

STEAM education
in Early childhood.
Overcoming
Challenges and
Embracing
Opportunities in the
classroom.

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graph LR; A[INTRODUCTION] --> B[FRAMEWORK OF SEGA]; B --> C[PROJECT CONCEPT]; C --> D[ACTIVITIES]
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INTRODUCTION

**FRAMEWORK
OF SEGA**

**PROJECT
CONCEPT**

ACTIVITIES

Let us introduce ourselves

School :

Anatolia College After School Activities

Target group :

Kindergarten

Duration:

September 2023- February 2024
3 times per week/ 1 hour per time



SEGA Project & Partners



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

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INTRODUCTION

**FRAMEWORK
OF SEGA**

**PROJECT
CONCEPT**

ACTIVITIES

Implementation
of STEAM

Support of Early
Childhood
Educators (ECE)



Cultivation of
21st century
skills

Application of a
gamified
approach.

Implementation of STEAM

STEM literacy refers to individual's competence (as a set of Knowledge, Skills and Attitudes) to (Bybee, 2013):



identify questions and problems in real-life situations,

explain the natural and designed world,

draw evidence-based conclusions about STEM related-issues (Ardianto et. al., 2019).

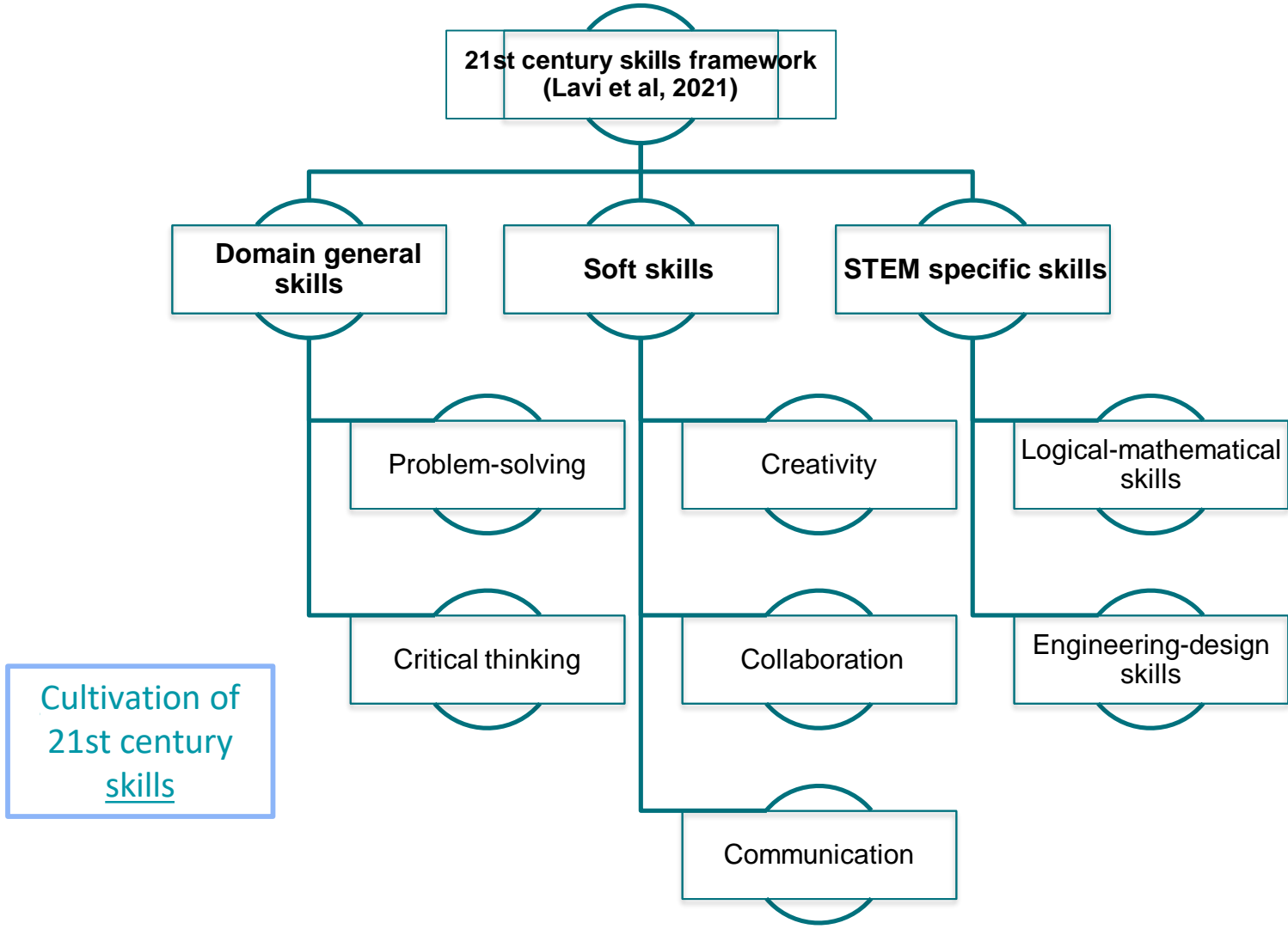
Implementation
of STEAM

Support of Early
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Cultivation of
21st century
skills

Application of a
gamified
approach.



