



Would you become our new STEAM superhero?

meaningful quests developing creativity and critical thinking



PEDAGOGY



Introduction



Unplugged - Unplugged approach of computational thinking for children towards creativity and culture - unites children's education enthusiasts who are strongly committed to creativity in learning.

The Unplugged project, coordinated by the University of Aix-Marseille, has been approved and funded by the Erasmus + Programme under the extraordinary calls launched in 2020 to support digital education readiness and creative skills in the framework of the COVID-19 sanitary crisis. Its implementation takes place in 5 European countries - France, Belgium, Italy, Austria, and Bulgaria - gathering a multidisciplinary consortium.

Unplugged has been designed to **empower the relations between the formal (schools) and informal learning ecosystems (museums, libraries, associations, families ...)** in developing creative practices to support students positioning as critical thinkers and active citizens in the 21st-century society.

This gamebook presents the full Unplugged Quest, a comprehensive game, composed of **several gamified challenges**, united in a **unique universe** proposing a consistent pathway in the development of citizenship behaviours allowing children to recognize the needed values for living in community.

The Unplugged set of games can also be used as a **one-stop-shop of playful activities** that can apply both in the classroom and at home, all linked to several parts of the national primary school mandatory curricula.

CONTRIBUTIONS

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DESIGN & CREDITS

EU project consortium

The contributors credited in this coursebook form part of the Unplugged consortium that you can discover here: www.unplugged-quest.eu. The consortium is composed of: Université d'Aix-Marseille, Université Côte d'Azur, Explora - The Children's Museum of Rome, Muzeiko, Digitale Wolven, ZeUGMA OOD, Hands On! – International Association of Children's Museums, La Fabulerie.

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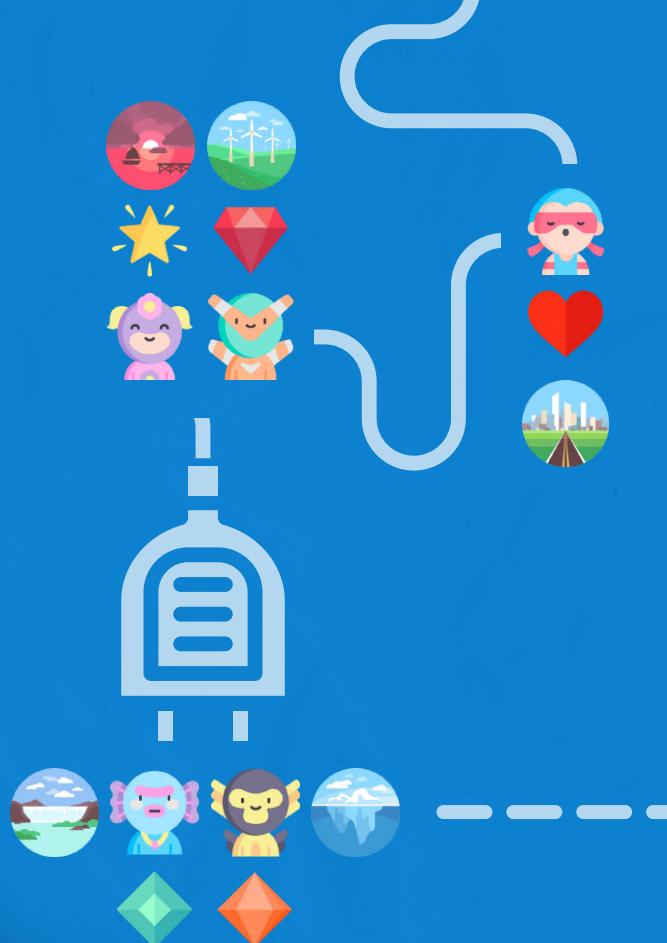
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EU contribution

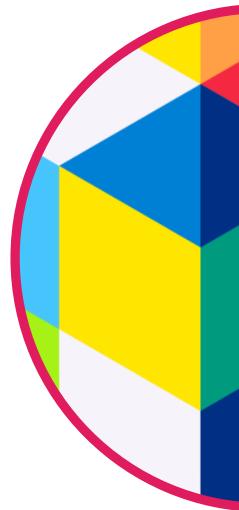
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The game: presentation of the educational approach



Quest Construction



WELCOME IN THE UNPLUGGED QUEST - A JOURNEY TOWARDS CITIZENSHIP AND STEAM EDUCATION!

