



# EURO4SCIENCE

Exploring science and transdisciplinary learning through forensics

## CSI\_ENCE@SCHOOL COLLECTION

LIST OF ACTIVITIES TO ACT AS A BASIS FOR THE CSI WEEKS

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**EURO4SCIENCE: EXPLORING THE “CSI EFFECT” AND THE USE OF FORENSIC SCIENCE TO INCREASE THE APPEAL OF SCIENCE TO YOUNG PEOPLE AND REINFORCE INTERDISCIPLINARITY IN EUROPEAN HIGH SCHOOLS**

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## 1. INTRODUCTION

The EURO4SCIENCE project aims to provide European schools with innovative practices, tools and methodologies that will engage teachers and pupils of different ages and countries in exciting activities connected to the “CSI Theme”. Through this 24 month project, encompassing 4 countries (Portugal, Bulgaria, Poland and the UK), teachers from different subject areas will collaborate in an inter-disciplinary basis exploring the educational potential of the “CSI Effect”, i.e. the influence of TV series such as Bones, CSI, etc. on the popularisation of forensic science and its use of modern technologies.

The **Forensic Science Education Toolbox**, one of the main outputs of EURO4SCIENCE, is a suitcase with simple materials to carry out practical activities with the support of a Teachers’ Guide and a Students’ Guide and CSI Cases. It is available in 4 languages (English, Portuguese, Bulgarian and Polish) and it was designed to be used by students under teachers’ supervision.

The **CSI week** is the second main output of the EURO4SCIENCE project. More than a simple one week event, the CSI Week will be the result of a series of initiatives and activities to be carried out in European High Schools during the implementation of the project. Support materials will allow these activities to be replicated in other schools across the EU after the end of the project.

Schools in Portugal, Bulgaria and the UK will each host a one week programme with different activities including: sharing experiences of Educational Forensic Science Projects; presentation of “CSI cases” and the development of activities around these, such as theatre/drama with a crime scene scenario; bioethical debates; conferences and debates with teachers, students, and other stakeholders/organisations with law enforcement and forensic scientists; implementation of the toolbox; Science fair.

This document, **CSI@school collection**, is a preliminary approach to the CSI weeks: through desk research and consultation with schools and teaching staff, partners and other supporting organisations the project collected and produced different materials related to the use of “CSI themes/initiatives” in a school context. This collection includes suggestions to be used in the classroom (e.g. with the Toolbox) but also outside the classroom (e.g. in the CSI week). In addition to a compilation of initiatives, this collection includes sections addressing relevant issues such as: the potential impact of this kind of activity in decreasing school-dropout; the importance of involving multiple disciplines and students of different ages/levels in these activities; the importance of putting pupils in contact with “role-models” who are able inspire them in terms of school/career options; the importance of developing activities capable of promoting/fostering the integration of pupils with different characteristics, including those at risk and/or with disabilities.

This document was produced based on the materials and information collected, gathering a list of 21 activities to act as a basis for the CSI weeks in the partner countries. The list is not indicative. The partners will choose which of the activities will form the agenda for the event in their country. They are also free to adapt these activities to their national educational systems and requirements, considering the schools nominated to host the events. Therefore the indicated duration is approximate and could vary.

## 2. CSI WEEK ACTIVITIES

### 2.1. ACTIVITY 1 - CULTURAL WELCOMING PROGRAMME

**Activity description:** The students from the hosting school present something typical for their country to welcome their foreign peers: traditional songs, dances, movies, stories, etc. The aim of this activity is to familiarise the visiting students with the local culture and traditions.

**Place:** The Hosting school

**Duration:** 1-2 hours

**Materials required:** Traditional costumes; welcome drink/food

**Possible number of participants:** 30 students approx. (the 20 visiting students +10 students from the hosting school)

### 2.2. ACTIVITY 2 - STUDY VISIT OF THE SCHOOL

**Activity description:** The students from the hosting school present the school building, lessons, facilities and rules to the visiting students and teachers. The aim of this activity is to familiarise the guests with the school setting making them feel more comfortable when participating in future activities.

