

# STEAM IS FOR ME: A PERSONAL GUIDE (O3)

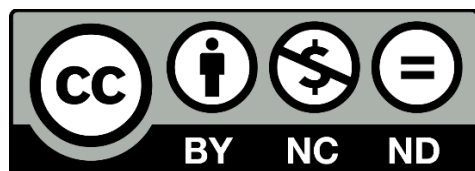
AN ONLINE PERSONAL GUIDE FOR SELF-TRAINING AND  
EMPOWER PUPILS AGED 10-14



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

*The STEAM4U project has been supported by the Erasmus+ programme of the European Union  
(Project reference 2016-1-ES01-KA201-025633).*

*However, the European Commission support for the production of this publication does not  
constitute an endorsement of the contents which reflects the views only of the authors, and the  
Commission cannot be held responsible for any use which may be made of the information  
contained therein.*



“STEAM is for me, a personal guide” has been edited by CRECIM – Centre for Research in Science and Mathematics Education.

Is distributed by a Creative Commons license

Attribution - Non Commercial - No Derivatives 4.0 International

<https://creativecommons.org/licenses/by-nc-nd/4.0/>

Recommended Citation:

CRECIM (Eds.). (2018) *STEAM is for me: a personal guide*

---

# CONTENTS

---

<b>CONTENTS</b> .....	<b>3</b>
<b>INTRODUCTION</b> .....	<b>4</b>
<b>ARTIFACTS ADDRESSED TO 10-14-YEAR-OLD TEENS</b> .....	<b>5</b>
VIDEOS ADDRESSED TO TEENS .....	6
COLLECTION OF STEAM CARDS .....	7
GAMES & MEDIA RESOURCES .....	8
<b>ARTIFACTS ADDRESSED TO EDUCATORS</b> .....	<b>9</b>
VIDEOS ADDRESSED TO EDUCATORS.....	10
TRAINING MODULES ON SELF-EFFICACY FOR STEAM TEACHER AND EDUCATOR TRAINERS .	11
OTHER GUIDELINES FOR TEACHERS & EDUCATORS .....	12
MODEL OF STEAM WORKSHOPS FOR PARENTS AND TEENS.....	14



---

# INTRODUCTION

---

This guide includes artefacts for teens, teachers and educators to raise teens' self-efficacy in STEM in different educational contexts. The artefacts are being used in each initiative to promote self-efficacy. Though at this moment, these artefacts are under construction, at the end of the project we will have 21 artefacts, by which at least 7 of them will be for teens, as it is represented in the figure above. Artefacts will take the form of videos, flip-cards, training materials, graphic resources...



---

# ARTIFACTS ADDRESSED TO 10-14-YEAR-OLD TEENS

---

These artifacts are directly addressed to target 10-14-year-old kids and show them in a variety of ways (by mirroring others, by comparing with equals, by becoming informed, by providing authentic experiences of success in STEM...) why they can be good in STEM, even if they did not think it. The rationale behind this collection is the belief and intuition that teens' empowerment and agency needs to be tackled directly, as teens are a powerful and the most important actor in the educational scenario.



## VIDEOS ADDRESSED TO TEENS

These videos are aimed at inform, empower and motivate 10-14-year-old teens, made by Fundacja Uniwersytet Dzieci, the Network of Innovative Schools and the Universitat Autònoma de Barcelona. The videos are based on different teens' experiences in STEAM activities, and video-graphic reports of STEM professionals that at some point have doubts about their capacities to participate in STEM activities.



<https://youtu.be/C7inYa4QH78>



<https://youtu.be/rIYFKJ52I9c>



<https://youtu.be/Qct5bRA6R4M>



[https://youtu.be/mUzxDat\\_Ako](https://youtu.be/mUzxDat_Ako)

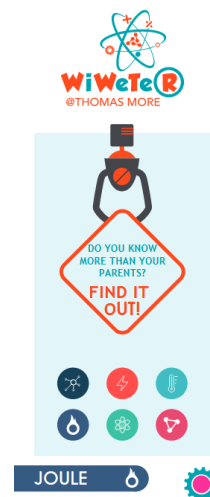


## COLLECTION OF STEAM CARDS

STEAM cards are a resource for teens to use their STEM knowledge in different and everyday contexts, and are aimed to provide different opportunities to make teens feel capable and successful of using STEM in their lives. These cards were made by Thomas More and the Universitat Autònoma de Barcelona.