Implementation
of STEAM

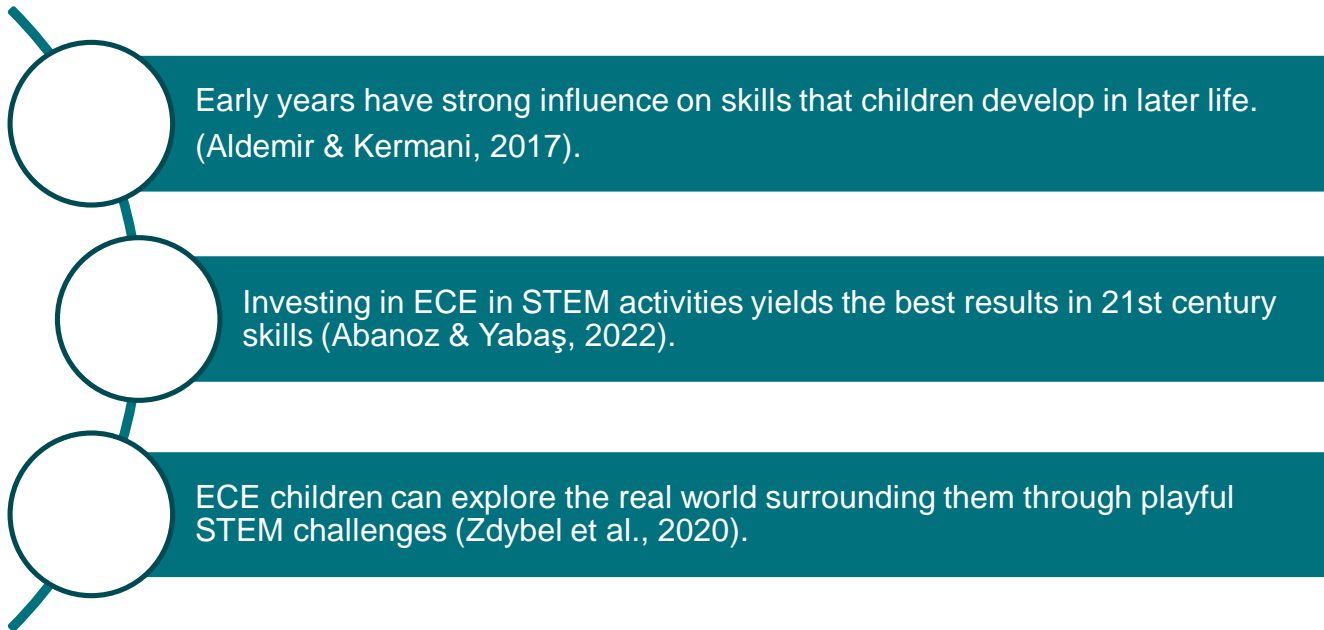
Support of Early
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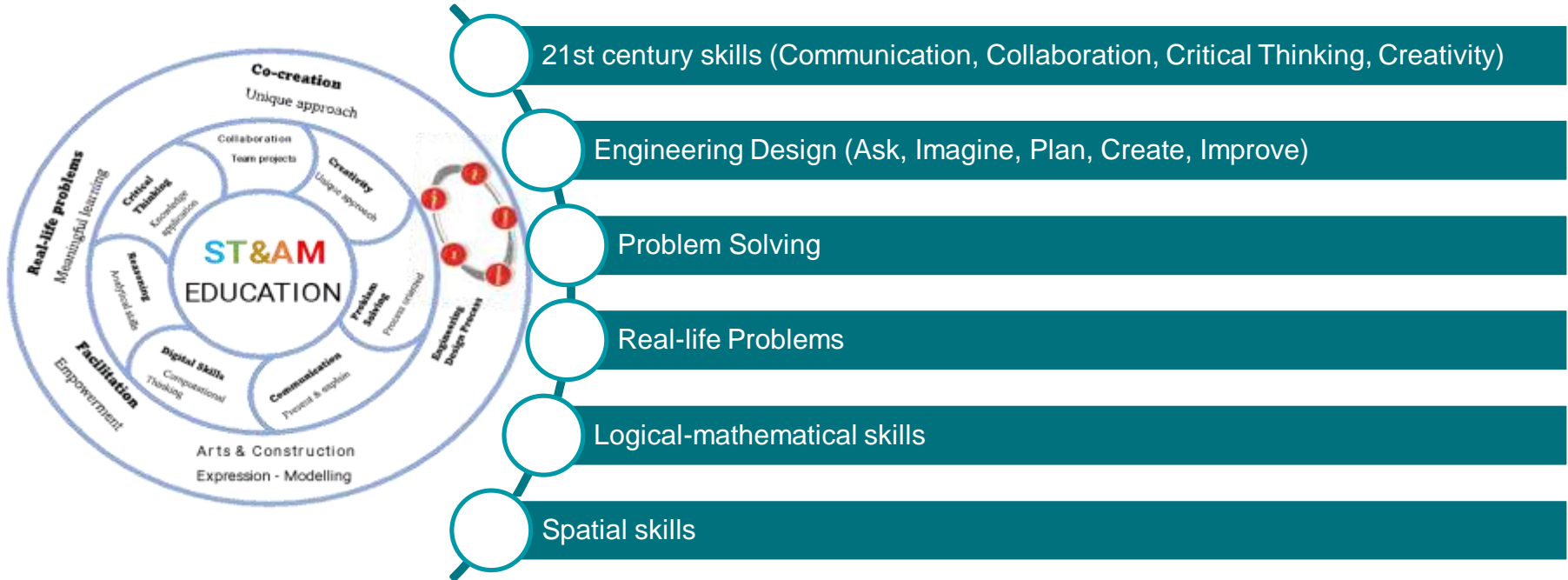
Cultivation of
21st century
skills

