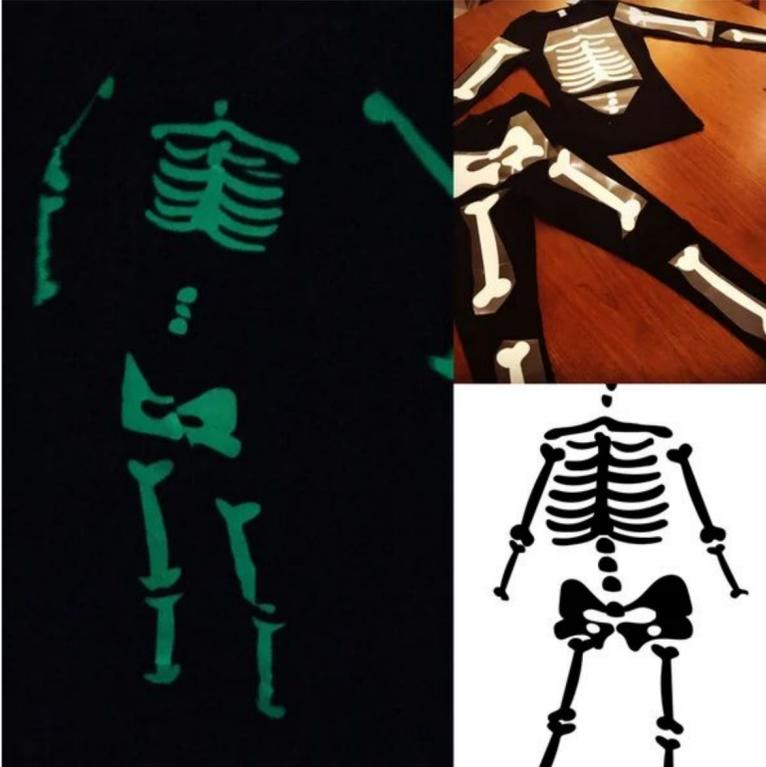


Roland CAMM  
(~1500eur)



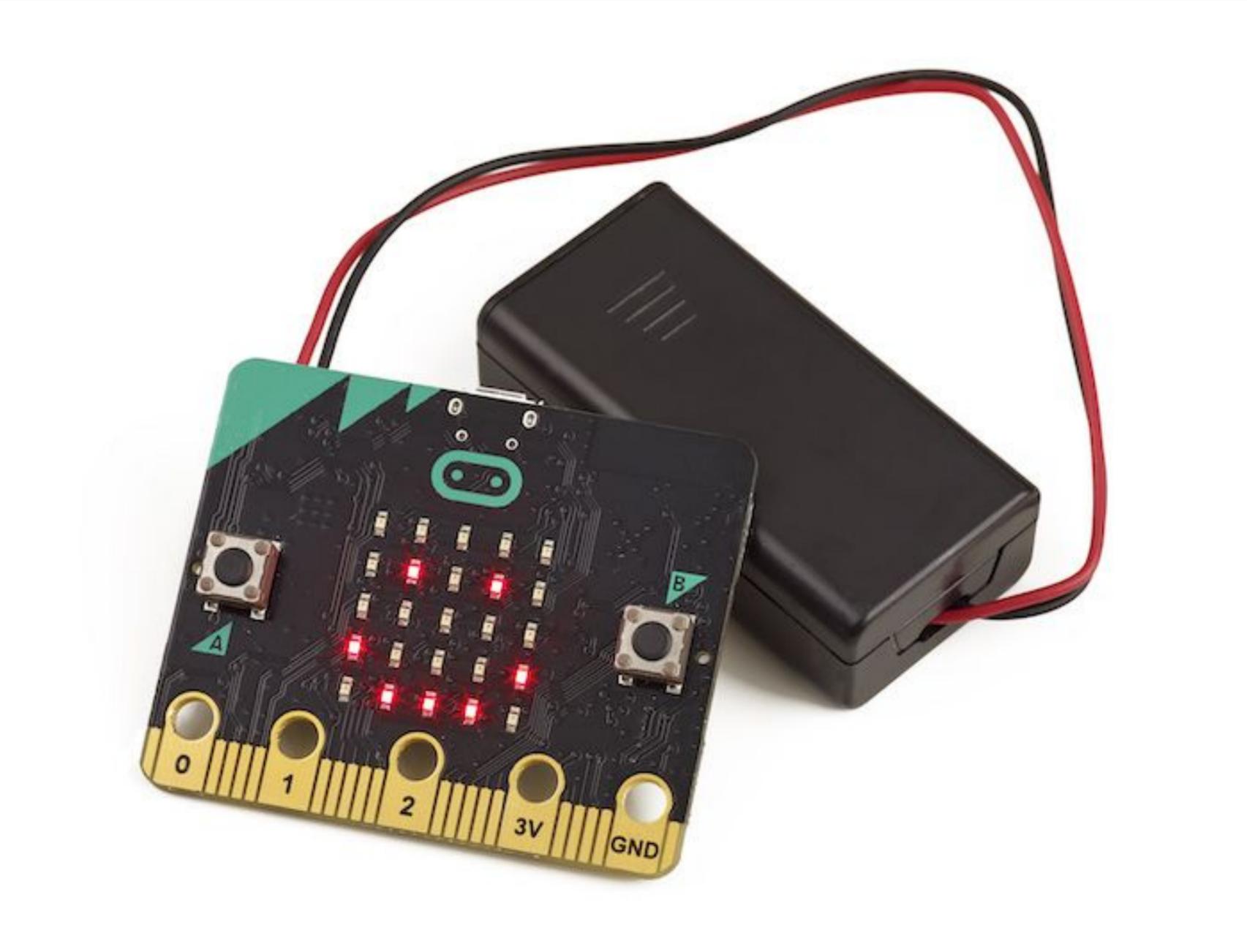
Silhouette Cameo  
(~300eur)