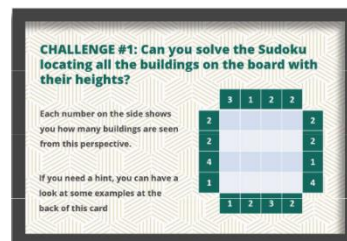
### DOWNLOAD THE JOULE STEAM-SLICK CARDS

Link: [https://steam4u.eu/wp-content/uploads/2019/03/STEAM-Slick-Joule\\_final.pdf](https://steam4u.eu/wp-content/uploads/2019/03/STEAM-Slick-Joule_final.pdf)



### DOWNLOAD THE "CHALLENGE YOUR BRAIN" CARDS

Link: [https://steam4u.eu/wp-content/uploads/2019/03/Challenge-your-Brain\\_V6\\_compressed.pdf](https://steam4u.eu/wp-content/uploads/2019/03/Challenge-your-Brain_V6_compressed.pdf)



### DOWNLOAD THE NEWTON STEAM-SLICK CARDS

Link: [https://steam4u.eu/wp-content/uploads/2019/03/STEAM-Slick-Newton\\_final.pdf](https://steam4u.eu/wp-content/uploads/2019/03/STEAM-Slick-Newton_final.pdf)



## GAMES & MEDIA RESOURCES

These two resources are aimed at raising teens' self-efficacy by mirroring others, comparing with equals and becoming informed. The collection of pictures is aimed to break the stereotypical and negative associations of STEM by displaying a diversity of settings in which STEAM can be carried out. The table game provides a unique opportunity to develop the collective self-efficacy of the classroom or teens group, as a strategy to raise individual self-efficacy. These resources were made by Xké? And The Festival of Curiosity.

### DOWNLOAD THE TABLE GAME

Link:

<https://www.dropbox.com/sh/a17zsf254c8ce6a/AAAUdbvnlaBnEfvYUNrEpXjCa?dl=0>



### DOWNLOAD THE TABLE GAME

Link:

<https://festivalofcuriosity.ie/steam4u-erasmus/>



\*This gallery is protected by a password.  
Please, do not hesitate to write us and ask  
for it. We will be happy to hear from you.





---

# ARTIFACTS ADDRESSED TO EDUCATORS

---

These artifacts are indirectly addressed to 10-14-year-old teens. The rationale of these artifacts is the conviction that when raising teens' self-efficacy in STEM it is also necessary to provide teachers, volunteers, managers, parents... resources to create good educational contexts in which teens can develop their confidence.



## VIDEOS ADDRESSED TO EDUCATORS

These videos are aimed at providing a short summary for educators who would like to know about what self-efficacy is, which strategies can be carried out to raise it, and how specifically self-efficacy can be raised in non-formal STEAM activities. These resources were made by the Fundacja Uniwersytet Dzieci and The Festival of Curiosity.



<https://youtu.be/NLL1RZCK-6g>



<https://youtu.be/Cq0SrpCqI4w>



<https://youtu.be/k9fQfN2gISk>



## TRAINING MODULES ON SELF-EFFICACY FOR STEAM TEACHER AND EDUCATOR TRAINERS

These modules are addressed to trainers of STEM teacher or educators who would like to work with their trainees about self-efficacy in STEM. By revising how an activity should be delivered, which key messages help more teens to develop their confidence, or how STEM content should be presented, training modules are aimed to indirectly target 10-14-year old teens. These resources were made by the Network of innovative schools and the Universitat Autònoma de Barcelona.