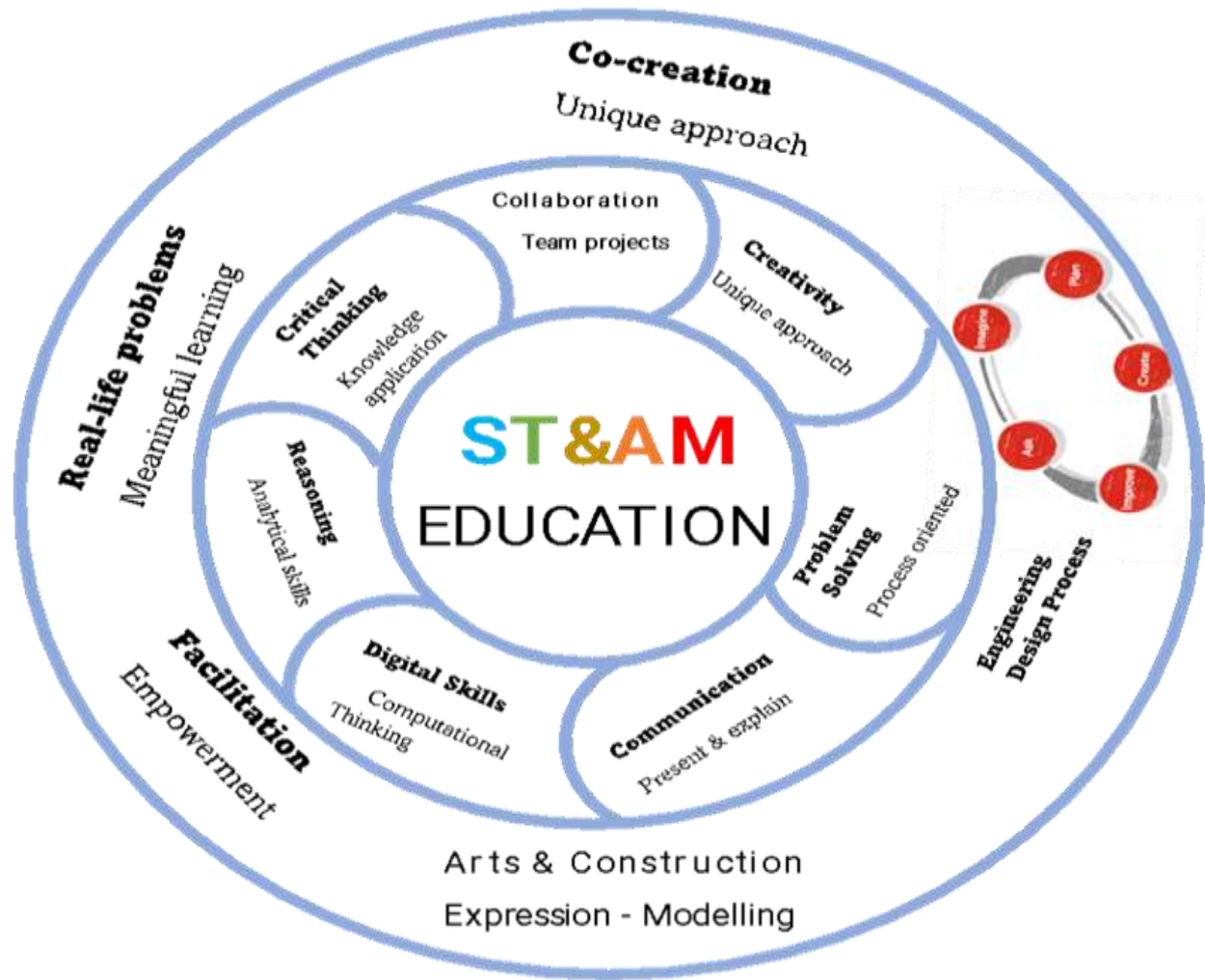
Application of a
gamified
approach.