# What can we do with Vinyl Cutter?

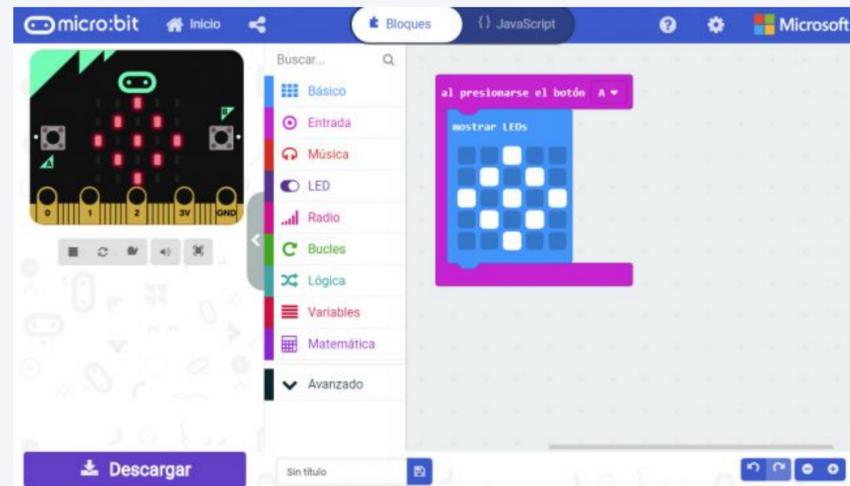
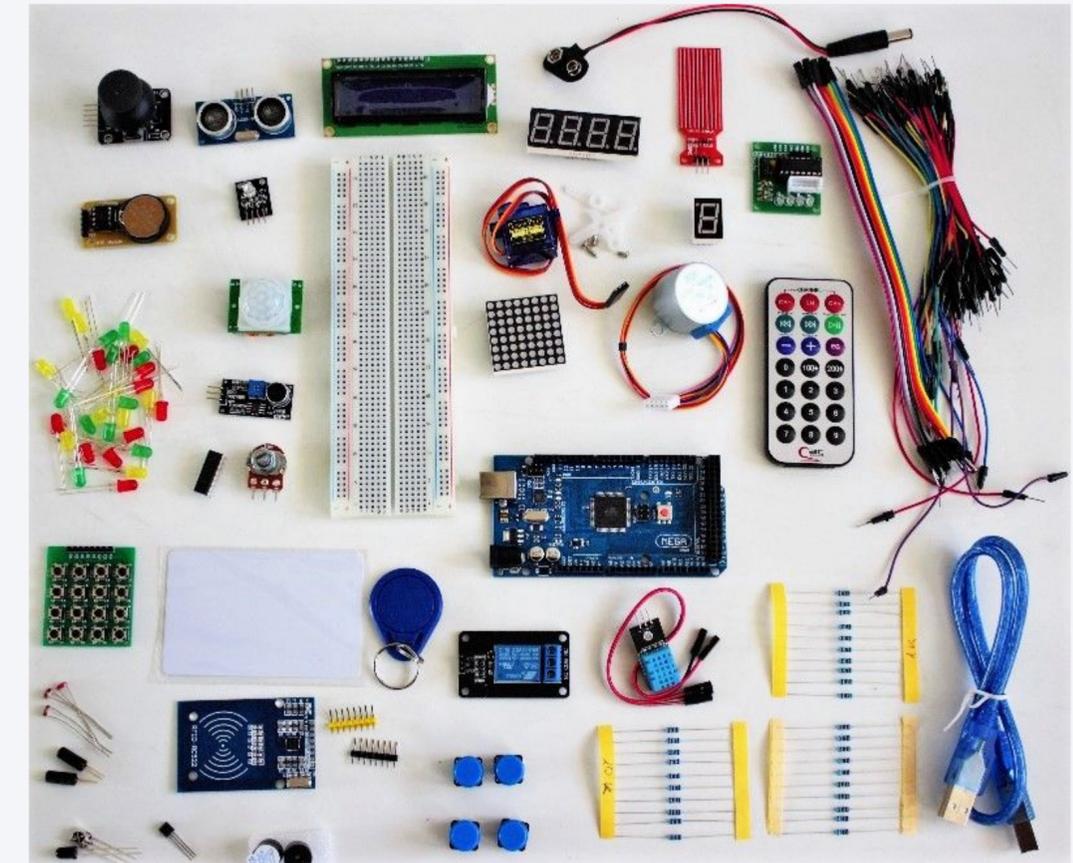
