The PATHWAY Project

European promotion of inquiry in schools

Funded by the European Union under the 7th Framework Programme, the PATHWAY consortium promotes the effective widespread use of inquiry based science education (IBSE), to bring experts in science education, curriculum developers and scientists active in research together.

Through the analysis and development of Best Practice examples in IBSE, PATHWAY supports innovative and effective inquiry techniques into science classrooms. PATHWAY develops a set of guidelines and engages in teacher training for the benefit of science education.

Material will be available for teachers, teacher trainers, and policy makers, and will include:
- Instructional models using a standard-based approach to teaching science by inquiry
- Documentation and methods to motivate teachers to adopt inquiry based techniques and activities in their classrooms
- An extensive collection of open educational resources and teaching practices.

Partners

- University of Bayreuth
- University of Sheffield
- Austrian Ministry of Education
- University of Cambridge
- University of Barcelona
- Ellinogermaniki Agogi
- Futurelab
- MUST "Leonardo da Vinci"
- Institute of Accelerating Systems and Applications
- Limburg Catholic University College
- European Organization for Nuclear Research
- Center for Research and Technology Hellas
- European Schoolnet
- Fraunhofer-Gesellschaft
- Dublin City University
- University of Helsinki
- Greek Ministry of Education
- ASPETE
- Shumen University
- Humboldt-Universität zu Berlin
- University of Education of Ludwigsburg
- Casa Corpului Didactic of Bucharest
- The European Physical Society
- CITLE
- Shodor Foundation

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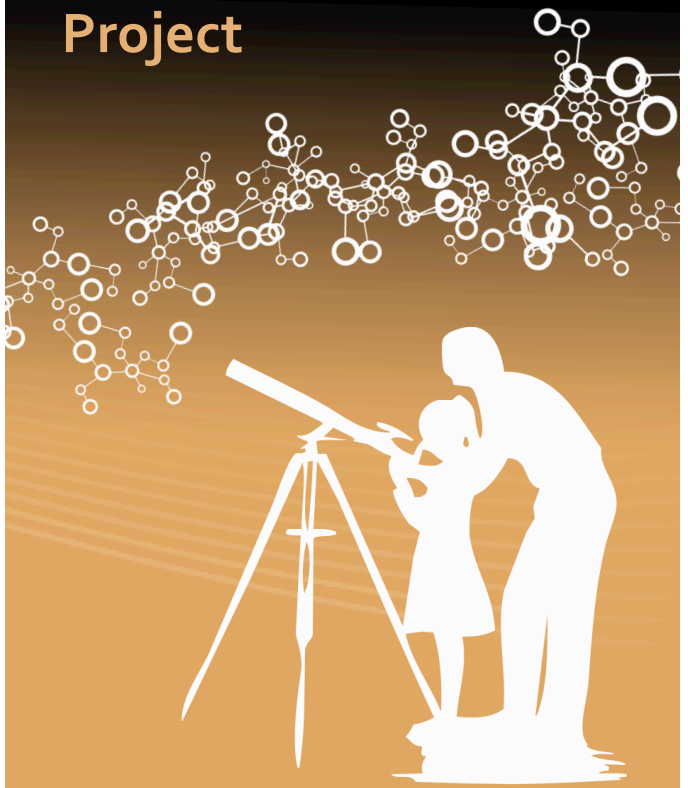
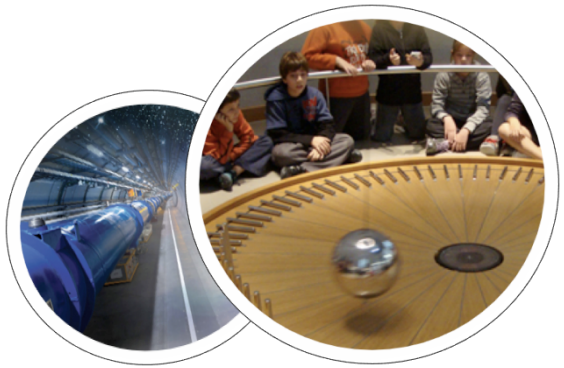


Promoting the widespread use of inquiry and problem based science-teaching techniques in primary and secondary schools in Europe and beyond.

Inquiry Activities for Schools

Better teaching and learning in science

School based activities in IBSE are one cornerstone for teacher training and for science learning centers. The successful implementation of inquiry-based learning requires engaging, well-designed and proven IBSE techniques. PATHWAY presents a series of case studies as pool of reference for teacher training activities.



Formal-Informal Education

PATHWAY encourages formal-informal collaborations to provide a richer learning experience enhancing the students' interest and understanding of science. Science centres and museums offer curriculum-based inquiry learning activities with the use of available exhibits, collaborative inquiry activities, as well as teacher practice and professional development. Through the interaction within and between schools, universities, and frontier research institutions, teachers develop opportunities to enrich their teaching practices.

Connecting Schools and Science Museums

Formal to informal learning environments

Science centres and museums are excellent informal learning centres for teachers and students. They offer a wide range of activities for pupils, and for teachers resources and specialist support including training initiatives. Teachers can take advantage of the opportunities and expertise offered in science centres and museums to expand students' inquiry activities in both formal and informal settings.

Connecting Schools and Research Centres

First hand experiences for teachers and students

Research Centres are where science happens, new observations are made, new ideas are proposed, and new models are tested. Bringing students into close contact with Research Centres increases their motivation, gives them access to active researchers and an opportunity to explore the relationship between science and technology in cutting edge research. Interacting with active researchers deepens their understanding of the scientific process and introduces them to careers in scientific research.

Professional Development for Teachers

Taking IBSE into the classroom

In our rapidly changing world, professional development of teachers is essential. The European Research Area requires that science teachers receive excellent and adequate pre-service and in-service training. PATHWAY provides a methodology for introducing IBSE into the classroom: Best Practices in IBSE, a collection of tools and materials for use in the classroom, as well as workshops for teachers, both pre-service and in-service. The PATHWAY workshops help teachers develop an understanding of scientific inquiry and to learn how to put it into practice in their classroom.

PATHWAY stimulates the creation of communities of practice, designed to bring together science teachers at the national level and the European level to share and discuss their experiences in science teaching. The communities of practice will take advantage of modern electronic communications tools, including centralized repositories, and social communication networks to move towards a new culture and philosophy in science teaching.