STEAM ROLE MODELS IN COLLABORATIV E CLASSROOM

E-SOC
E-STEAM ON THE CLOUD

Teachers as Facilitators

Role Models' visits provide opportunities for collaborative work offering students a multiplicity of authentic learning tasks .The collaborative classroom is alive with two-way communication. A major mode of communication is dialogue, which in a collaborative classroom is thinking made public.

Based on my own teaching experience
Duration: 50'

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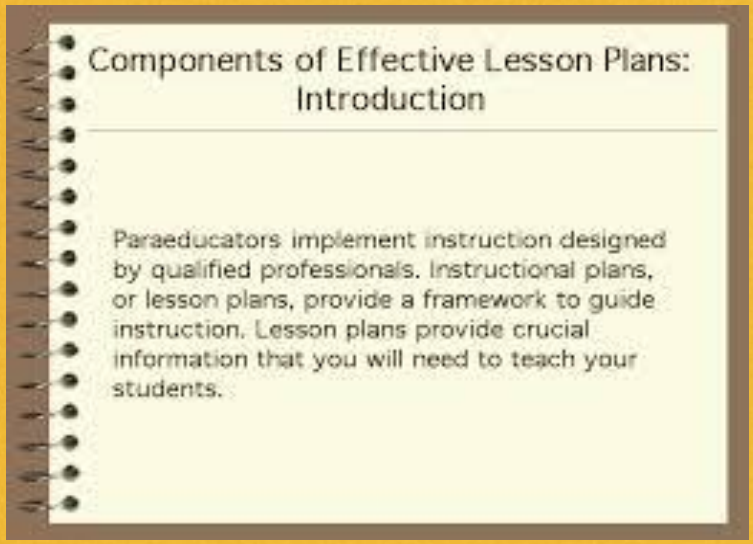


01 Introduction

Background: the E-SOC project
How to introduce STEAM role models

Guidelines purpose

Introduction

Overview

E-SOC Project

is a European project founded under the Erasmus + KA2 programme. It aims at tackling the low representation of girls in STEAM education (Science, Technology, Engineering and Mathematics) and subsequently women in STEAM careers, considering that one of the reasons why STEAM disciplines are unappealing to girls is the persistent stereotypes. In addition, teachers are not always equipped to manage gender diversity in their classrooms. Educational materials also lack female characters, role models likely to stir young girls' interest in these subjects from a young age, interest in STEAM disciplines among girls. The E-SOC project focuses on the creation of an e-learning platform where educational and awareness-raising materials can be uploaded for use by secondary-level teachers (of pupils aged 12 to 18), which will enhance the girls' number who choose STEAM education and plan STEAM careers.

Introduction

How to introduce STEM Role models in our class?

To prepare the class for a Role model meeting teachers will follow these phases:

Pre-meeting activities;

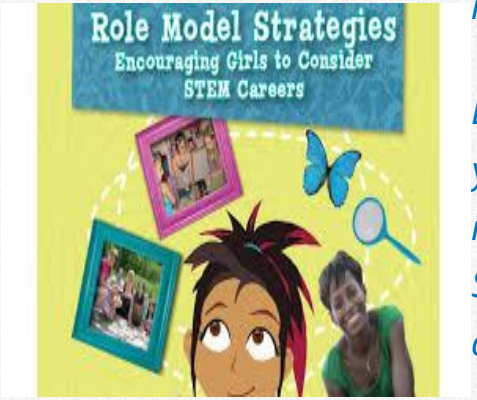
While-meeting activities;

After-meeting activities.

In collaborative classrooms, teachers share authority with students in very specific ways. Characteristics that derive from this agenda include in-depth learning; involving students in real-world, relevant tasks; engaging students in holistic tasks; and utilizing students' prior knowledge.