**Place:** The Hosting school

**Duration:** 1-2 hours

**Materials required:** N/A

**Possible number of participants:** 24 students approx. (the 20 visiting students +4 students from the hosting school)

### 2.3. ACTIVITY 3 - PROJECT PRESENTATIONS BY STUDENTS IN POSTER FORMAT

**Activity description:** The creation of a EU4SCIENCE poster could be organised as a competition. An exhibition of the posters could be organised afterwards. These posters may relate to scientific research carried out over previous months, scientific communication projects, student and teacher co-construction of teaching resources/lesson plans etc.

**Place:** The Hosting school

**Duration:** 1-2 hours

**Materials required:** N/A

**Possible number of participants:** Dependent on student interest

## 2.4. ACTIVITY 4 - DEBATE ON SELECTED TOPIC

**Activity description:** Discussion of a topic proposed by the teachers or students. The topic will be mentioned earlier in the CSI week programme in order to allow students to prepare some arguments, to read relevant articles and become more familiar with the theme. Some exemplary topics could be offered. The discussions should be held on round tables. On each round table there will be one student, performing the role of coordinator, giving time limits to the participants and monitoring the process. An external guest could be invited for the debate. The external guest could be person/people who work for the crime investigation services, police, a biologist etc. The aim of this activity is to stimulate the students' logical thinking by presenting their own ideas and defending thesis by using real world arguments. At the same time the debate will raise the students' interest in the subject matter and will stress the importance of science in everyday life.

**Theme Suggestions:** Cloning, Bioethical issues, the importance of chemistry/biology/ physics for the CSI, etc.

**Place:** The Hosting school

**Duration:** 1,5 - 2 hours

**Materials required:** Round tables and chairs. Multimedia to present important points related to the topic of the debate

**Possible number of participants:** Between 10-15 per table, depending on the students who are interested in the topic

## 2.5. ACTIVITY 5 - PUZZLE GAMES

**Activity description:** Puzzles of the human body, the internal part of a cell, simple chemical processes, graphics of crime scenes with evidence, etc. which will be attached to large boards with magnets or tapes. These puzzles could be purchased or created in advance by students. This activity aims at stimulating the creativity of the students who create the puzzles and the interest of those students who will solve the puzzles.

**Place:** The Hosting school

**Duration:** 1 hour

**Materials required:** Large board, paper with the printed or painted image of the puzzles, tape or magnets, etc.(if the puzzle is handmade)

**Possible number of participants:** 5-10 students to develop the puzzles. The puzzles could be solved unlimited times

## 2.6. ACTIVITY 6 - PROJECTION OF VIDEOS DEDICATED TO SCIENCE

**Activity description:** Documentaries from National Geographic, Discovery Channel or other films connected to science could be shown to students. These could be connected to criminology, psychology and science. The aim of this activity is to increase the students' interest in a simple way using channels which are familiar to the students. This activity will allow the engagement of students who dislike reading or face challenges reading such as lower literacy levels.

**Place:** The Hosting school

**Duration:** 1 hour

**Materials required:** Multimedia, computer, suitable room

**Possible number of participants:** 20-30 per movie, depending on the room provided

## 2.7. ACTIVITY 7 - QUIZ WITH INTERESTING FACTS

**Activity description:** The quizzes should contain simple but interesting facts related to CSI or/and science and will be delivered by the participating students to their younger peers. This activity will be useful and for both the students who prepare and participate in the quizzes. They will learn new facts connected to the topics covered.

**Place:** The Hosting school

**Duration:** 1 hour

**Materials required:** Paper/card for the students who will prepare the quiz

**Possible number of participants:** 10 to prepare the quiz questions, 2 to deliver the game, and 20-30 participants

## 2.8. ACTIVITY 8 - WORKSHOP FOR STUDENTS

**Activity description:** Workshop with different activities on separate tables. The activities could be new or similar to those used during the teachers' workshop but

simplified and as such easier to implement. This activity aims to directly engage students and raise their interest in forensic science and criminology. The workshop will be led by exchange students and host country students, using the toolbox activities for inspiration and/or developed in collaboration with individuals/organisations with experience in running such workshops.

