

# Co-thinking and Creation for STEAM diversity-gap reduction

2020-1-ES01-KA201-082601



Co-funded by the  
Erasmus+ Programme  
of the European Union

## Teacher Training

### IDEATE – CONTEXTUALIZE - REQUIREMENTS

Elena Jurado, Alicia García-Holgado, Roger Olivella,  
Francisco José García-Peñalvo, David Fonseca, Mónica  
Sánchez, Daniel Amo.

April 19<sup>th</sup>, 2021

Online documentation

<https://doi.org/10.5281/zenodo.5778978>



Co-funded by the  
Erasmus+ Programme  
of the European Union

The CreaSTEAM project (Ref.: 2020-1-ES01-KA201-082601) is co-financed by the Erasmus + program of the European Union. The content of publication is the sole responsibility of consortium and neither the European Commission, nor the Spanish Service for the Internationalization of Education (SEPIE) are responsible for the use that may be made of the information disclosed here

# Co-thinking and Creation for STEAM diversity-gap reduction

2020-1-ES01-KA201-082601



Co-funded by the  
Erasmus+ Programme  
of the European Union

## 1.- IDEATING THE STEAM-LAB



Co-funded by the  
Erasmus+ Programme  
of the European Union

The CreaSTEAM project (Ref.: 2020-1-ES01-KA201-082601) is co-financed by the Erasmus + program of the European Union. The content of publication is the sole responsibility of consortium and neither the European Commission, nor the Spanish Service for the Internationalization of Education (SEPIE) are responsible for the use that may be made of the information disclosed here

## STEAM-Lab Action Plan - PHASE 2: IDEATE

School:

Person:

Date:

### 2. IDEATE

#### 2.1. Proposal of the STEAM-Lab **space distribution and tools**.

##### 2.1.1. Attach the list of **tools** planned for 1, 2, 5 years.

You can find the tool's map at [https://coggle.it/diagram/X-Cy2\\_YZrx-l8zDJ/t/technology-in-a-steam-lab-star](https://coggle.it/diagram/X-Cy2_YZrx-l8zDJ/t/technology-in-a-steam-lab-star)

For 1 year (short term):

For 2 years (medium term):

For 5 years (long term):

##### 2.1.2. Draw the contour of the STEAM-Lab space of your school in MIRO and make a general **distribution** by zones of use and tools.

You can find an example at [https://miro.com/app/board/o9J\\_I0BhHOU=](https://miro.com/app/board/o9J_I0BhHOU=/)

### 2.2. Proposal of the STEAM-Lab **organization and management**.

#### 2.2.1. Write names and associated responsibilities/roles of the **steering committee**: teachers, students, families, other. Associated responsibilities.

2.2.2. Make a first draft of the **space management regulations**: schedules, rules of conduct, and security.

2.2.3. Write a first draft of **measurable goals** for 1, 2, 5 years for the STEAM-Lab space.

For 1 year (short term):

  
  

For 2 years (medium term):

  
  

For 5 years (long term):

2.2.4. Write a draft of continuous improvement or **sustainability** plan for the STEAM-Lab.  
(For example, it can include indicators of its use, teacher training plan, and resources to make it sustainable over time, dissemination plan, etc.)

2.2.5. Will there be sponsors, service or membership fees...?

2.2.6. How will you overcome the risks stated in the Action Plan - CONTEXTUALIZE 1.3?

(Write down a brief mitigation plan for the risks stated in the Action Plan - CONTEXTUALIZE 1.3)

2.3. **Pedagogical** proposal in the STEAM-Lab.

2.3.1. Think and write schematically. What kind of **projects, didactic units, activities or initiatives** will be developed in the STEAM-Lab, and their link with the curriculum? What is the flagship or star project that you want to promote or with which will you start? Will it be interdisciplinary? Will it promote creativity? Will it cover a social and inclusive approach, and the diversity challenges listed above?

2.3.2. Think and write. What **teaching/learning methodology** will be developed in the STEAM-Lab? Underline the option or options that best suit you.

Active Learning  
Project based Learning  
Personalization of learning and Inclusive environment  
Service-learning  
Collaborative learning  
Design Thinking methodologies  
Inquiry Based Learning  
Tinkering  
Others (indicate which ones)

2.4. Proposal of the **ecosystem** of the STEAM-Lab.

2.4.1. Think about how the STEAM-Lab will **interconnect** with the community (families, local industry, educational platforms, other STEAM-Labs, etc.).

Students and the educational community are involved in the co-creation of the space and related projects? The school has strong connections with families, local industry, other educational platforms? Consider also creating facebook, twitter or blog page for your users.