WHY STEAM IN ECE?



SEGA FRAMEWORK





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INTRODUCTION

**FRAMEWORK
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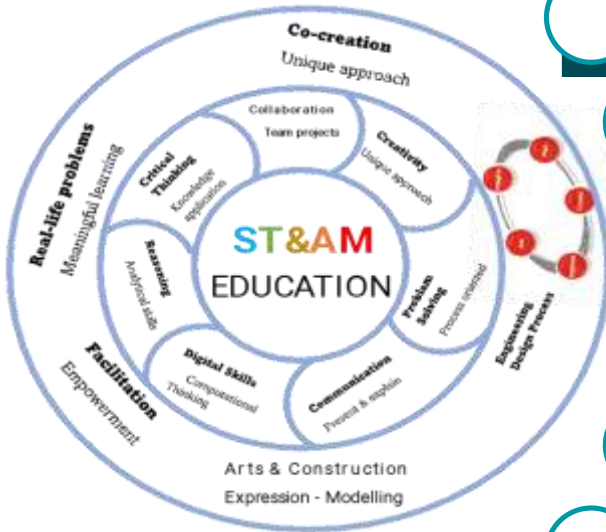
ACTIVITIES

Project Concept

Building Horizons: Empowering Students Through House Construction







21st century skills (Communication, Collaboration, Critical thinking, Creativity)

Engineering Design (Ask, Imagine, Plan, Create, Improve)