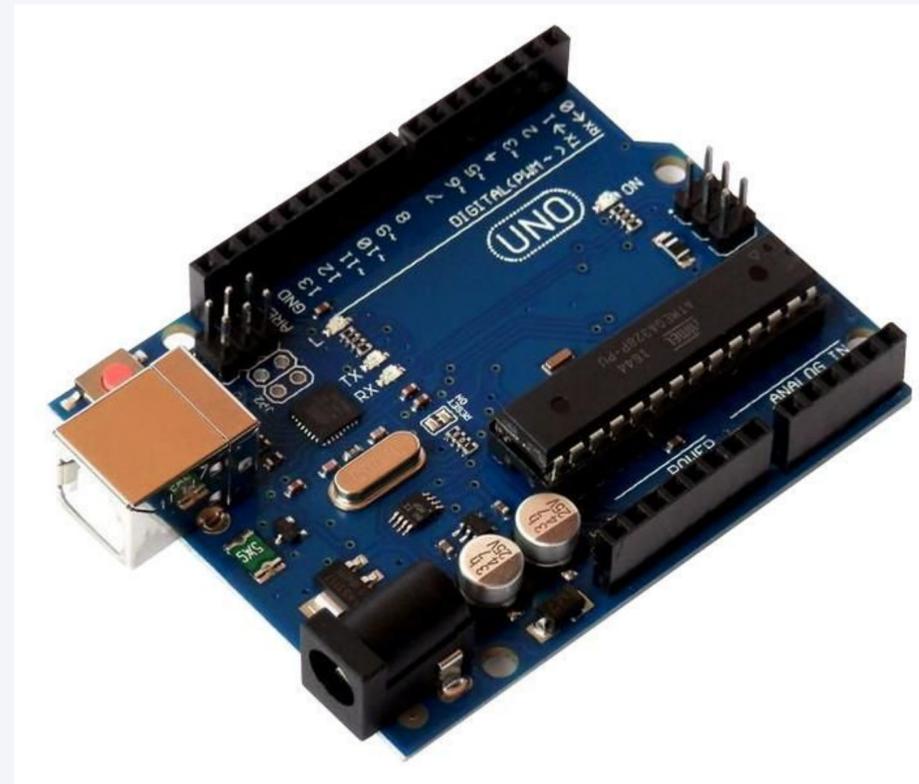
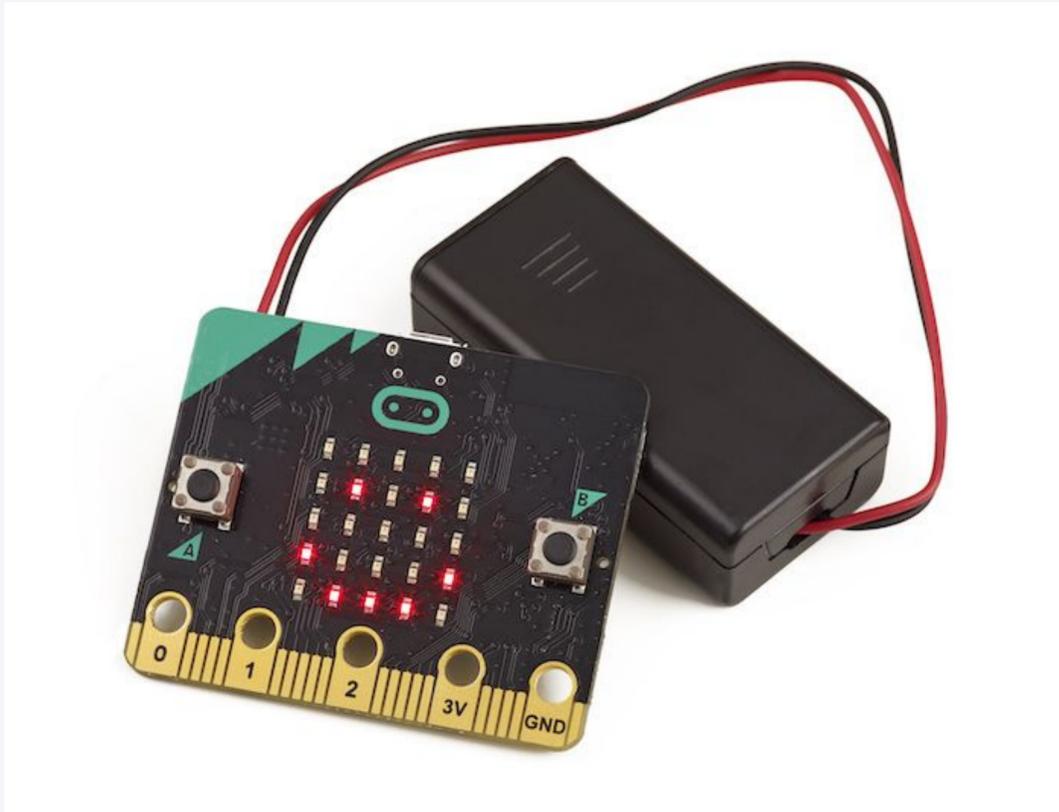


