# TEACHING ENQUIRY with MYSTERIES INCORPORATED

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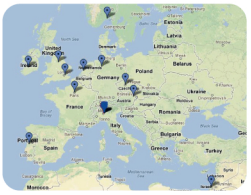

**TEMI PARTNERS**

## WHAT IS TEMI?

The main goal of TEMI is to help improve science and mathematics teaching practices across Europe, introducing a new teaching paradigm. This paradigm is based on inquiry based science education (IBSE). IBSE approaches focus on student inquiry as the driving force for learning. Teaching is organised around questions and problems in a highly student-centred inquiry process. In IBSE, students learn through and about scientific inquiry rather than by teachers presenting scientific content knowledge.

TEMI will make use of mysteries in order to stimulate critical and creative thinking, revealing the process behind the solutions to scientific problems.

## OBJECTIVES

TEMI - the acronym for Teaching Enquiry with Mysteries Incorporated – is a €3.5m EU-funded initiative under the Seventh Framework Programme (FP7), category Capacities, Science in Society, Coordination Action, which over the next three years will help transform how STEM subjects (science, technology, engineering and maths) are taught in European classrooms.

## INNOVATION

The main innovation of TEMI is the use of mystery as pivot in order to deliver IBSE method. TEMI training will encourage the use of communication skills as part of teaching process.

Furthermore, TEMI will encourage the use of new tools (e.g. theatre) for coaching.

## ANSWERS TO CHALLENGES

Teachers are called to take on new challenges:

Safely introduce IBSE in classroom;
Teach and facilitate;
Fit curriculum requirements and improve students' performance;
Engage all students;
Find good examples, suitable for IBSE methods.

TEMI will support teachers with:

New skills to engage their students;
Excellently focused resources;
Extended support to effectively introduce new teaching paradigms;
Training sessions with both practical and theoretical structures.

## ENQUIRY LAB

TEMI trainers will implement innovative training programmes: enquiry labs. An enquiry lab is a training experience in which the core scientific concepts meet the emotional engaging activity of solving mysteries. And enquiry lab is also finalized to generate a cascade effect: trained teachers will be able to train in turn.

## EXPECTED RESULTS

In 3 years, a minimum of 540 teachers will go through the intensive core training programme. Trained teachers will mentor other teachers. The cascade effect should lead to 1,620 to 2,430 teachers involved across the EU.

## MYSTERY

A science phenomenon we can observe and which raises questions in our minds, helping develop our enquiry skills and stimulating reasoning, inferring and speculating.

## IBSE AND LEARNING

How you learn with IBSE?

- Learners are engaged by scientifically oriented questions.
- Learners give priority to evidence, which allows them to develop and evaluate explanations that address scientifically oriented questions.
- Learners formulate explanations from evidence to address scientifically oriented questions.
- Learners evaluate their explanations in light of alternative explanations, particularly those reflecting scientific understanding.
- Learners communicate and justify their proposed explanations.

*National Research Council. (2000). Inquiry and the National Science Education Standards: A guide for teaching and learning. Washington D.C. : The National Research Council.*

## TEMI AND ASTRONOMY

Why is an eclipsed Moon red instead of black? Why do galaxies move away from, instead of attract each other? Each TEMI training centre will develop training modules and resources on different curriculum disciplines and the University of Leiden and the University of Milan will focus on astronomical and physical mysteries. These will involve exciting space phenomena that look counterintuitive at first glance.

adapt to difference of opinions
facilitate dialogue
listen
be open minded among others
resolve conflicts
turn conflicts into win-win situations
care for different points of view

**GET IN CONTACT** Write us for further informations or collaborations: temi@qmul.ac.uk • Visit our website: www.teachingmysteries.eu