Problem Solving

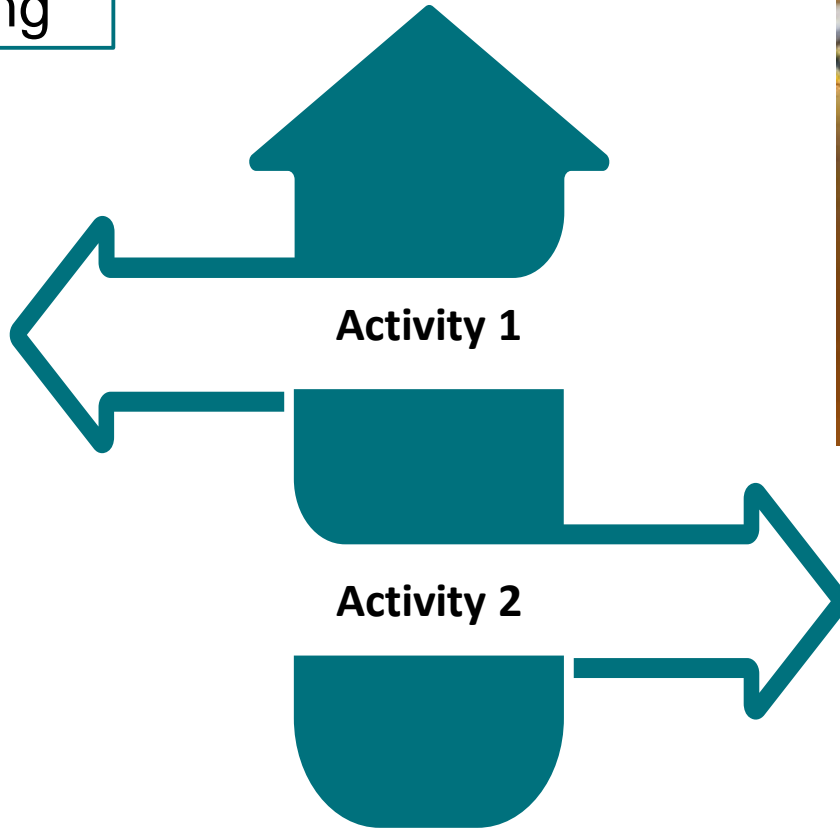
Real-life Problems

Logical-mathematical skills

Spatial skills

Critical Thinking

Power Source Puzzle:
Sorting Everyday Objects
by Energy Needs



Room by Room:
Exploring Differences in
Switches, Sockets, and
Taps

Creativity

Activity 1

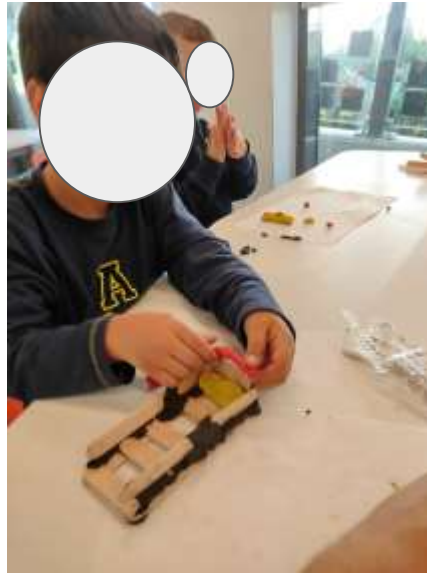
Architects in Training: Building Cultural Dwellings with Everyday Materials



Creativity

Activity 2

Designing Dream Spaces: Exploring Furniture Design and Interior Decor Creativity



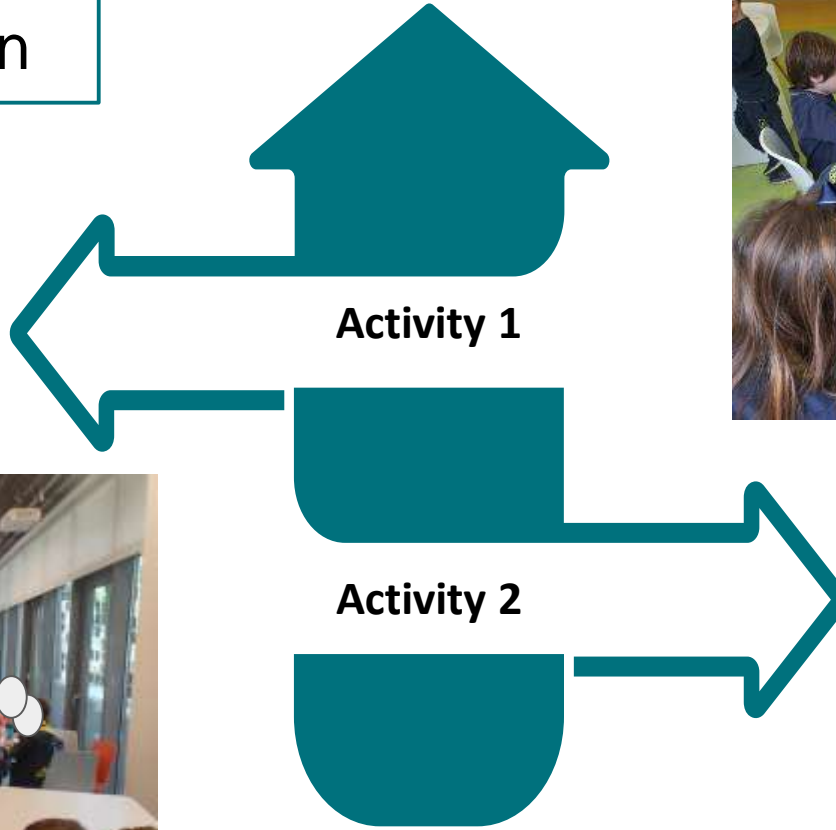
Collaboration

Life-Size Teepee Endeavor: Constructing Cultural Shelters and Building Skills

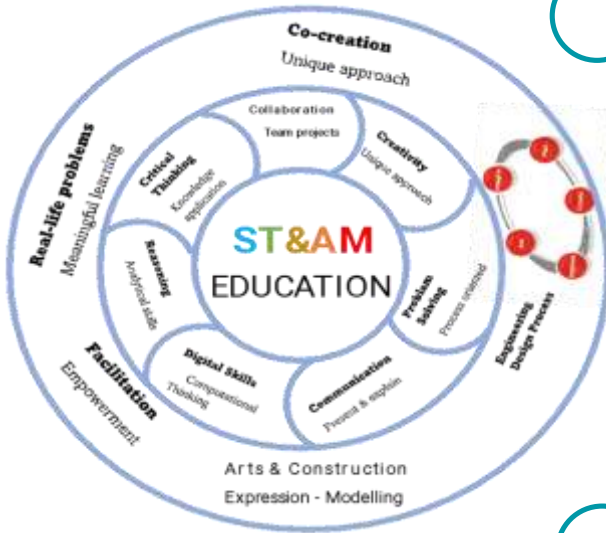


Communication

Engineer Q&A:
Exploring
Construction and
Utility Systems
with Experts



Empowering
Learning: Peer-
to-Peer
Instruction and
Effective
Communication



21st century skills (Communication, Collaboration, Critical Thinking, Creativity)