Source: Instructables.com

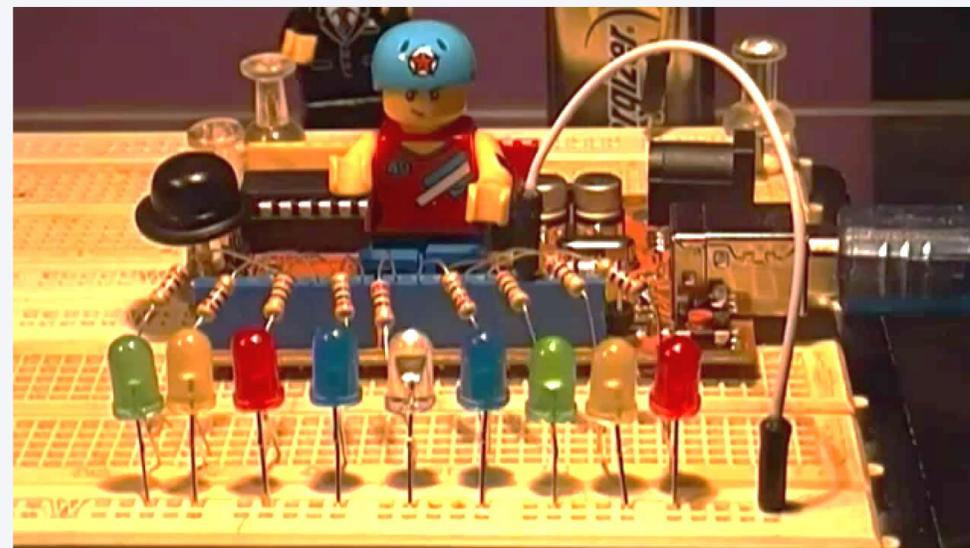
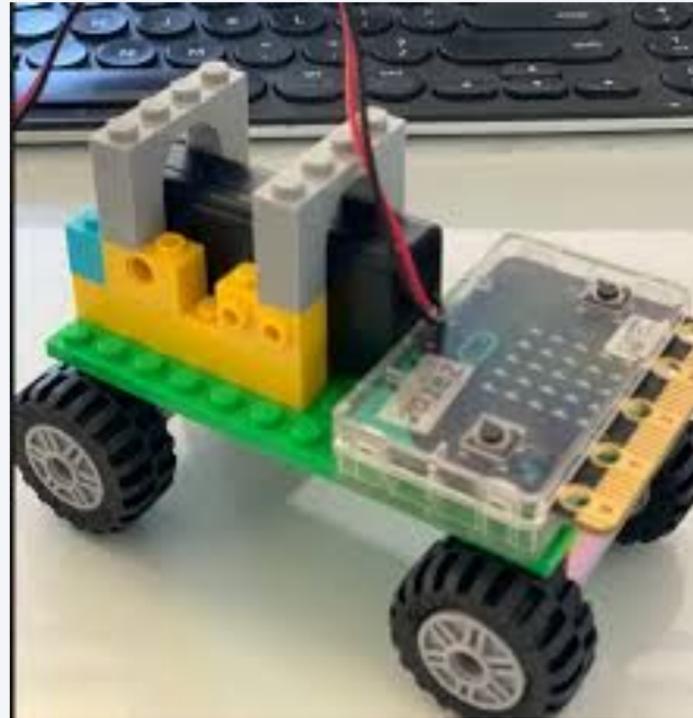
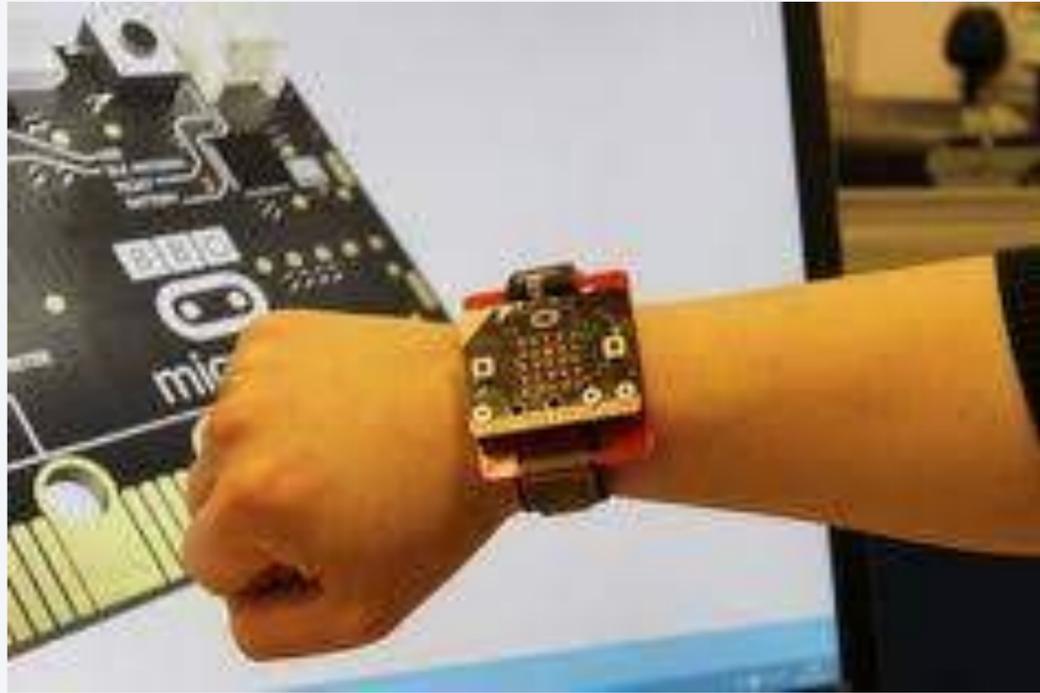
GUESS... ¿name and branch of this tool?



