

EARLY CHILDHOOD INNOVATION IN STEM



Constantly learning,
constantly evolving.

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OID: E10201112

Advanced Institute for Skills Development

COURSE DESCRIPTION

Innovation starts in the sandbox. This Erasmus+ course offers a "Mini-Innovator" approach to STEM, designed specifically for Kindergarten and early Primary educators. We move away from high-screen environments toward a "Low-Screen/No-Screen" methodology that emphasizes logical thinking, scientific discovery, and physical play.

Participants will learn how to introduce complex concepts like coding and engineering through tactile, age-appropriate activities. By tapping into the natural curiosity of young children, this course empowers teachers to build the foundations of future-ready skills in a playful, inclusive and natural way.

The course follows a ****practice-oriented and collaborative approach****, consistent with Erasmus+ KA1 training standards.

COURSE INFORMATION

Learning Outcomes

- Introduce the "Mini-Innovator" pedagogical framework for early STEM;
- Apply screen-free coding activities (unplugged logic) to Kindergarten classrooms;
- Master the use of age-appropriate robotics (e.g., Bee-Bot, Cubetto) for early engineering;
- Promote inclusion and gender equality in STEM from the earliest ages;
- Improve technical and English language skills in a creative environment;
- Share and adapt innovative teaching practices with other early childhood specialists;
- Identify and share low-cost STEM materials that can be implemented at a local level;
- Enhance communicative competencies in English and social skills;
- Facilitate experience exchange with colleagues from across Europe.

DAILY PROGRAM

5-DAYS

..... *Our courses also include a daily Coffee Break

DAY 1 / 8h30-13h45

- Welcome & Early Childhood Quiz;
- Sharing the "Current State of Play" in Kindergarten across Europe;
- Integrating scientific inquiry with early language and math development using the UDL (Universal Design for Learning) framework;
- Developing logical thinking through movement, games and storytelling.

DAY 2 / 8h30-13h45

- Tactile Logic: Transitioning from physical blocks to digital logic using "Screen-Free to Screen-Smart" pedagogical progressions;
- Hands-on Robotics: Exploring early engineering tools for small hands;
- Practical: Building the first "Robot Story."
- Using robots as "Patient Assistants" to foster peer collaboration, resilience, and problem-solving in small groups.

DAY 3 / 8h30-13h45

- **Practical:** Laboratory of the Senses: Conducting indoor "Micro-Experiments" (may include "Invisible Ink Chemistry" and "Mini-Water Filtration" models);
- The Scientific Method for Kids: Teaching children to "Predict, Observe, and Explain" using tactile laboratory tools;
- Practical: Create a "Kitchen Chemistry" guide for kindergarten-safe experiments.

DAY 4 / 8h30-13h45

- The Inclusive STEM Classroom: Creating an environment where every child feels like a scientist;
- Breaking stereotypes in early childhood through inclusive play-based engineering and career-roleplay.

DAY 5 / 8h30-13h45

- **Practical:** Helping Students Help Each Other: Building a Collaborative STEM Lab;
- Course round and review;
- Learning validation;
- Certification Ceremony.

ADDITIONAL INFORMATION

Documentation: Learning Agreement; Certificate of Attendance with description of learning outcomes; Europass validation; and other required Erasmus+ supporting documents.

(Our courses are eligible to be completely funded by the Erasmus+ program 2021-2027 - KA1 funds and several other programs)

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