RESOURCES ON INCLUSIVE EDUCATION - ACTIVITY SHEET 1

INCLUSIVE DESIGN

#R2AS01

What is it?

This activity is willing to analyse and transform the Let's STEAM activities adapting them to students based on their needs.

Teachers will work in groups of 4-5 people. They are expected to work autonomously, following the guidelines.

Modalities

Duration

1h45

Level of difficulty

Basic

Material

- Specific canvas on empathising the different activities

LEARNING OBJECTIVES

- Identify the needs regarding inclusive design and suggest transformations to increase its inclusiveness
- Analyse and transform designed STEM educational materials and activities to adapt and increase the inclusiveness especially regarding potential groups of students at a disadvantage which are students with special needs, and women, racial minorities, and low socioeconomic students

This activity sheet is part of the Let's STEAM project funded with support from the European Commission through the Erasmus + Strategic Partnership programme. Its content reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

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

INCLUSIVE DESIGN

STEP 1 - INSPIRE

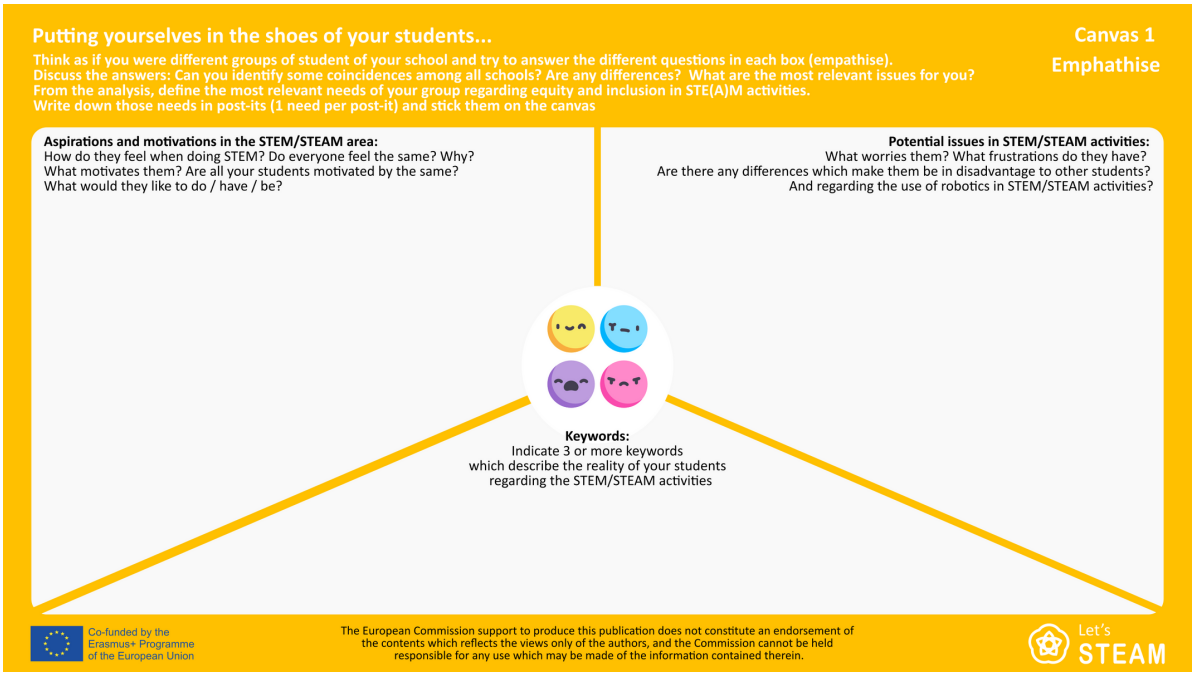
15 min.

Meet as a team and introduce each other. Introduce yourselves and briefly explain where do you come from (the type of school, your role... etc.). Reflect on your students' traits, background and relationship with STEM (students with special needs, girls, racial minorities, and low socioeconomic background) and present if they are already special policies or practices in your schools to promote equity and inclusion.

STEP 2 - CONTEXTUALISE & EMPHATHISE

20 min.

Answer **individually** the questions that are suggested in the **Canvas #1 - Emphatise** available **here**. It will enable putting yourself in the shoes of your students.



1

Analyse your answers: what **coincidences** can you identify from the contributions of all members? Is there a difference? What are the most **relevant issues** as a group?

2

Based on the analysis of the answers given, which most relevant issues can be identified regarding your students' relationship with STEM activities in terms of:

- **Aspirations** and **motivations** regarding STEM activities and fields
- **Previous experiences** in STEM activities with trainees
- Previous experiences in activities **promoting computational thinking skills**

Use Canvas #2 - Checlist for stimulating questionning

Write these issues on different post-it notes and paste them on the canvas (one need per post-it).