The Unplugged Quest has been constructed to enable, through the playful journey of the pupils, to gather altogether have fun, acquire key competencies and challenge the children in their behaviours and understanding of citizenship. These three components have been selected for their high added value in the educational pathway of children from small age and organised for being interrelated in all the Unplugged activities.

Each game has **different objectives and uses different mechanics**. The Unplugged universe offers teachers both **plurality in addressing citizenship topics** and in the games' **settlement and dynamics themselves**, to keep pupils **focused and motivated**. The unity in the Unplugged universe does not come from unified gameplay, but from a **general mindset around citizenship and critical thinking**, that is **fed by this diversity of mechanics encouraging interdisciplinarity and creativity**. In that sense, from the beginning, the Unplugged Quest has been built using **creative thinking methods and game mechanics around three main components**:

SOCIETAL COMMITMENT

The **2030 Agenda for Sustainable Development**, adopted by all United Nations Member States in 2015, provides a **shared blueprint for peace and prosperity** for people and the planet, now and into the future. At its heart are the **17 Sustainable Development Goals (SDGs)**, which are an urgent call for action by all countries - developed and developing - in a global partnership. They recognize that **ending poverty and other deprivations** must go hand-in-hand with strategies that **improve health and education, reduce inequality, and spur economic growth** - all while tackling climate change and working to preserve our oceans and forests. Unplugged considers the **first 16 SDGs in relation to the global quest**. Each game then covers one, several or all SDGs. This commitment is in the core development of the quest as it encourages teachers to **take ownership of societal issues and bring them to their classrooms to open a meaningful dialogue**. This work has been strongly inspired by the studies and tools proposed by the **LINE**, managed by **Margarida Romero**, on card games for approaching SDGs and educational playful activities. More information on this amazing work is available here: <https://margaridaromero.me/2021/01/10/jeux-de-cartes/>.

PLAYFUL COMMITMENT

The second axis of the quest construction is the playful commitment, that has been inspired by existing initiatives within and without the consortium member. This work has led to the deployment of a **colourful and joyful universe, which ensures motivation and fun for the pupils**. Initiatives such as the **GameChangers Project** were highly inspiring for building this work, in its objective of "**mak[ing] game-based design thinking more accessible to anyone with different literacies in game playing**". Inspired by the engaging nature of play and gameplay as a tool for learning, the workshop emphasises designing playful experiences suited for the target audience". Try these resources here, shuffle your cards and start creating amazing activities through the Remixplay tool: <https://remixplay.gchangers.org/>.

PEDAGOGICAL COMMITMENT

Eventually, the last component of this interrelated triptic was to settle the game idea in the framework of the classroom through **pedagogical choices**. This enables us to identify **how games are perceived and adopted within a formal school context**, especially within Unplugged where contents and mechanisms are coming from non-formal and informal ecosystems. Games have been hence constructed as **open-ended scenarios** that may be **integrated with the pedagogical and curricular knowledge practices** of a school context. In this way, game scenarios involve both **opportunities and challenges for teaching and for fulfilling particular learning objectives**.

Pedagogical approach



The Unplugged quest is a board game composed of diverse activities, all settled in the framework of the classroom through clear pedagogical choices. All the contents you will find in this gamebook and in the associated quests have been drafted, developed and designed by non-formal educational actors, coming from creative and cultural universes. A deep work has been performed on transforming these activities in real pedagogical assets, in which teachers have the crucial role to translate these gamified experiences into learning scenarios.

SUPPORTING THE 21ST-CENTURY CITIZENS & DEVELOPING COMPUTATIONAL & CRITICAL THINKING

The 21st-century challenges pose the necessity to introduce citizenship education as a set of knowledge, skills and attitudes that allow children to recognize the values necessary for living in the community. Supported by teachers, this focus contributes to the transmission of values and principles related to living in democratic societies.

New knowledge needs to be adapted to diverse contexts, highlighting the need for new skills allowing children to face a challenging innovative, creative, and technology-driven environment.