**Example of activities:** Invisible writing, finger prints, etc.

**Place:** The Hosting school

**Duration:** 1-2 hours

**Materials required:** *Dependent on the activity selected/ paper, pencil, milk, lemon, brush etc.*

**Possible number of participants:** 4 tables with 5 participants per table

## 2.9. ACTIVITY 9 - DISCUSSION

**Activity description:** A discussion focused on the how students perceive criminology and CSI, what is the reality and what is fiction found in movies; the aim of these activities is to differentiate between myths and reality using CSI movies and stories.

**Suggested topics for discussion:** “Criminology through the children's /youth eyes”; “My favourite encyclopaedia”;

**Place:** The Hosting school

**Duration:** 1-2 hours

**Materials required:** Tables and chairs, suitable room

**Possible number of participants:** 20-30 students

## 2.10. ACTIVITY 10 - REAL PROFESSIONS PRESENTATION

**Activity description:** Presentations of 10 professions linked to science will be delivered. These presentations will be prepared and delivered by the students to their peers. External guests, representing these professions, could be also invited if possible. The aim of this activity is to reveal the real “face” of certain professions, to familiarise students with professions they are unaware of, to integrate an element of primary career guidance. The students will be more aware of the importance of school subjects required for these professions.

**Place:** The Hosting school

**Duration:** 2-3 hours

**Materials required:** Multimedia, computer, suitable room

**Possible number of participants:** 30-50 students, depending on capacity of the room provided

## 2.11. ACTIVITY 11 - COLLECTION OF BLADES, PETALS AND ETC.

**Activity description:** The students will be asked to bring into school previously collected blades, petals, herbs, flowers, etc. in order to contribute to the implementation of the activity. These will be used for constructing a common collage from the collected materials. The common collage will be dedicated to a topic selected by students or teachers. This activity aims to stimulate creativity and the ability to work as a team.

**Examples of Topic:** Representing the school / planet and etc. with flowers; recreating some biological or chemistry process, etc.

**Place:** The Hosting school

**Duration:** 2-4 hours

**Materials required:** Blades, petals, herbs, flowers, glue, paper, coloured pencils

**Possible number of participants:** 20 students approx., depending on the number of collages.

## 2.12. ACTIVITY 12 - ROLE PLAYS

### Activity description:

1) Role plays representing the prosecution of real criminal cases. The performance of the students in the roles of prosecutors, judges and lawyers will be open for observation by the other students. This activity aims to engage students in real world topics and to familiarise them with different professions connected to the topic.

2) Crime science investigation re-enactment, including collection of clues/evidence which are analysed to allow students to generate theories/identify suspects; the clues generated could come from lessons through analysis of crime scene samples/other documents – this allows whole school and transdisciplinary involvement in CSI week. In lesson activities may include

- Science – analysis of samples (microscopes, blood analysis, chromatography, spectroscopy)
- English – news reporting, role play to recreate the crime



- Geography – mapping/ analysis of soil data
- History – genealogy, evaluation of source material
- Maths – statistical analysis (e.g. relating to DNA fingerprinting)
- Art – production/exhibition of science related artwork

**Place:** The Hosting school

**Duration:** 1-2 hours

**Materials required:** Suitable room; paper for the students participating in the activity, previously selected case by the teachers.

**Possible number of participants:** 10-15 participating in the role play and unlimited audience

### 2.13. ACTIVITY 13 - STUDY VISIT

**Activity description:** Visits to law enforcement labs and headquarters, or other laboratories, research centre or etc. could be made. This activity aims to show the students the real environment of the selected places and the professions of the people who work there. Science subjects in real world situations will be presented.

**Place:** The city of the hosting school

**Duration:** 1-3 hours

**Materials required:** N/A

**Possible number of participants:** 10-20 students

### 2.14. ACTIVITY 14 - VISITS OF POINTS OF INTEREST

**Activity description:** Visit to scientific centres, museums or botanical gardens, zoos, galleries or similar places depending on the hosting city.