Engineering Design (Ask, Imagine, Plan, Create, Improve)

Problem Solving

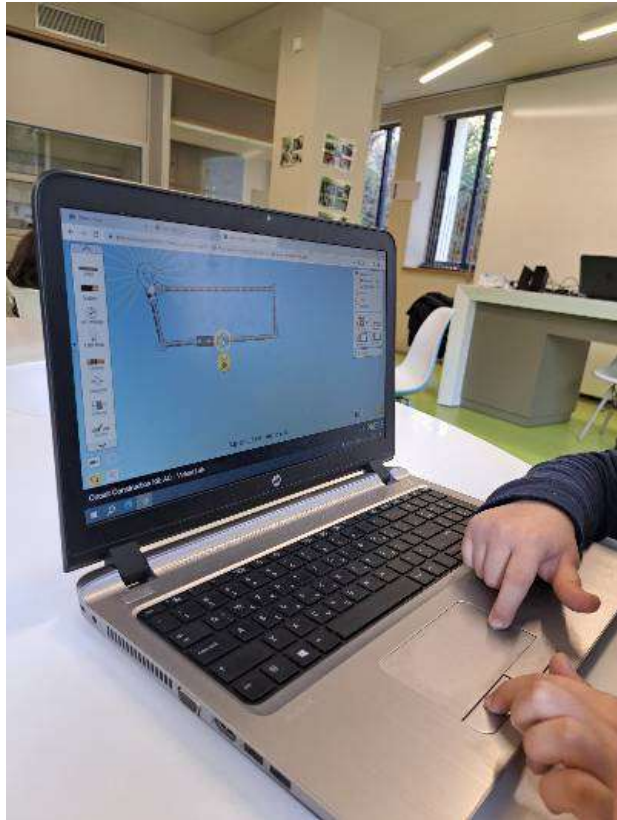
Real-life Problems

Logical-mathematical skills

Spatial skills

Engineering-design skills

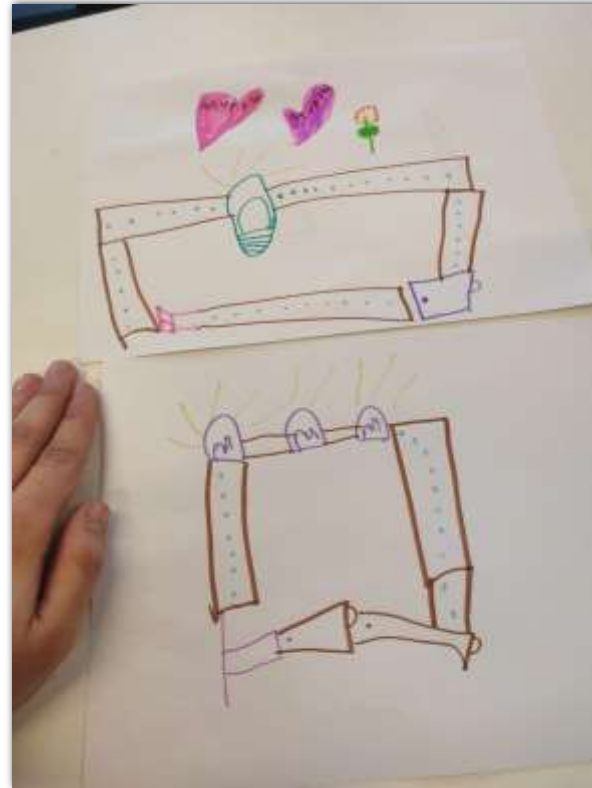
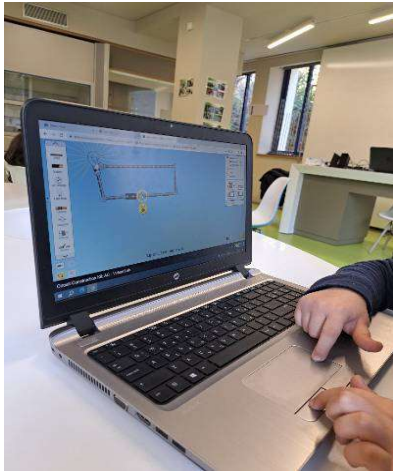
Circuit Exploration: Nurturing Engineering Design Skills