Introduction

Guidelines' purpose

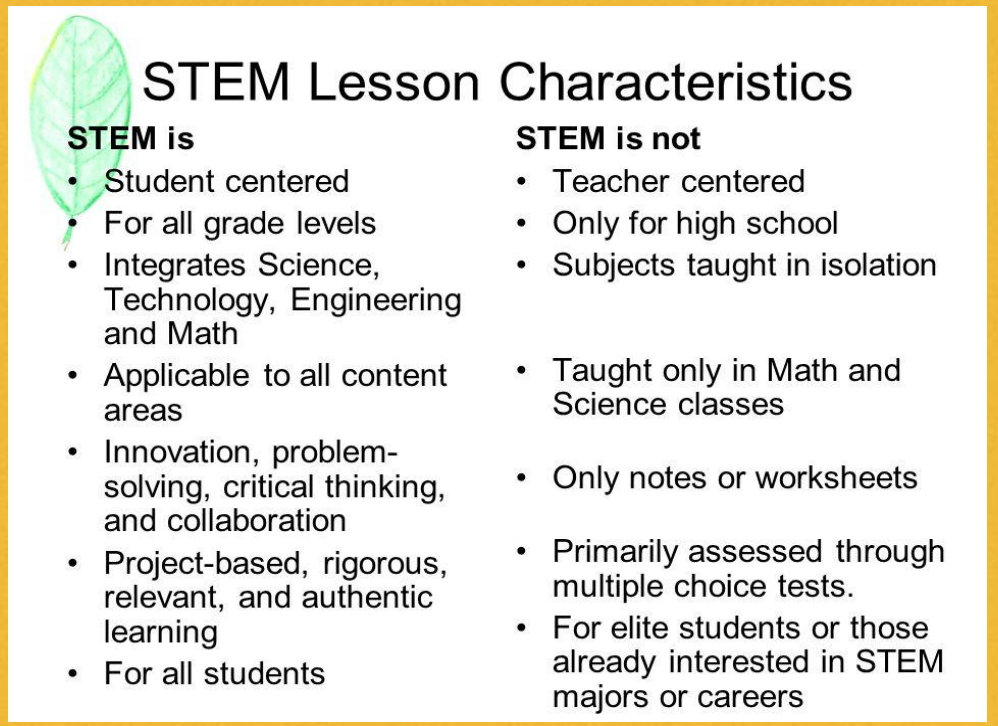


The purpose of these Guidelines is to elaborate activities using a variety of teaching methods for a Role model meeting class.

By the end of this class young participants will identify new insights in a STEM profession by taking up an active attitude.

N.B. Teachers can provide students with new ways to collaborate across contexts, dynamically generate knowledge, build on peers 'ideas, and investigate questions as a knowledge community.

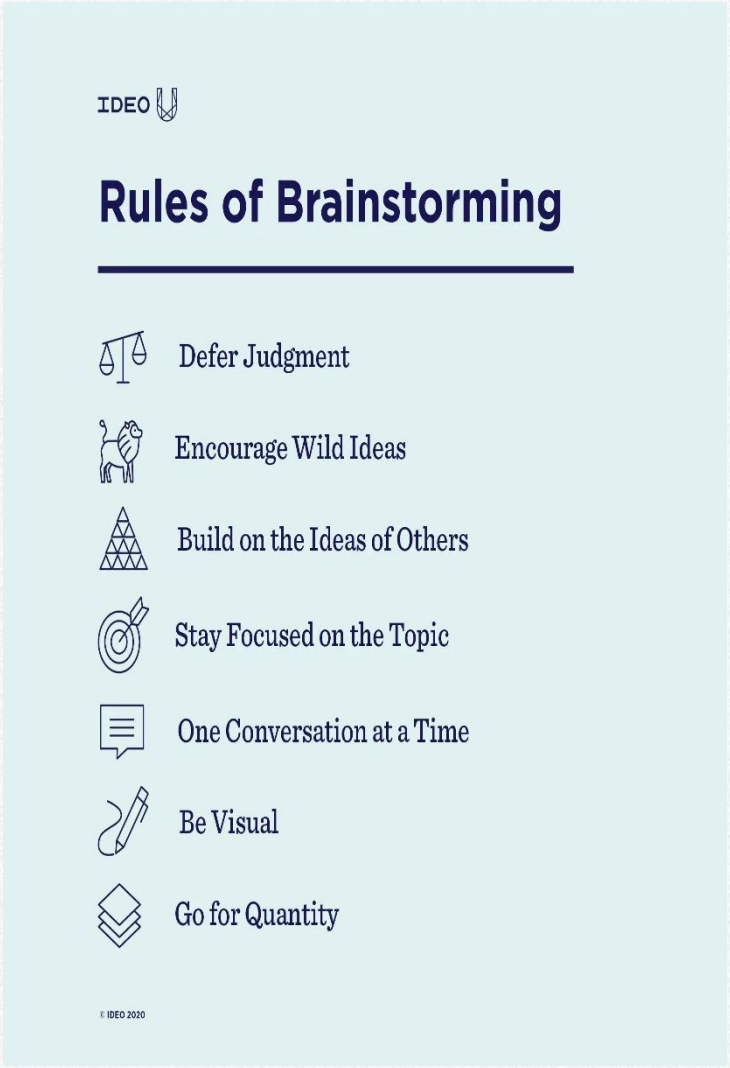
02 Pre-meeting role model class activities



Brainstorming

Role model profiles

Brainstorming (5’)



Teacher will prepare students for the meeting by asking students to share what comes to mind when they think of a scientist and/or what jobs they associate with science.

