STEAM-Active

https://steam-active.pixel-online.org/

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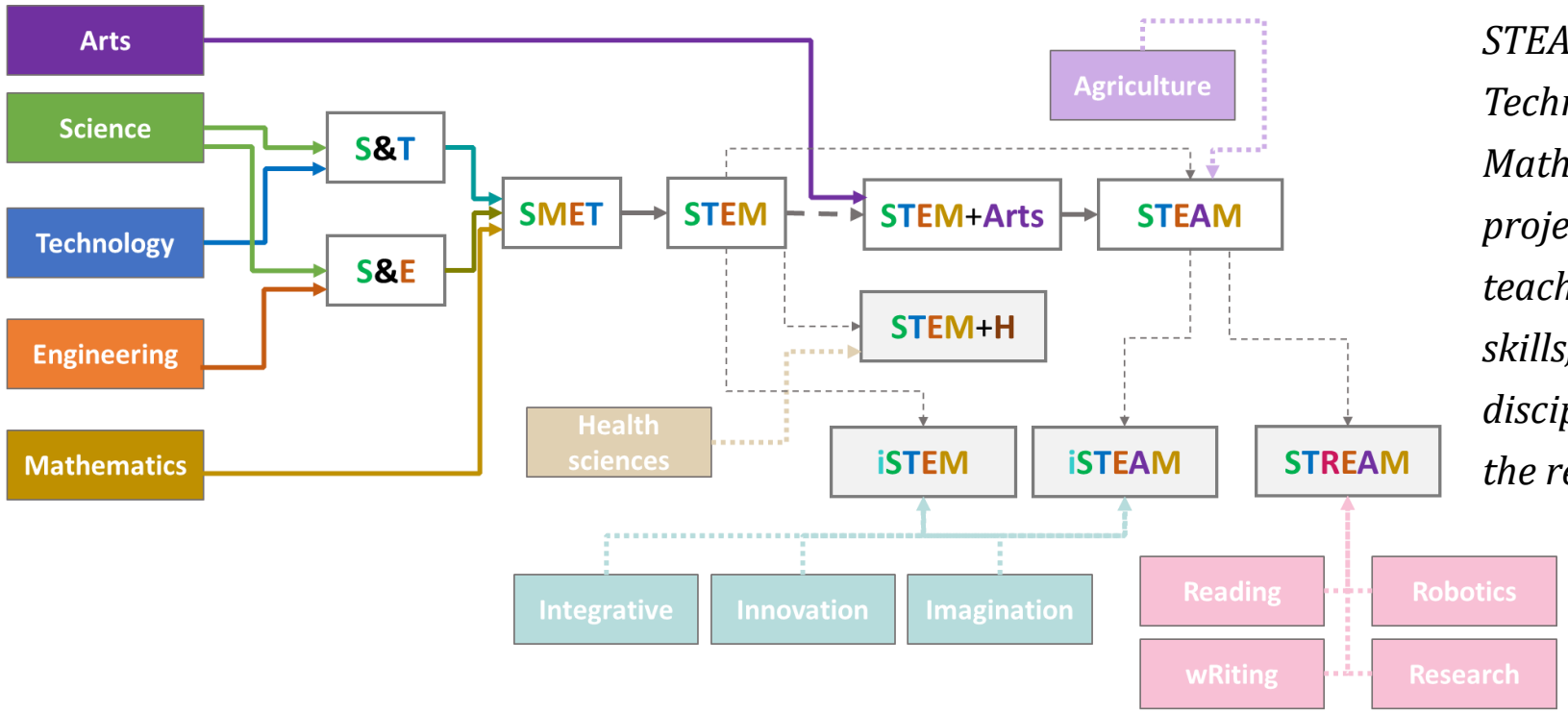
What does STEAM mean?



STEAM is an acronym for Science, Technology, Engineering, Arts, and Mathematics. /.../ In the STEAM-Active project, we define STEAM education as a teaching method that integrates content, skills, and beliefs from at least two disciplines of the acronym and focuses on the real-world contexts.