1. Virtual Circuitry: Exploring Concepts Through Simulation

Engineering-design skills

Circuit Exploration: Nurturing Engineering Design Skills

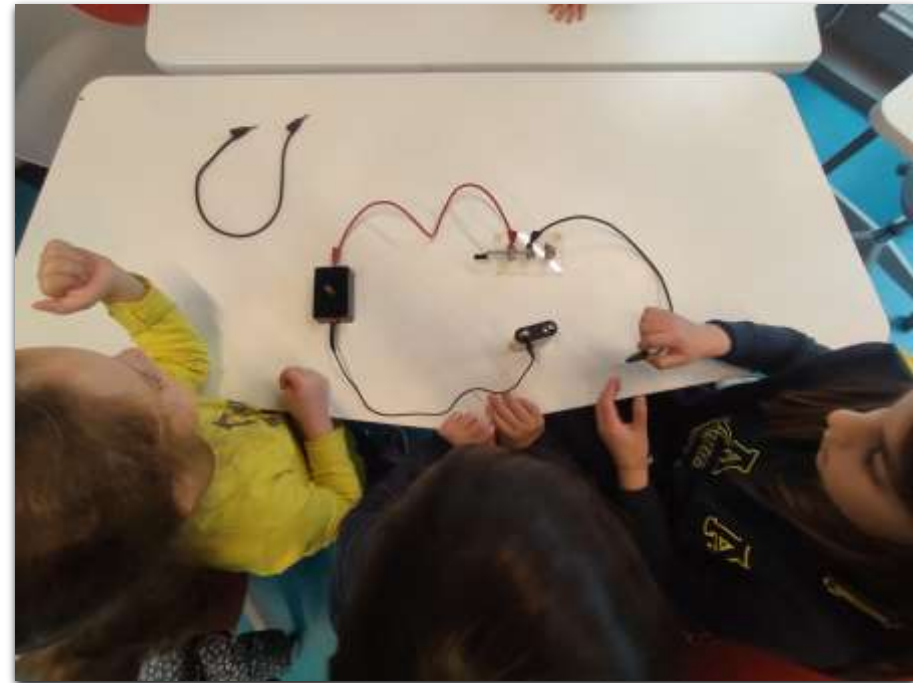
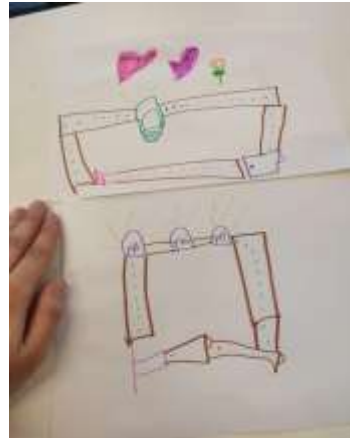
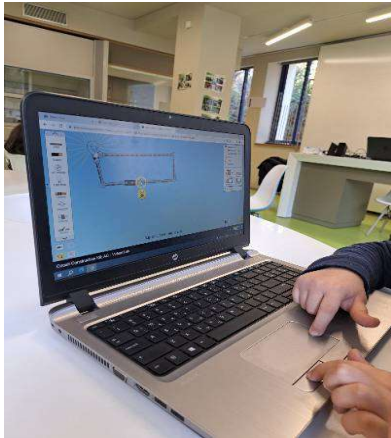


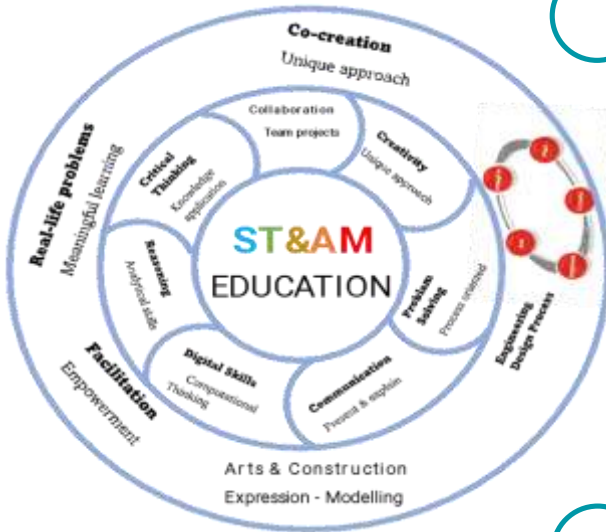
2. Translating Ideas:
Drawing Circuits from
Simulation"

Engineering-design skills

Circuit Exploration: Nurturing Engineering Design Skills

3.Hands-On Circuitry: Building with Lab Materials





21st century skills (Communication, Collaboration, Critical Thinking, Creativity)

Engineering Design (Ask, Imagine, Plan, Create, Improve)