Students are encouraged to speak freely and stereotypical representations of STEAM jobs are likely to emerge:

man, laboratory, glasses, white coat.(gender bias)

T. will ask students to prepare some questions for the Role model which will be written on Post-its and stuck on a Role model poster.

Role model profiles

Role model's profile will be selected in a way that everyone can relate to so as to avoid exclusion: it is interesting to have young role models, but the diversity of personalities and the different fields they work in (not only successful careers) are equally important.

Speaker(s) can be:

a successful student in a STEAM domain,

a young researcher,

an engineer,

a technician,

any science-related job can work.

NB. If possible, choose a woman who does not work in a predominantly female field (biology, medicine). Also try to choose people who have followed non-linear paths to enhance students interest and help them understand that there are a variety of paths that lead to STEAM careers

03

While meeting Role model class activities


Name: _____

Date: _____

Who is your role model?

My role model is _____.

1 2 3

The first reason _____ is my role model is because

_____

_____

_____

_____

_____

_____

_____.

The second reason _____ is my role model is because

_____

_____

_____

_____

_____

_____

_____.

The last reason _____ is my role model is because

_____

_____

_____

_____

_____

_____

_____.

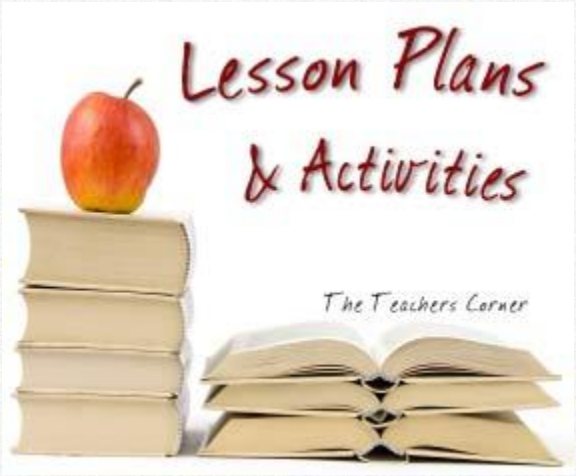
Introducing Role model

Script - Guided practice

What comes after school

Introducing Role model to the class (5’)

Script



NB. This part of the activity is interesting to help students identify with the speaker (“What was he/she doing at my age?”) and what they are experiencing right now.

Warm welcome *(5’)*

Role model or teacher (who becomes a facilitator) encourages all participants to speak freely and ask any questions they might have at any point in the discussion.

The speaker will explain why they are willing to meet young pupils/students (not only because they were asked to) and to exchange with them things like:

name,

age,

the STEM discipline they choose as a career,

family,

hobbies,

children.

A short video (no more than 3-4’) can be showed to describe, for example, the speaker(s)’s field of science, work environment, relevant personal stories, or an interview concerning their career/job.

What comes after school? (15')

PRESENTATION (5')

GENERAL QUESTIONS (10 ')

Expected questions

What did you like to study?

How did you get to the job you have now?

Why did you choose this course of study?

What did you like about it?

What aspects do you use today?

If you failed at something, how did you choose another path?

More specific questions

Presentation & Questions (10')

Students(depending on their age) will be interested in the wide range of individual experiences. It will reassure them there is more than "one way".

What do you do on a daily basis?

Who are you in contact with during the day?

Who works with you?

How would you describe a typical day? (Role model can bring pictures of the work environment, of s/he working)

Do you have a social life?

Who controls/checks what you do? Who is your boss?

Do you have one?

How is your work evaluated?

Why did you choose that career?

What do you like in this field?

More specific questions

What is more specifically the content of your job?

Is it innovative? Why is it interesting?

Also, what is boring about it? What is

challenging?

What are your accomplishments/results? What do they look like, statistics?

What is your role in civil society?

Do you have any doubts or concerns about your job and your role? Do your job match your previous expectations?

What are the basic qualities of a science specialist (may be the name of the job)?

What is your future? (job prospects, openings).

04

After-meeting role model class activities

Conclusion

Feedback

Conclusion (10’)

To conclude, it is important that students have time to discuss with the speaker(s) on any remarks and comments they have.

Students can be asked what comes to mind when they think of a scientist now that they met the speaker(s).

They can also be asked if they have ideas of the job they would like to do later and whether the activity sparked their curiosity about careers in science.

A plenary discussion at the end of the activity, gathering the teacher and students, can help bring more depth to what they heard during the activity.

The students must leave with the feeling that they are able to choose some paths in STEAM, that it is a possibility for them too.

Feedback (5’)

A free written feedback will be collected on small pieces of paper as they leave the class. They will be read randomly by the students in the next class.

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