# Co-thinking and Creation for STEAM diversity-gap reduction

2020-1-ES01-KA201-082601



Co-funded by the  
Erasmus+ Programme  
of the European Union

## 2.- CONTEXTUALIZING THE STEAM-LAB



Co-funded by the  
Erasmus+ Programme  
of the European Union

The CreaSTEAM project (Ref.: 2020-1-ES01-KA201-082601) is co-financed by the Erasmus + program of the European Union. The content of publication is the sole responsibility of consortium and neither the European Commission, nor the Spanish Service for the Internationalization of Education (SEPIE) are responsible for the use that may be made of the information disclosed here

## Action Plan STEAM-Lab - PHASE 1: CONTEXTUALIZE

School:

Name of the person who fills the document:

Date:

### 1. CONTEXTUALIZE

1.1. What is the **mission** of developing a STEAM-Lab at your school?

--

1.2. Reflect on the context in your school and in the educational environment. Broadly speaking, what groups of **users** do you envisage in the STEAM-Lab and what related **needs** do you want to cover with the STEAM-Lab?

USERS	NEEDS

1.3. Reflect on possible **Gains** and **Risks** of the creation of the STEAM-Lab.

GAINS	RISKS

1.4. What **diversity** and inclusion challenges do you want to work on within the STEAM-Lab?  
Underline the option or options that best suit in your school.



Diversity (gender gap)  
Diversity (economics - social classes, etc.)  
Diversity (immigration - language, etc.)  
Diversity (disabilities - ADHD, etc.)

**1.5. Current resources** that are available: Reflect on the resources that you currently have to set up a STEAM-Lab at school: Do you have a space? Are there people interested in your school that could form a steering committee? Are there currently technological tools that you plan to include in the STEAM-Lab? Do you have the possibility of acquiring equipment for the STEAM-Lab?

You can copy the current tools indicated in the Questionnaire\_StartingPoint\_STEAM-Lab at <https://drive.google.com/file/d/1uwdvE-Gb0sFB0yxGoYX3hPMKYAXPctZg/view?usp=sharing>

Space (attach current photos of the space):

Responsible and Steering Committee:

Current tools:

Do you have possibilities of acquiring new equipment for the STEAM-Lab ?:

**1.6. Get inspired:** Copy below 3 images that could inspire you for the STEAM-Lab at your school. We invite you to search for them through Pinterest, Google Image search, FreePik; using "STEAM-Lab", "FabLab", "Maker Space" as the search term.

A large, empty rectangular box with a black border, intended for pasting three images that inspire the student for their STEAM-Lab.

# Co-thinking and Creation for STEAM

## diversity-gap reduction

2020-1-ES01-KA201-082601



Co-funded by the  
Erasmus+ Programme  
of the European Union

### 3.- REQUIREMENTS of STEAM-LAB (check-list)



Co-funded by the  
Erasmus+ Programme  
of the European Union

The CreaSTEAM project (Ref.: 2020-1-ES01-KA201-082601) is co-financed by the Erasmus + program of the European Union. The content of publication is the sole responsibility of consortium and neither the European Commission, nor the Spanish Service for the Internationalization of Education (SEPIE) are responsible for the use that may be made of the information disclosed here



Co-funded by the  
Erasmus+ Programme  
of the European Union

## Minimum Requirements STEAM-Lab Checklist

Underline YES or NO

School: \_\_\_\_\_

### School Infrastructure

- Separate space YES/NO
- Integrates students, promotes inclusion YES/NO
- Access to technology and equipment YES/NO

### Curricula Implementation

- Emphasis on STEM subjects (Science, Technology, Engineering, Mathematics) YES/NO
- Interdisciplinary learning YES/NO
- Emphasis on creativity YES/NO
- Addresses diversity gap YES/NO

### Pedagogical Approach

- Active learning YES/NO
- Project based learning YES/NO
- Personalisation of learning and Inclusive environment YES/NO
- Service-learning YES/NO
- Collaborative learning YES/NO
- Inquiry Based learning YES/NO
- Design Thinking methodologies YES/NO
- Tinkering

### Results

- Interdisciplinary and inclusive didactic units, projects, challenges YES/NO
- Measure and share impact.- Document and share learning processes. YES/NO

### School Culture

- School leadership YES/NO
- High level of cooperation among staff YES/NO
- Inclusive culture YES/NO
- Students and the educational community are involved in the co-creation of the space and related projects. YES/NO
- The school has strong connections with families, local industry, other educational platforms. YES/NO