



## Using escape rooms in teaching

School Break Handbook 1  
[www.school-break.eu](http://www.school-break.eu)

Co-funded by the  
Erasmus+ Programme  
of the European Union



# Contents

1. Introduction .....	3
Escape rooms: What are they? .....	3
Escape rooms and education .....	3
Why escape rooms are effective for learning.....	4
Learning by designing escape rooms .....	5
Challenges associated with using escape rooms in education .....	5
2. Types of escape rooms in the classroom.....	6
Small group (traditional) ‘escape the room’ .....	6
Large group ‘escape the room’ .....	6
Small group escape boxes .....	6
Online single-player escape rooms.....	6
Digital technologies for escape rooms .....	7
3. Using escape rooms in the classroom .....	7
Learning affordances .....	7
Integrating escape games within the course of a learning unit .....	7
Planning and playing an escape room in class.....	8
The importance of debriefing .....	9
4. Practicalities.....	9
Obtaining escape rooms.....	9
Difficulty .....	10
Timing.....	10
Location and interruptions .....	10
Physical setup.....	10
Briefing .....	11
Communication.....	11



# 1. Introduction

In this guide we will explore the potential of using escape rooms in teaching and learning.

## ***Escape rooms: What are they?***

Escape rooms - or escape games/breakout boxes - are a relatively recent entertainment phenomenon that became popular globally in the early 2010s and now can be found in many cities around the world. Typically, an escape room will be played by a small team (usually 4 to 8) of people over the course of an hour (although some are longer and some can be played by many more), who will be 'locked' (in practice they are seldom physically locked in) in a physical room and have to solve puzzles within the time limit in order to escape.

The game will take place within some overarching narrative with a core goal, for example to escape from the mad scientist's lab with the secret formula, defuse the bomb and save the world, or escape from the Pharaoh's tomb with the treasure. This narrative will influence the way in which the room is set and dressed as well as the types of puzzles that are within it.

The role of the narrative can vary, as escape rooms can be either predominantly theme-driven or narrative-driven. Theme-driven escape rooms revolve around a theme constructed by the decorations, props, audio tracks and audio-visual materials that are used to match with the theme, but the narrative is not a priority. In contrast, narrative-driven escape rooms have a strong plot and characters and the players are placed into a role inside the storyline through some type of a pre-game video or a story presented by the Gamemaster, the goal will usually also tie into this narrative.

Players are typically given a short briefing covering the narrative of the room, their goal, how to use any tricky padlocks or unusual items, and general health-and-safety instructions before being 'locked in' and let loose on the puzzles. Generally there will be a visible countdown timer to keep the tension in the room high (which might be also supported by a dramatic or scary soundtrack), and a way of communicating with the Gamesmaster (who will be keeping watch with a camera in the room) such as a telephone, walkie-talkie, or text on a screen. The Gamesmaster will be able to offer hints throughout the game to ensure that the players are progressing and having fun. Teams that are successful at solving all the puzzles in the time will usually get a 'success' photo and sometimes be included in a leaderboard.

## ***Escape rooms and education***

Since escape rooms have become an increasingly popular leisure activity, educators have quickly seen the potential for learning.

- *Escape Ed* in the US was one of the first educational escape room developers, focusing on maths and science games in high schools.
- In Canada, Scott Nicholson is at the forefront of designing escape games for education
- In the UK, Samantha Clarke at the Disruptive Learning Lab in Coventry University and Liz Cable at Leeds Trinity University have been working with escape games in Higher Education for several years.
- The *EduScapes* project, supported by the EU LearningGames project has been running for the past four years, and focuses on students' learning through creating their own games rather than just playing them.

- Breakout Edu Germany is a rather active facebook group discussing escape rooms in education and providing examples since 2017.
- In Spain, Christian Negre provides a Definitive Guide on Escapes and Breakouts. Here you can find resources to implement spaces to create breakouts or some interesting examples.
- The Gate School Escape Room project is based on the creation and implementation of an educational escape room in the field of the English language titled as “The Gate School Escape Room”. First of all, as far as the contextualization of the educational escape room is concerned, “The Gate School Escape Room” is an educational proposal designed and implemented in a secondary educational centre (Colegio Safa-Grial) located in the city of Valladolid of the Community of Castilla y León. The main participants in the educational proposal are concerned, the target classroom, that is, 3o ESO A, is comprised by 27 students, 14 girls and 13 boys, whose age range from 14 to 16 years.

As with the design of all educational games, creating a good educational escape room is not easy but involves getting the right combination of fun and playability coupled with the intended learning outcomes embedded in a way that is seamless and doesn't detract from the game play. It is this balance of fun and learning that is crucial to the design of an effective educational game and can only be achieved by designers who have the right mix of educational and game design skills, and time devoted to prototyping and testing. The advantage of an escape room is that they are simple to mock-up and test, and can be tested in parts rather than as a whole. Developing video games is outside the expertise of most teachers, but escape games can be created by anyone with an imagination.