3

INCLUSIVE DESIGN

STEP 3 - ANALYSE

15 min.

1. **Individually**, read again the designed Let's STEAM activities. Imagine yourself implementing some of the different suggested activities with your students.

2. Think individually and try to consider **which potential issues will appear when these activities are implemented with your students** based on the needs you have identified in the previous part of the activity (contextualize). You can read again the Canvas 1 of your group if you need it to refresh what you discussed in your group.

3. Among the potential issues brainstormed, try to focus on the **ones more closely related to equity and inclusion issues**.

4. Write down in a document those potential issues, being as specific as possible. You will be asked to explain those issues to your peers, so maybe a little bit of context can be useful to understand its potential impact on the activity. Feel free to share your conclusions with the Let's STEAM community!

STEP 4 - DESIGN & IDEATE

55 min.

Return to your group and remember that the success of co-creation is based on the free association of ideas, postponing trials, building on the ideas of others and enjoying teamwork!

SHARE YOUR THOUGHTS

1. Share your ideas and listen to the rest of the members of the group. Try to **identify common issues** that might appear when trying to implement and engage students in the Let's STEAM activities. If difficult to reach an agreement, prioritize the main issues and select the top 3.

REVISE AND REDESIGN

2. Based on these selected or prioritized issues, try to revise and redesign one Let's STEAM activity so it can be **more inclusive and equitable** for your students. Try to concrete:

- Which inquiry question would best engage/be more relevant for your students?
- Which plan for collecting and showing data would best engage your students? (you can think both about the experiment design and the robotics elements needed)
- Which solution would best engage or be more relevant for your students?
- Which practices or additional resources/activities can contribute to having a more positive impact on the engagement of all students in the Let's STEAM activities?

Use Canvas #2 - Checlist for stimulating questionning

CONCLUDE

3. Share your proposal of the revised Let's STEAM activity to other members of other groups participating in the training or to the community. Try to explain to others which modifications you introduced and why you introduced them, specifically relating to the equity and inclusion issues identified in your group. You are invited to provide feedback and suggestions to help other groups improve their designs.

EMPHATHISE

#R2AS01

Putting yourselves in the shoes of your students...

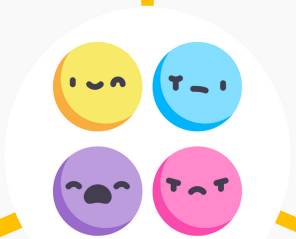
Canvas 1

Emphathise

Think as if you were different groups of student of your school and try to answer the different questions in each box (empathise).
Discuss the answers: Can you identify some coincidences among all schools? Are any differences? What are the most relevant issues for you?
From the analysis, define the most relevant needs of your group regarding equity and inclusion in STE(A)M activities.
Write down those needs in post-its (1 need per post-it) and stick them on the canvas

Aspirations and motivations in the STEM/STEAM area:
How do they feel when doing STEM? Do everyone feel the same? Why?
What motivates them? Are all your students motivated by the same?
What would they like to do / have / be?

Potential issues in STEM/STEAM activities:
What worries them? What frustrations do they have?
Are there any differences which make them be in disadvantage to other students?
And regarding the use of robotics in STEM/STEAM activities?



Keywords:
Indicate 3 or more keywords
which describe the reality of your students
regarding the STEM/STEAM activities

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

Let's STEAM

CHECKLIST - WHERE TO START?

#R2AS01

Here is a list of basic questions to consider while addressing inclusive design! There are no right or wrong answers, just different experiences that are important to be shared! Comment on your own feedback and experience below each topic!

- [ ] **Have you considered how students with special needs might face difficulties in the accessibility to STEM activities/ activities using digital technology in your lessons? What is your experience with it?**

1

- [ ] **Have you considered how students with special needs might have difficulties in understanding the purpose and what they are expected to do in educational activities?**

2

- [ ] **Have you considered how women, racial minorities, and students from low socioeconomic backgrounds might feel that STE(A)M activities are “not for them”?**

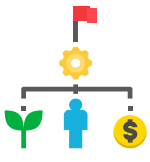
3

- [ ] **Have you considered how students from diverse cultural backgrounds may have issues understanding the main language of the lesson?**

4

- [ ] **Have you considered how students from low socioeconomic backgrounds will have difficulties accessing the resources?**

5



- [ ] **Have you considered how to improve the design of your STE(A)M activities so they can be more aligned with the universal design for everyone?**

6