Problem Solving

Real-life Problems

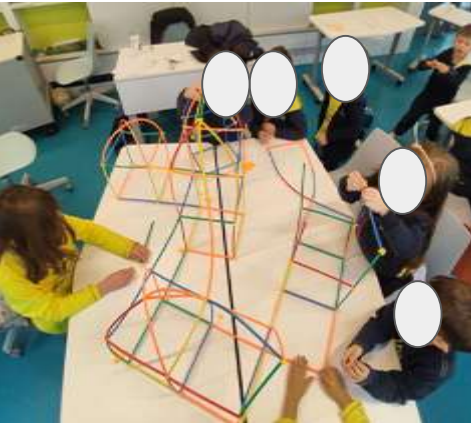
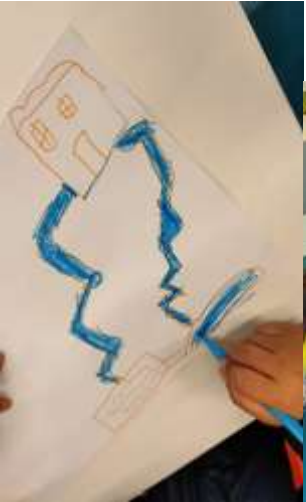
Logical-mathematical skills

Spatial skills

Problem Solving

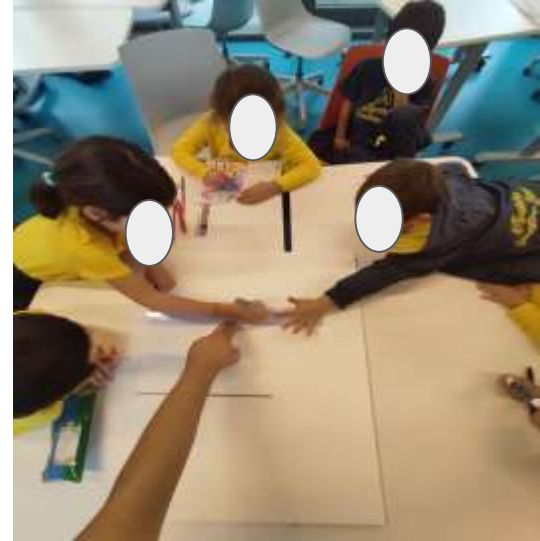
Mapping the Grid:
Exploring Electricity and
Water Networks for
Household Supply

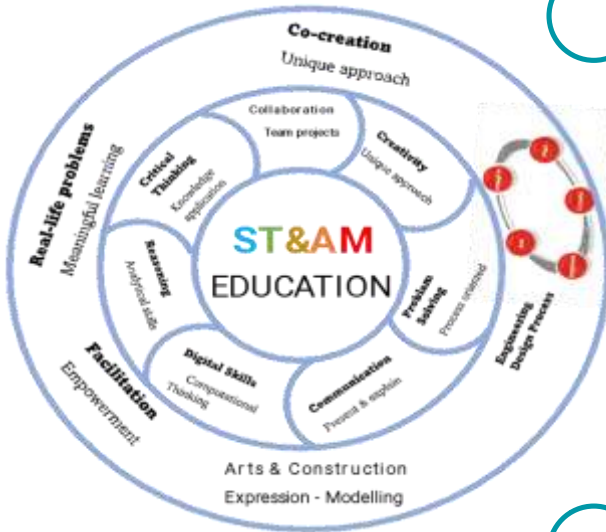
Activity 1



Activity 2

Room Exploration:
Investigating
Spatial Dimensions
and Practical
Measurement





21st century skills (Communication, Collaboration, Critical Thinking, Creativity)

Engineering Design (Ask, Imagine, Plan, Create, Improve)

Problem Solving

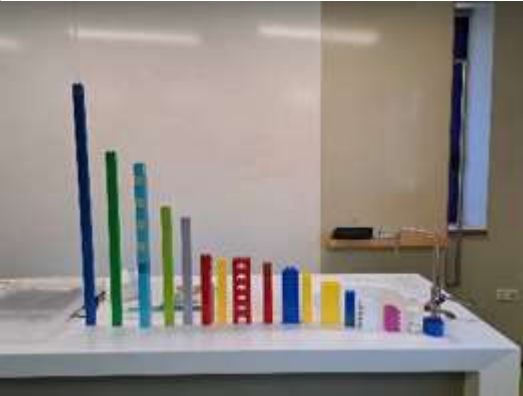
Real-life Problems

Logical-mathematical skills

Spatial skills

Logical - mathematical & spatial skills

Building Blocks of Math: Exploring Graphing with Legos and Games



Activity 1

Activity 2

Room Exploration: Investigating Spatial Dimensions and Practical Measurement



Conclusions

Our house construction project underscores the transformative power of STEM education at the early childhood level, where students engage in hands-on exploration of housing types and material experimentation, fostering practical insights into real-world construction practices.

Through an immersive exploration of STEM principles, students not only acquire essential knowledge but also develop critical thinking skills necessary to make informed decisions, promoting sustainability and innovation in their construction projects.



Learn more...

<https://project-sega.weebly.com/>



<https://www.facebook.com/profile.php?id=100086466433176>

