



THE STEAM APPROACH IN EARLY SCHOOL EDUCATION

In a world full of uncertainty, with technology on the forefront of every new change in our lives, have you ever thought about what today's children's life might be like in 20 years? It's hard to predict what career options children might have as adults in the near future but one thing is certain, skills in science, technology, engineering, arts and math will be increasingly important.

This is why 'Spark the use of STEAM in preschool education' a small-scale project (KA210) cofunded by the European Commission, through the Erasmus+ programme, plays such an important role by aiming to lay the foundations for the implementation and uptake of STEAM approach in early childhood education, by making knowledge and activities related with science, technology, engineering, arts and mathematics available for early childhood education teachers and children (from 3 to 6 years old).

STEAM is an educational approach that combines science, technology, engineering, art and math. You may think some of these subjects are difficult for young children to grasp, which in some ways is true, but children can spontaneously engage in STEAM learning, often without knowing that they are doing it. The same can be said about preschool educators who often use the STEAM approach without acknowledging it. Introducing STEAM in early childhood education can build a strong foundation for future learning. Children can easily explore science, technology, engineering, art and math through play. If you still find the STEAM approach complex, keep in mind that learning in early childhood is deeply connected to play, curiosity, observation, exploration and questioning, all these aspects are paramount to build future life skills and are, in fact, the basis of the STEAM approach. Furthermore, teaching relevant, in-demand skills that will prepare children to become future innovators in a constantly changing world is crucial, for both their and society's development.

The Spark project is developing resources for early school education teachers to implement in their educational contexts, based on good practices and sound scientific findings, that can be adjusted to their lesson plans. We invite you to explore an example of the use of STEAM in early childhood education based on the fairy tale 'Three little pigs'.

SPARK STEAM IN PRESCHOOL

STEAM is the Science, Technology, Engineering, Arts & Mathematics acronym!

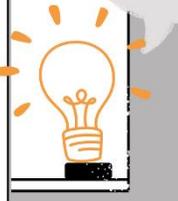


We use STEAM to describe activities, projects, or educational policies that use at least two of these disciplines.

Can we implement STEAM in preschool and Early Childhood Education (4 to 6 y.o.)?



Of course! In early schools, we use STEAM in our daily lessons even if we do not realize it!




For example, the fairy tale "Three Little Pigs" can be used to introduce STEAM topics to young children!

How??

We are trying to build the best HOME for the little pigs!




Science: states of matter, material properties, wind, etc.
Technology: Record their ideas, their creations, and applications on smartphones where children can create buildings.
Engineering: problem-solving – engineering design process to create the best building.
Arts: drawings and designs before the construction of a building, create their final ideas.
Maths: calculating, categorizing the materials.




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Let's see easy ways to implement STEAM in the school context.



In this Design Process we have 4 main STEPS to follow in a lesson:

STEP I. PROBLEM – we are trying to identify a problem from a story, a fairy tale, etc.

STEP II. INQUIRY – we are searching for information; we use brainstorming, and we record our ideas.

STEP III. DESIGNING & TESTING – we draw our plan or our ideas-constructions and we test them.

STEP IV. CONCLUSIONS & PRESENTATION – we present our final findings and our restrictions.

You can prepare a template to design a STEAM based lesson with:

Science concepts & notions	Technology Tools, Smartphone, Tablet, Internet connection, etc.
Engineering Design Process, Problem Solving	Arts Drawings, music, etc.
Mathematics measuring, categorizing, calculating, etc.	Other Subject/Discipline

Problem
Describe a challenge, a problem.

Inquiry
Search for existing misconceptions or possible ideas from children.

Design & Test
Prepare possible design choices (e.g. drawing) and offer plenty of material for the children to create and test their ideas.

Conclusions & Presentation
How? When and Why!
"Prepare the ground" for the children.




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