**Place:** The city/area of the hosting school

**Duration:** 1-3 hours

**Materials required:** N/A

**Possible number of participants:** Dependent on the location selected

### 2.15. ACTIVITY 15 - INFORMATIONAL VISITS AT SCHOOL

**Activity description:** Visits or talks regarding people, places or TV series related to forensics could be organised. External speakers such as university lecturers, scientists or

other professionals could be invited. This activity aims to familiarise students with the real world context of forensic science.

**Place:** The hosting school

**Duration:** 1 hour

**Materials required:** N/A

**Possible number of participants:** 30-50 students

## 2.16. ACTIVITY 16 - KNOWLEDGE EXCHANGE SESSIONS

**Activity description:** Sessions for students to share experiences from the CSI weeks in their countries will be organised. During these sessions PowerPoint presentations, movies, pictures will be presented. The aim of this activity is to foster the intercultural element of the project and to present good practice from other countries. An exhibition with these materials related to science could be organised.

**Place:** The hosting school

**Duration:** 1-2 hours

**Materials required:** Multimedia, computer

**Possible number of participants:** 30-50 students

## 2.17. ACTIVITY 17 - INTERNATIONAL COMPETITION

**Activity description:** This will connect forensics and the Arts. The competition would be launched before the CSI week and the winners would be announced in the CSI week. The idea is to recreate the solving of a crime using forensics.

The main aim is to give a new overview of the science.

**Examples of competition materials:** Drawings, theatre, photos, video clips etc.

**Place:** The hosting schools

**Duration:** N/A

**Materials required:** Dependent on the competition selected

**Possible number of participants:** unlimited

## 2.18. ACTIVITY 18 - READING OF ESSAYS ON THE TOPIC “MY FUTURE RELATED TO SCIENCE”

**Activity description:** Students will be asked to write an essay on the topic. Afterwards, selected essays, written by the students, will be read to the other students. This activity could be combined with some of the other activities (for example debate, discussion of round tables).

**Place:** The hosting schools

**Duration:** 1 hour

**Materials required:** N/A

**Possible number of participants:** Dependent on the number of students who are interested

## 2.19. ACTIVITY 19 - CRIME FICTION WRITING WORKSHOP

**Activity description:** Crime fiction writer(s) could be invited into school to run a workshop. The students could produce short stories in run up to workshop and develop these under expert tutelage or start new stories inspired by input from authors. In this event a short story competition could be integrated. The teachers read and shortlist best entries then send to crime fiction authors to judge winners.

**Place:** The hosting school

**Duration:** 1-2 hours

**Materials required:** N/A

**Possible number of participants:** 40-50 students

## 2.20. ACTIVITY 20 - DRAMA PRODUCTION

**Activity description:** Students put on a murder mystery play (with possible audience interrogation). The students could write their own play with support from teachers or use scripts available from various organisations. The final result could be a story or movie. This activity will stimulate the creativity and teamwork skills of the students.

**Place:** The hosting school

**Duration:** 1-2 hours

**Materials required:** The students will decide what to use and will procure the materials by themselves

**Possible number of participants:** 10-20

## 2.21. ACTIVITY 21 - CAREER TALKS/STANDS

**Activity description:** Local scientific and engineering companies could send representatives into school to explain the details of their jobs to students. Former students could be also invited. This activity aims at give primary counselling connected to scientific careers.

**Place:** The hosting school

**Duration:** 1-2 hours

**Materials required:** N/A

**Possible number of participants:** 50-60

## 3. PROPOSAL FOR INNOVATIVE ATTENDANCE LIST

Instead of the traditional paper attendance list (which may be difficult to implement in a school environment, because of the personal data and number of participants), large paper sheets could be placed in the area where the most of the CSI Week activities will be undertaken. Pencils and black ink will be also provided and the students will be asked to put their fingerprints on the white sheets. In that way we will be able to calculate the average number of students who participated in the CSI week activities.

