

**Course
Catalog
2020-2021**

Teaching Science

Innovative and fun approaches
for scientific enquiry

Erasmus+ KA1 Course

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✓ **Summary**

The world is a rapidly changing environment and we need inspired scientists to continue the process of discovery across all sectors – from health and medicine to information technology. We should always remember that it all starts with school education experience.

Science provides the development of skills of students' asking questions and making investigations; making hypothesis, inference of results of experiments to students. Like learning to count or to read, learning how to do science is a lifelong progress. Children of all ages benefit from exposure to science situation.

Engaging kids with science is easy. Teachers just need to remember to always relate science ideas back to their everyday lives. Best science lessons are the ones where you know students can't wait to get home to tell their family about their new discovery about how things work, or why things happen in their everyday life experience.

This course teaches basic science concepts and answers to the questions such as: why is science important for everyone, what benefits children gain by learning science early in their lives, how to teach science through fun, yet educational hands-on experiments etc. Via its contemporary theories, its practice and structure, the course delivers the message that science is not difficult and complicated and that there is always a simple and creative way of teaching science. But most importantly, through the course participants will discover that the key to science education in schools is motivation for both teachers and children. An exciting class will inspire both students and teachers to learn and to immerse themselves in the topic. This is best achieved through the provision of outstanding teacher resources and a faculty that is committed to making science exciting in the classroom environment.

✓ **Purpose**

The main purpose of the course is to help teachers improve their science school lessons and science project in kindergarten, primary or secondary school. Participants will be familiarized with the impact they can have on children by learning science in a fun and innovative, yet educational manner. They will learn how to boost children imagination and natural gift of questioning, by implementing scientific way of thinking and science methodology in their work. As our goal is also to encourage teachers to lead science clubs in their home countries, the teachers will receive lesson plans to work on in their own science clubs

✓ Objectives

- ✓ Learn about myths in science and discover modern science.
- ✓ Learn why science education is important for literacy matters.
- ✓ Discover the advantages of teaching science in school.
- ✓ Explore how children can benefit from learning science at young age.
- ✓ Discover that science is actually close to children's nature.
- ✓ Learn how to teach children to develop scientific mind and attitude.
- ✓ Determine the skills of scientific enquiry processes.
- ✓ Learn the educational benefits of self-explanation.
- ✓ Discover creative low cost science experiments in class

✓ Target Groups

Teachers working in primary schools and secondary schools

✓ Methods & Tools

Lectures, exercises, discussions, teamwork, role-playing, study visits.

✓ Agenda

Day 1	<ul style="list-style-type: none">✓ Introductory meeting✓ Explanation of practical arrangements✓ Presentation of timetable✓ Information about course venue.
Day 2	<ul style="list-style-type: none">✓ Developing children's ability to learn how to learn.✓ Introduction to science and science myths✓ Educational benefits of self-explanation and teaching of critical thinking.✓ Teaching children to develop a scientific mind and attitude.✓ Teaching the skills of scientific enquiry processes. The importance of school science education
Day 3	<ul style="list-style-type: none">✓ Importance of activity and discovery methods as a key principle in school.✓ Education (Important scientific equation : Science = play = children like to play = children learn).✓ How school children should be given opportunities to test and develop their ideas about the science world through practical problem-solving activities and open-ended investigations. Importance of science combined with playing

<p>Day 4</p>	<ul style="list-style-type: none"> ✓ Given Examples and hands-on activities with written lesson plans (e.g. potato battery – the electricity lesson; the magical invisible gases; discovering the proprioception sense with Wobble detector; our senses – the sensors of our bodies; the secret behind levitation; the spy device and rays of light; build and test a sound gun). ✓ The structure of science lessons for children, imitating the real science workflow. ✓ How to organize low cost science experiments. Outdoors experiments
<p>Day 5</p>	<ul style="list-style-type: none"> ✓ On-line database of articles about science for kids – kids with up-to-date knowledge. ✓ Software support and computer simulations on science experiments
<p>Day 6</p>	<ul style="list-style-type: none"> ✓ Study Visits
<p>Day 7</p>	<ul style="list-style-type: none"> ✓ Erasmus+ program : objectives, priorities, actions, forms, budget, tips for applicants ✓ Planning follow up activities, dissemination and exploitation of learning outcomes ✓ Course Evaluation ✓ Certifications Discussing possibilities for future cooperation among participants