The COVID-19 situation is a perfect example of the need to develop problem-solving skills to better approach complex situations with the proper understanding keys, from an early age.

LEARNING THROUGH GAMES

Our society often dissociates play from learning. Playing can be perceived as an activity that is not productive in terms of competency development. The commitment and pleasure of playing would be opposed to the effort required to learn. This dichotomous view of play-pleasure and learning effort ignores the need for positive psychology and a human-driven motivation perspective in learning. Indeed, using games in the educational system allows children to better explore and understand a context in a fun way without taking real risks. The game allows focusing attention and activity on a specific context governed by particular rules, very often explicit and limited.

Using games in education is a great means of discovering the surrounding universe, increasing the level of interactivity and motivation for the children to learn and explore. Indeed, playing is a universal human activity that begins at an early age as a path to discovery and learning about the world around us. Gamified experiences are more and more popular in the educational systems as they allow the children to acquire new knowledge through diverse stimuli, increasing both motivation and capacity to retain the flow of information. Research in the field of learning through games performed by the consortium members highlighted that games are still largely missing from the reference documents linked to key basic skills in the learning framework. The adoption and effectiveness of game-based learning depend on the acceptance of the game in the classroom by the teacher, hence requiring to implement of a strict pedagogical methodology and approach to ease the transition of the learning pedagogy to using games, highly tailored for acquiring the key competencies identified as crucial in primary levels.

Specifically, in the field of citizenship education and understanding the challenges of our century, when the objectives of a game are to solve real problems, it is then possible to translate concepts into understandable practices and competencies to address the challenges of real life. Experiments have shown that the transition from the game environment to reality is smooth, allowing players - in our case children - to apply the concepts learned in a fun way in real life.

VALUING MAKER SPIRIT FROM THE YOUNGER AGES

Maker spirit, emphasizing creativity, experimentations and hands-on activities, has made its way into education, spreading best practices in the do-it-yourself culture. The Maker movement settles into school culture, enhancing creativity, innovation, curiosity, motivation, technical knowledge-hardware and a fun environment. The Unplugged project activities proposed in the quest aim to develop this mindset, rooted in a deeply frugal and versatile culture. This commitment will be translated into small or bigger, simple or more complex creative productions associated with each game, that can take various forms: artistic small projects, pop-art technics, creating game cards, modelling, cooking, and creating installations. This approach will be resolutely interesting in the pedagogical commitment of Unplugged. Indeed, as highlighted by the research community (COVUNI - <https://sylvesterarnab.com/2021/05/18/playful-learning-for-developing-resilience/>), "there is a strong link between play that is iterative, experimental, and socially engaging and the development of a range of competencies young people will need to flourish. Iteration and experimentation can lead to the development of resilience through fostering the capacity to persevere with a task or activity". Competencies that are clearly needed to expand ourselves as concerned citizens!

VALUING UNPLUGGED ACTIVITIES

In the past decades, there has been a worldwide interest in working on Computational Thinking and related concepts (e.g. coding, programming, algorithmic thinking) in the educational sector as it is highly linked to the development of core 21st-century skills. Computational thinking is a problem-solving process that involves looking at possible solutions abstractly and algorithmically, in a series of consecutive steps. People who think in this way tend to be good at generalizing and transferring this problem-solving process to a wide variety of problems. Computational thinking has been hailed as having the potential to foster a new culture of learning in which creativity is rewarded and people are encouraged to experiment.

Despite this widespread interest, successful computational thinking integration in compulsory education still faces unresolved issues and challenges. A number of initiatives addressing coding/programing have been carried out, both at international (e.g. EUCode week) and national levels (e.g. introducing programming into the statutory curriculum). A European study performed by the JRC in 2016 has stated "the importance of introducing computational thinking concepts to children early on in school [as] essential related competencies need to be developed from an early age [...]. While computational thinking is still most commonly integrated into secondary education, more and more countries are now integrating it at primary level as well."

Unplugged approaches computational thinking and develops problem-solving and critical reasoning skills, core competencies in our daily lives as citizens. In practice, computational thinking is fostered in unplugged activities i.e. games dedicated to learning about computer science through engaging in games and puzzles that use cards, string, crayons and lots of running around and no screens tasks.