# Similar Microcontrollers & other robotic kits



# What can we do with Microcontrollers & robotics kits?



GUESS... ¿name and branch of this tool?



# What can we do with Vídeo, Audio, Photo...?



**PRINCIPALES ESTADÍSTICAS DEL EMAIL MARKETING**

El 98,7% de las personas que tienen una cuenta de email personal tienen el hábito de acceder a la herramienta a diario.

El 92,8% de los españoles abre la bandeja de entrada a diario por móvil y utiliza la mañana para su lectura, el mediodía para chatear, la tarde para utilizar apps y la noche para acceder a redes sociales y navegar en internet.

España es el mercado con el menor índice de emails no entregados o rebotados en campañas de e-mail marketing (1,92%).

Los datos de Hubspot muestran que el 50% de los usuarios entrevistados leen todos los mensajes de email que reciben.

El tiempo promedio consumido por un usuario que lee el email ha crecido de 10,4 segundos a 11,3 segundos en los últimos cinco años.

De acuerdo con informaciones del sitio Statista, el número de usuarios de email en todo el mundo debe alcanzar la marca de 2,900 millones hasta 2019. Eso significa casi un tercio de la población mundial.

Según datos de Campaign Monitor, el email es 40 veces más efectivo para la adquisición de nuevos clientes en comparación con otros canales, incluso con redes sociales como Facebook.

En 2016, el número de emails abiertos en dispositivos móviles aumentó un 56%.

El retorno financiero del email marketing puede llegar al 3.800%.

