



European Project Semester

PROJECT OUTLINE

Project dates: March – June 2025

Title:  **Out of the Box**

Project activity areas:
Mechanical design, Scenario Design,
Escape Game.

Keywords: Escape Game (scenario,
puzzles, collaboration). Mechanical device

Tutor's name and coordinates

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Project origin

partnership between UTTOP and the
association "Les Petits Débrouillards"
(<https://www.lespetitsdebrouillards.org/>
in French)

Project technical background:

The **Out of the Box** project aims at implementing an innovative scientific animation and mediation system by hybridizing and synergizing two complementary existing tools:

The **Enter the Box** (EtB) device, shown in Figure 1, consists of a themed box whose opening is conditional on the solving of puzzles. The main box itself contains various objects and other containers that require riddles to be solved (in particular, by exploiting the objects in the box) in order to be opened.



(a) Box (overview)



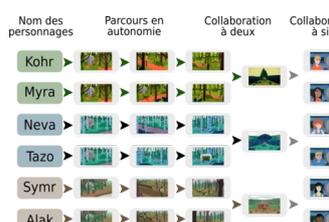
(b) Box (content)



(c) Puzzle example

Figure 1 : Existing EtB Box

The **Escape the Classroom** (EtC) device, Figure 2, consists of a set of scenarios involving several characters who have to solve puzzles (independently or collaboratively) in order to progress. These scenarios are accessible via a simple web browser.



(a) Scenario (overview)



(b) Scenario (extract)



(c) Material for the PiXeL scenario

Figure 2 : EtC Scenario

The project is structured by 4 main actions:

Action A0: Project management

This action aims to ensure regular monitoring of the project, organize meetings to ensure proper coordination of the various project actions, and set up problem-solving actions.

Action A1 : Drawing up specifications

This action aims at specifying the partners' expectations regarding the hybrid device to be developed, based on a draft scenario on the selected theme. As part of this project, we have chosen to develop a scenario on the theme of the **biodiversity of the seas and oceans**, its fragility in the face of the threats that impact it, and the importance of preserving it.

Action A2: Specification and design of a generic box

The contents of the box can be objects, documents or other containers. All the containers can only be opened by solving different puzzles, which will be contextualized by the scenario (see Action A3). The box should be able to be used in several scenarios on different themes (hence the term "generic"). The box and all the elements it contains must be designed in such a way as to be feasible at a limited cost, using accessible technologies (3D printing, for example).

Action A3: Specification and design of a scenario

This scenario will involve a number of characters, and will aim to raise awareness of the importance and fragility of biodiversity in the seas and oceans. Beyond the scenario itself, the definition of the puzzles, in relation to the targeted theme, will be an important element of the work. The scenario will enable the box to be opened progressively (see action A2).

If there's enough time left at the end of the project, a prototype (box + scenario) can be produced.

Studied topics:

- Definition of requirements and technical specifications
- Design of an hybrid (mechanical/virtual) device
- Biodiversity of the seas and oceans
- Elaboration of a scenario (characters, story...) and of puzzles