Thanks to these quests, learners acquire key skills about how to describe a problem, identify the important details needed to solve this problem, break the problem down into small, logical steps, use these steps to create a process (algorithm) that solves the problem, and then evaluate this process. These skills are transferable to any other curriculum area but are particularly relevant to developing systems and solving problems using the capabilities of computers. Learn more about the CS Unplugged initiative, the source of inspiration for the Unplugged project, here: <https://www.csunplugged.org/>

LEARNING OUTSIDE THE CLASSROOM

Educational and cultural institutions have been strongly affected by the COVID-19 crisis, implying reinventing the way of delivering content to young people in a creative way while maintaining strong educational commitments, even in hybrid modalities and distance learning. As stated by OECD, complementary strategies should be empowered through the implementation of cooperation dynamics between formal and informal learning environments, where the schools and teachers can find opportunities to use the museum and libraries' resources to produce motivating and active learning experiences to maintain activities during hybrid learning modalities and looking outside the classroom to inspire children in their path to becoming active citizens.

Unplugged was designed within this framework to support the dialogue between formal and informal learning ecosystems, including schools, museums, libraries, associations, and families, towards the development of joint creative practices which support the process of positioning learners as critical thinkers and citizens, facing the 21st-century societal challenges.

Pedagogical mapping



In complement to this pedagogical approach, the Unplugged project partners have deeply worked on the relevance between informal learning sources and the skills and competencies to be formally acquired by learners in primary school. This commitment brings added value to the project, by linking a playful commitment with the national curricula. These competencies have been spread among 8 key topics to be approached by the quests individually and as a whole:



01 SUPPORTING MASTERING MOTHER TONGUE

Consolidates pupils' skills in communicating and living in society, structures each person's relationship with the world and helps them to build their self-confidence



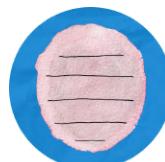
Reading



Understanding a document



Understanding and expressing myself orally



Understanding how the language works



Understanding and expressing myself orally

02 APPROACHING GEOGRAPHICAL HISTORY

Gradual and increasingly explicit construction of their relationship to time and space, based on the contributions of history and geography, in addition to civic and cultural topics



Understanding natural systems and technical systems



Understanding the relationship between object and space



Understanding the representations of the world and human activity



03

LEARNING MATHMATICS

Problem solving is the main criterion for mastering knowledge in all areas of mathematics, but it is also the means of ensuring that it is appropriated in a way that guarantees its meaning.



Calculating



Communicating



Modeling



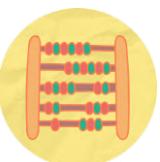
Reasoning



Representing



Searching



Understanding numbers and calculations



Understanding the quantities and measures

QUESTIONING THE WORLD

The pupils explore and observe the world around them. They will learn to question it in a more precise way, through an initial scientific and reflective approach. The objectives are to enable pupils to acquire the knowledge necessary to describe and understand the world around them and develop their ability to reason.



Justifying an approach and the choices made



Practising scientific approaches



Acquiring tools and methods



Being informed in the digital world, mobilising digital tools



Identifying oneself in space and time



Imagining, realising

04

BEING CREATIVE - ΒΙΣΥΥΑΛ ΓΡΤΣ & ΜΟΥΣΙΟ

The teaching of the plastic arts particularly develops the potential of creativity of the pupils, within open situations that encourage autonomy, initiative and critical distance. It is built on the elements of artistic language: form, space, light, colour, material, gesture, support, tool, time. In addition, taking into account the sensitivity and pleasure of making and listening to music, music education provides the cultural and technical knowledge necessary for the development of listening and expression skills.



Implementing an artistic project



Being sensitive to questions of art



Exchanging and sharing



Experimenting, producing, creating



Exploring and imagining



Expressing my emotions



Expressing myself through arts

APPROACHING THE WORLD THROUGH FOREIGN LANGUAGES

Approaching new cultures and background through the use of foreign languages, discovering the world and the daily life of citizens in other countries



Discovering the person and daily life in foreign countries



Gathering geographical, historical and cultural references



06



07

ACQUIRING MORAL AND CIVIC CULTURE AND CRITICAL MIND

Development of skills and attitudes enables pupils to become progressively aware of their responsibilities in their personal and social life. The foundation of common values includes dignity, freedom, equality - especially between girls and boys -, solidarity, freedom of conscience, a spirit of justice, respect and the absence of all forms of discrimination.