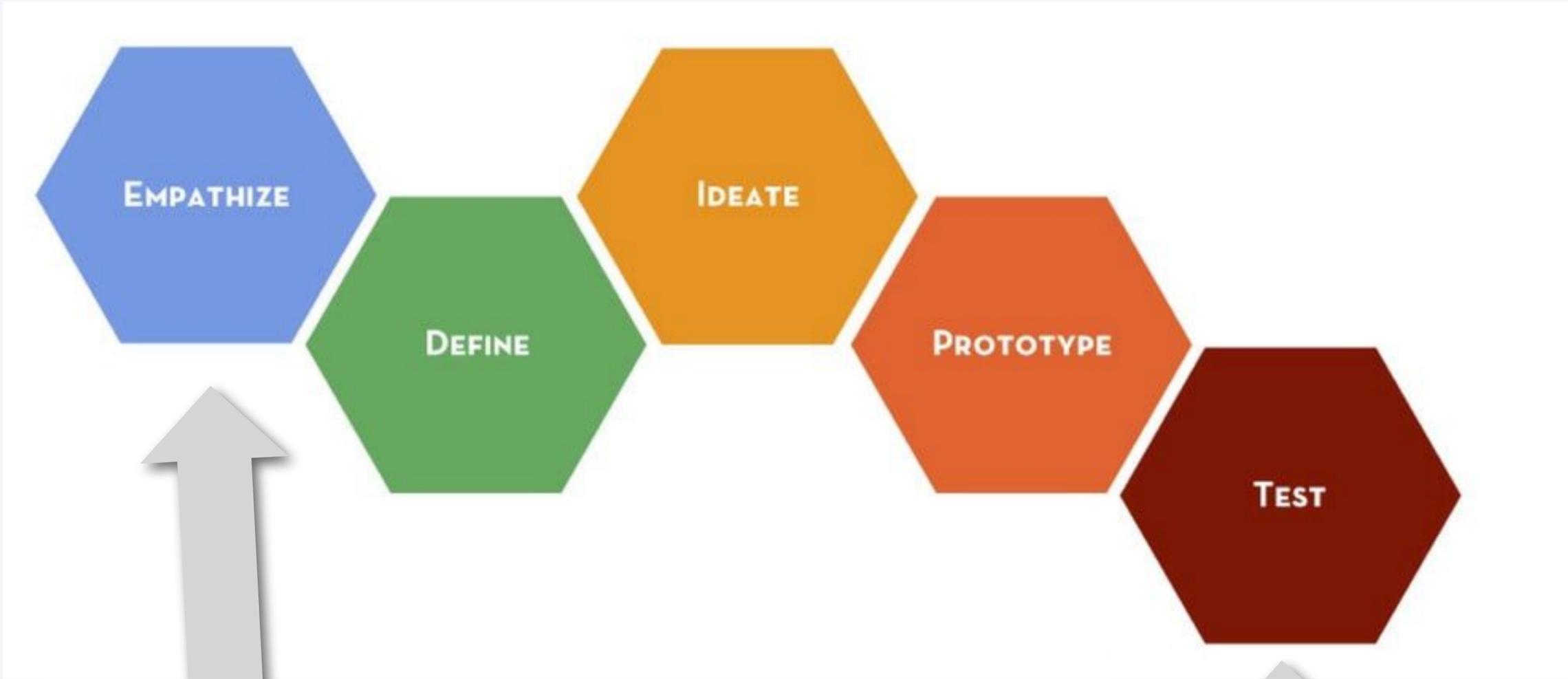
En los Estados Unidos, por cada dólar gastado en email marketing se generan otros 38 dólares.



GUESS... ¿name and branch of this tool/protocol?