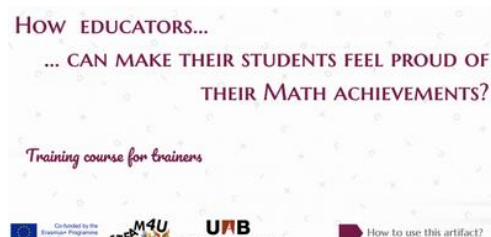
### DOWNLOAD THE TRAINING MODULE FOR STEAM TEACHERS

Link: [https://steam4u.eu/wp-content/uploads/2019/03/STEAM-Seminar\\_v2.pdf](https://steam4u.eu/wp-content/uploads/2019/03/STEAM-Seminar_v2.pdf)



### HAVE ACCESS TO THE TRAINING MODULE FOR STEAM EDUCATORS

Link:  
<https://view.genial.ly/5adf11eed9b63d0e2ed1e449/learn-how-v2>



## OTHER GUIDELINES FOR TEACHERS & EDUCATORS

As a complement to the training modules, these graphic resources provide a summarized guidance for teachers and educators when designing and carrying out STEAM activities aimed at raising teens self-efficacy in STEM. These resources were made by the Fundacja Uniwersytet Dzieci, the Network of innovative schools and Xké?.

### DOWNLOAD THE GRAPHIC GUIDELINES

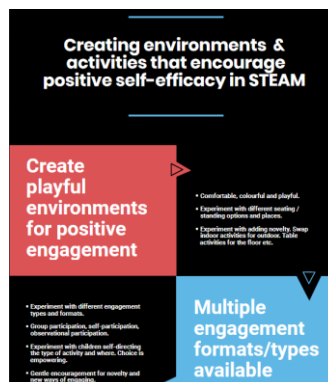
Link: [https://steam4u.eu/wp-content/uploads/2019/03/graphic-guidelines\\_all2.pdf](https://steam4u.eu/wp-content/uploads/2019/03/graphic-guidelines_all2.pdf)

### HOW TO DESIGN EFFECTIVE WORKSHOPS FOR CHILDREN?



### DOWNLOAD THE GUIDELINES FOR PROMOTING SELF-EFFICACY IN STEAM FAIRS

Link: <https://steam4u.eu/wp-content/uploads/2019/03/TFOC-infographics-final.pdf>



### DOWNLOAD THE GUIDELINES FOR PROMOTING SELF-EFFICACY IN SCHOOL PROJECTS

Link: <https://steam4u.eu/wp-content/uploads/2019/03/Llista-estrategies-finals3.pdf>





DOWNLOAD A MODEL OF  
STEAM ACTIVITY FOR TEENS

Link: <https://steam4u.eu/wp-content/uploads/2019/03/Model-STEAM-activity.pdf>



#### Xké? IL LABORATORIO DELLA CURIOSITÀ

Opened in 2011, Xké? ("perché" means "why?" in Italian) where elementary and middle schools (core target) can through a hands on method and a constant interaction and presence of tutors/explainers.

The main goal of the Center is to approach science through order to promote an innovative teaching method and to connect science (science in and within).

offered to classes, Math, Light, Metrology, Biology, Physics.

ZeroTredici

Conferences are also regularly scheduled, worked with many other institutions and awareness and competences of the students (6/13).



## MODEL OF STEAM WORKSHOPS FOR PARENTS AND TEENS

These artifacts consist on one model of activity to raise teens self-efficacy by developing family and collective self-efficacy in non-formal educational contexts. This resource was made by Thomas More.

DOWNLOAD THE STEAM  
ACTIVITY FOR FAMILIES

Link: <https://steam4u.eu/wp-content/uploads/2019/03/Model-STEAM-activity-1.pdf>



### WIWETER – SESSION WITH PARENTS



#### SECRET AGENT

#### PROJECT INFORMATION

Made by: Bea Bossuyt, An Sernaeels and Joris Dieltiens

Developed: 2017

Length of time: 2 hours

#### Demonstration- and research materials:

- Plasticized secret codes and keys
- Red cabbage juice
- Lugol or Iodbetadine
- Pollinators for plants
- Several fluids to test (acid, lemon juice, coca cola, soda solution...)
- pH papers
- lemon juice
- potato juice
- test tubes and test tube holders
- pipettes
- cups
- strong white paper
- cotton swabs
- thin brushes
- writing paper
- pens

#### Tools:

- iron
- hair dryer