Developing my spirit of autonomy, cooperation and responsibility towards others - Cooperating and sharing



Acquiring a moral awareness



Working on the expression, identification, putting into words and discussion of emotions and feelings



Acquiring a sense of the rules of living together



Acquiring the skills to discuss and question moral choices encountered by each person in the course of their life



Adopting ethical and responsible behaviour

BEING ACTIVE IN THE WORLD - פָּגָדֵסִין סְפֻּרְטַּ אֲדָמָה

Approaching new cultures and background through the use of foreign languages, discovering the world and the daily life of citizens in other countries



Sharing rules, taking on roles and responsibilities



Acquiring methods and tools through physical exercise and sport



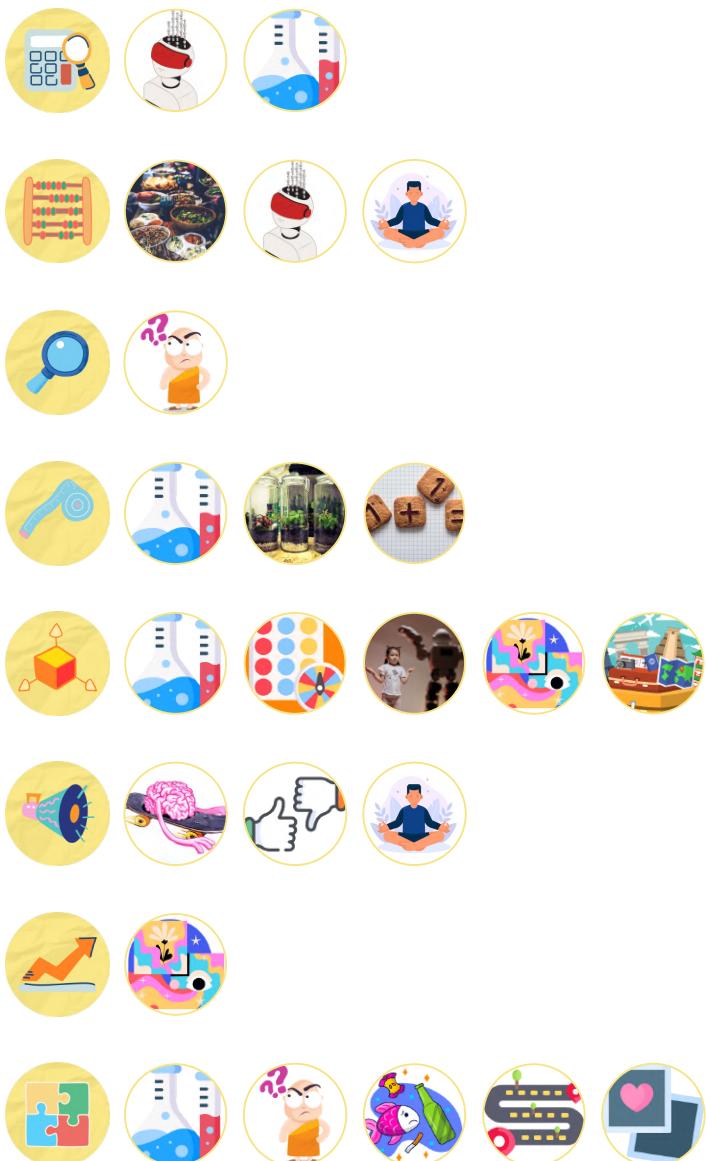
Developing my motor skills and learning to express myself using my body