# What can we do with User Testing protocols?



# What can we do with User Testing protocols?





**Before starting the next phase**  
**Why do we follow this stages?**

## ACTION PLAN: INTRODUCTION

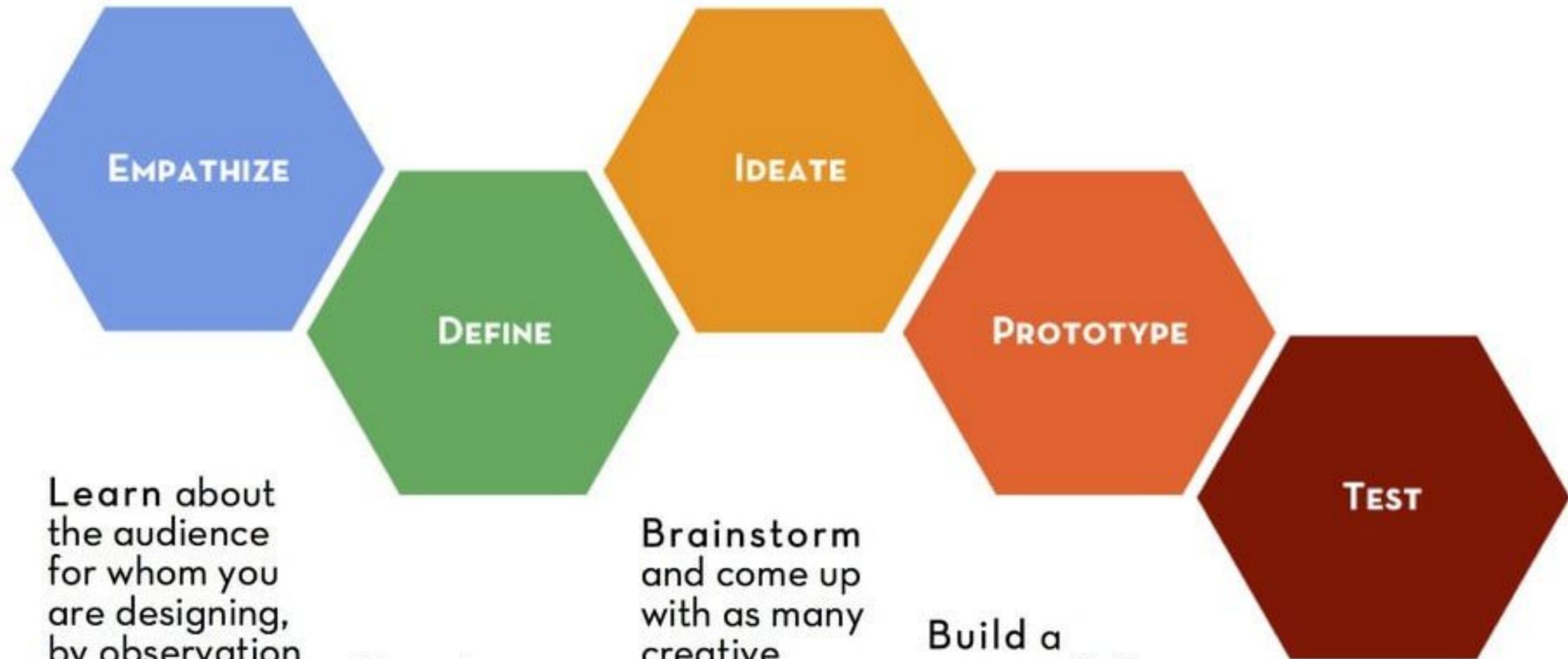
### ✓ **Our result:**

- Action Plan to create a STEAM-Lab in my School
- Next week we will share with colleagues in the training our Action Plan (“under construction”)

### ✓ **Our process:**

- You’ve already done “Contextualize Phase”
- Inspired in Design Thinking

# DESIGN THINKING PROCESS



Learn about the audience for whom you are designing, by observation and interview.  
*Who is my user? What matters to this person?*

Create a point of view that is based on user needs and insights.  
*What are their needs?*

Brainstorm and come up with as many creative solutions as possible.  
*Wild ideas encouraged!*

Build a representation of one or more of your ideas to show to others.  
*How can I show my idea? Remember: A prototype is just a rough draft!*

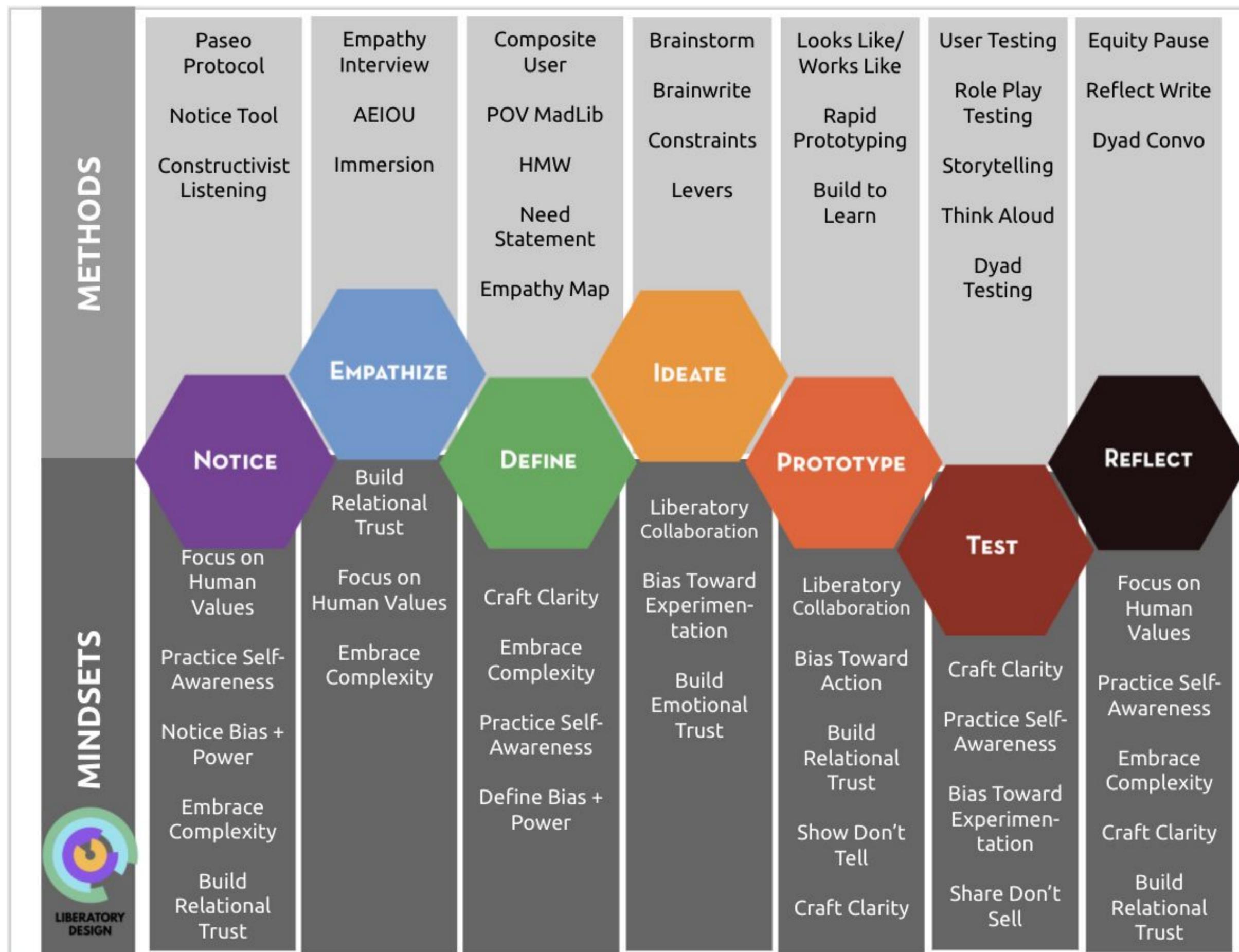
Share your prototyped idea with your original user for feedback.  
*What worked? What didn't?*