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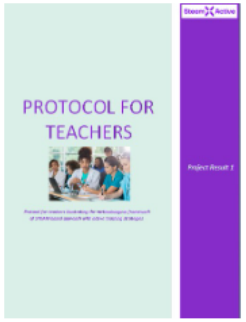
PR1.
Bibliographic Review
Protocol for Teachers

Title	Thematic Area	Educational stage
"If you aren't White, Asian or Indian, you aren't an engineer": racial microaggressions in STEM education	Gender Inequality, Students' Difficulties	University Level
A framework for Epistemological Discussion of Integrated STEM Education	Definition and characteristics of STEAM	Secondary Level, University Level
A framework for Implementing an Engineering-Focused STEM Curriculum	Definition and characteristics of STEAM	Secondary Level
A Theoretical Framework for Developing an Intercultural STEAM Program for Australian and Korean Students to Enhance Science Teaching and Learning	STEAM intervention (teaching strategies, evaluation...)	Secondary Level
An Analysis of Cultural Influences on STEM Schools: Similarities and Differences Across K-12 Contexts	Definition and characteristics of STEAM	Secondary Level
College students' perceptions of gender stereotypes: making connections to the underrepresentation of women in STEM fields	Gender Inequality	University Level
Comparing Crosscutting Practices in STEM Disciplines	Definition and characteristics of STEAM	Secondary Level, University Level



Protocol for Teachers

Are you interested in STEAM Teaching Learning Sequences? If you are navigating this webpage, the answer is probably yes.
Following that interest in STEAM proposals, nowadays it is not very difficult to find STEAM proposals but it is more difficult to decide if they have enough ingredients in their design to be considered as STEAM quality proposals. It could be difficult also to find a proposal that really fits with your aims and context and could be still more challenging if you wish to design a proposal from de very beginning.
In the following document, you will find information on whether you are interested in evaluating an already-designed STEAM proposal or need guidance in designing a sequence.
An introduction is presented in which we work on the definition and characteristics of STEAM. The introduction starts by describing the evolution of STEAM in the last decades in education to continue confronting different definitions given by different authors to finally conclude with the definition we have chosen in the STEAM-Active project. So for the STEAM-Active team, STEAM education is a teaching method that integrates content, skills and beliefs from at least two disciplines that form the acronym and that focus on real-world contexts.
The document continues by mentioning the different types of integration that we propose to use in the classroom when implementing the

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PR2.
E-Learning Course
Please register!

E-Learning Course

Basis of STEAM

Nowadays STEAM is a widely used acronym in the teaching context. STEAM projects are associated with active learning, fun, value for society, and diversity. However, the meaning of STEAM can vary with respect to the goals and the environment the acronym is used. To make this acronym more approachable, Module 1 covers the basis of STEAM, its evolution, features, and integration levels in practical application.

STEAM Active approach

This module deals with the "Ingredients of STEAM-Active methodological approach", "Ingredients of STEAM-Active teaching techniques approach" and "Teachers' characteristics/ingredients to be good applying STEAM-Active approach in our teaching".

Basis for designing a STEAM Active projecth

This third module starts by explaining the design protocol, expanding on the new terminology and how the contents of the previous modules are applied in the protocol. To better understand the design process, there will be an example of a STEAM Teaching-Learning Sequence. The importance of this guide will be highlighted by presenting the learning objectives of each activity, the recommended didactic technique for their development or the evaluation.

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PR3.
Teaching-Learning Sequences

Learning Sequences

A Collection of STEAM based Teaching-Learning Sequences that allow teachers to guide students in applying a project based learning methodology to solve socio-scientific-technological situations.

Electrical Efficiency of buildings

Improvement of Sustainable Development Goals for a building (1 building per student) considering the fixed electrical grid and local renewable generation possibilities, including collective self-consumption with neighbouring buildings.

Cycling tour and Tourism

Introduce the concept of micromobility in modern municipalities. Micromobility is one of the areas where modern municipalities should invest. Cycling is in the middle of circular economy and it needs to be integrated not as a physical exercise (only) but as a way of liv ...

Planning the Placement of Recycling Containers

Contributing to circular economy by planning the placement of the recycling containers in the urban area with considering the network of the recycling points and the local features such as buildings and population density.

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