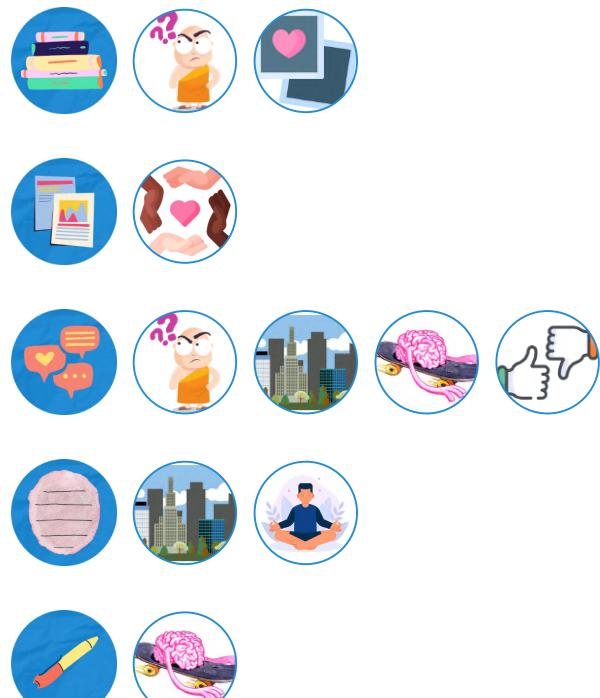
08

Pedagogical mapping - Game repartition

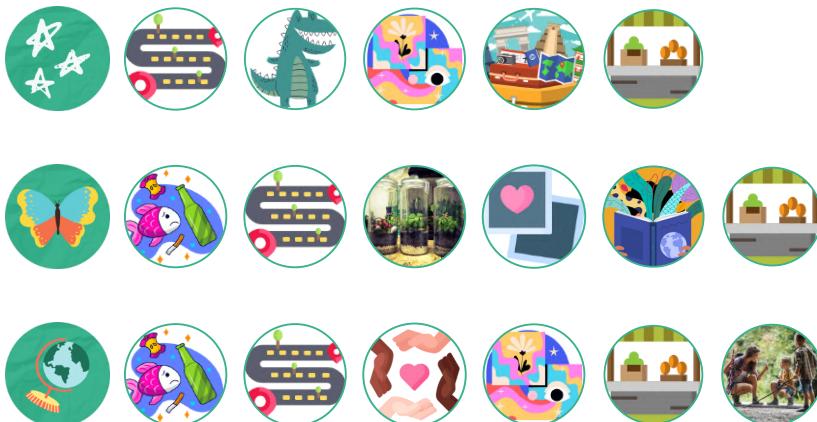
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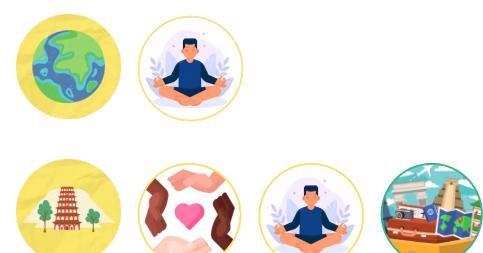
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វត្ថុ



Pedagogical mapping - Game repartition

Physical activities	Being creative - visual arts & music	Acquisition of a moral and civic culture									
		Questioning the moral									

We keep in touch!



COLLECT YOUR TOKEN OR ASK US QUESTIONS

Get in touch with us **by mail**: contact@unplugged-quest.eu and **collect your tokens and prizes!** We are here to help, do not hesitate to ask!



DISCOVER OUR PARTNERS

Visit us physically in **France, Belgium, Bulgaria, Italy and Austria** and discover our amazing spaces or discover us online through our website: <http://unplugged-metaverse.eu/>



CREATE YOUR OWN GAMES FOLLOWING OUR APPROACH

Feel free to **create your own games** thanks to our freely accessible template available here: https://miro.com/app/board/uXjVP9M0ggA=/?share_link_id=716659515511



GIVE US FEEDBACK AND CORRECTIONS

This quest and associated games have been made with the best quality possible and a true will to participate in the emergence of amazing content in the field of computational thinking, creativity and gamification in primary schools. Though, we are only humans! Should you discover mistakes or corrections to be made, do not hesitate to get in touch with us! We will make sure you get rewarded and credited for your help!



PARTNER WITH US IN NEW PROJECTS

All the members of the consortium are open to new cooperation, either with schools but also with creative companies and actors. We are launching regularly new initiatives. Keep us updated if you want to join them with us!



<http://unplugged-metaverse.eu/>



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