- ✓ Developed since 70s at Stanford University (California, USA)
- ✓ Creative methodology to build products, services and innovation
- ✓ Iterative learning
- ✓ Human-centered design

# DESIGN THINKING

✓ Each stage has its own methods/ techniques

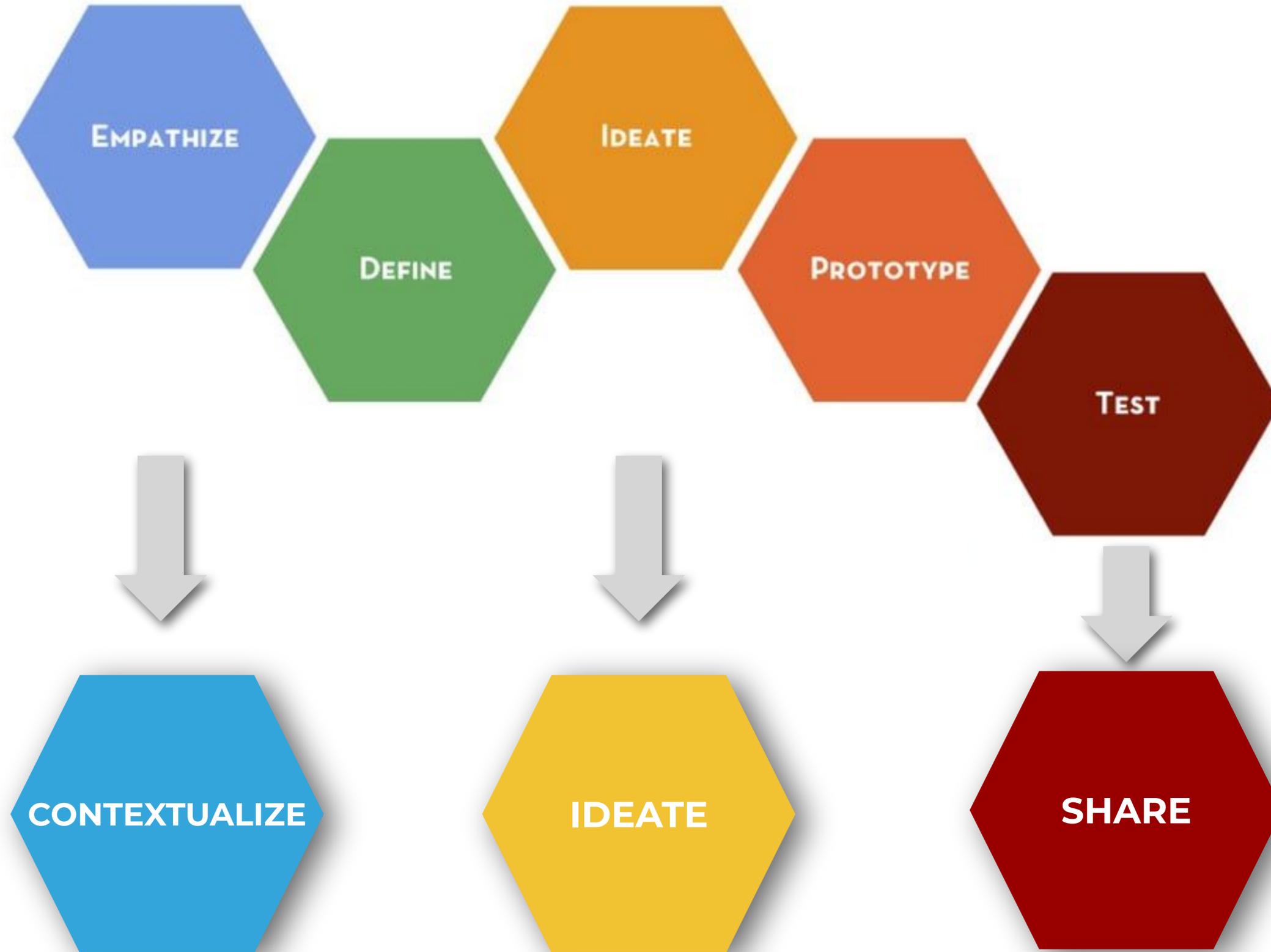
✓ And his mindsets



Source: <https://nochesdemedia.com/2020/09/06/recursos-para-aplicar-la-metodologia-de-design-thinking-a-tus-proyectos-parte-ii/>

# Our process to create the “STEAM-Lab Action Plan”

inspired in  
**Design  
Thinking**





# **Let's work on Ideate Phase**



Let's start to design  
**our STEAM-Lab Space**