### ***Why escape rooms are effective for learning***

There are a number of pedagogic reasons why playing educational escape games offers a valid and engaging approach to learning. The following are reasons connected to the development of so called transversal or soft skills:

- **Social Skills.** Escape rooms offer the opportunities for groups of students to work together to solve puzzles, gaining the benefits of knowledge and insights from others. Good escape rooms are designed in such a way that they cannot be solved alone (for example they need two people in different spaces to solve a code) so that players have to communicate and collaborate in order to solve the puzzles.
- **Problem-solving.** Escape rooms present a variety of different types of puzzles from codes and cyphers and traditional puzzles, to finding or manipulating objects and complex digital puzzles. Players are presented with a variety of problems that they have to solve, gaining skills in thinking through problems and developing approaches to solve them.
- Players also develop **resilience** as they make multiple attempts to solve puzzles in different ways, and creativity as they come up with different novel solutions.
- **Lateral thinking.** Many of the problems and puzzles that players face in escape rooms require them to think differently from their usual mindset and combine objects and ideas in novel ways. This type of thinking is an important underpinning to creativity and innovation.
- **Time management** is also at stake in a time-based challenge. Together with collaboration, this can promote overall personal resource management.

- **Engagement.** The very fact of playing an exciting, time-dependent immersive game may be engaging for many learners (although not all) and the physical real-world nature of the game offers an immersive play experience that is motivating for many people.

Apart from these transversal skills escape rooms offer a high potential for initiating subject specific learning. The mechanics of Escape rooms is based on puzzles, tasks, quizzes etc., so that it is somehow natural to integrate content items into a game. Every step of an escape room can be designed to stimulate or test specific knowledge or abilities, making it an effective learning setting also for subject-matter content.

### ***Learning by designing escape rooms***

If students go beyond playing escape rooms to creating their own, then the iterative process of design, testing and refinement brings the additional benefits of learning through failure. As it is impossible to get a game design right first time, the game will inevitably not work entirely as expected on the first test; some puzzles will be too hard, others too easy, some might not work at all, the flow might be wrong. There needs to be a full explanation of the learning and how this will be achieved. Engaging with the design in an educational escape room means thinking backwards, to what knowledge and abilities should players have in order to solve the puzzles and quizzes - as in a game-based form of peer-teaching.

By giving students this space to make mistakes, we provide them also with a platform to build resilience and confidence concerning not getting things right first time but developing and improving over time; this means that students are less afraid to take risks with their learning because failure has a less negative construction; in turn, this can lead to the development of innovative and creative ideas and practices.

A pedagogy for student learning through the design of escape rooms is described in Handbook 3.

### ***Challenges associated with using escape rooms in education***

While there are many sound educational benefits for using escape rooms for learning, it is also worth mentioning some of their drawbacks:

- First, they take expertise in both game and learning design to create from scratch (although there are a growing number of off-the-shelf games available, see Section 5 Resources)
- Escape rooms are time- and teacher-intensive as only small groups can play a game at any given time, and games need to be monitored to ensure that they are on track and give hints and clues, this includes setup time.
- An escape room kit - including lockers, pads, chains, etc. - can be expensive, and needs to be robust enough to withstand regular manhandling.

There are ways to make this more manageable in practice, which are discussed in the next section, but overall they will still be more time-intensive to run than traditional teaching.

It's also worth noting that escape rooms (and games in general) will not appeal to everyone and may be considered silly and frivolous by some learners, particularly older ones. There may be others who feel deeply uncomfortable by the idea of being 'locked' in a room, and it is

important to recognise these concerns. Being clear with students what the escape room is for and the pedagogic advantages is key to their acceptability with a wider group of learners.

## **2. Types of escape rooms in the classroom**

There are a number of different ways in which escape rooms can be used in classroom settings, depending on the number of students, the number of teachers who will be available, and the flexibility of the space.

### ***Small group (traditional) 'escape the room'***

Much like the traditional leisure form of an escape room, students work in small groups in a 'room' to solve puzzles and escape. These can be dedicated rooms in schools or on campus that are used for the sole purpose of the escape room, but more commonly they will be classrooms or meeting rooms that are repurposed. In the first scenario, there is more scope for the designer to create puzzles that are permanent and can be, for example, fixed to a wall, but in most cases the props and rooms involved will need to be portable. These small rooms give the most immersive experiences, but they are also highly manpower-intensive and thought needs to be given to how the teacher will watch what is happening (assuming they are not in the room) and how they should communicate with students.

### ***Large group 'escape the room'***

Similar to the small group but on a larger scale, it is possible to design a game that will engage a whole class of students, up to around 15-30 in number and possibly larger. This works by having a large number of parallel puzzles that can be solved individually or in small groups, which fit together to solve the overall game. Puzzles that take a lot of manpower (e.g. trying 100 keys to see which one fits or forming a human chain to carry water over a long distance) can form part of this type of game.

### ***Small group escape boxes***

Most commonly used in classroom settings, the escape box (or bag) works the opposite way from an escape room, in that they consist of a number of boxes-within-boxes that players have to find their way into. The advantage of this approach is that they are portable and can be replicated a number of times within the same room, so that students can cluster in groups at tables and each group can play the same game (or slight variants of the game to avoid cheating). Using escape bags or boxes means that the games can be carried around to different locations and do not need to be confined to a classroom setting, but could be played outdoors or in multiple locations, including being more easily replicated for parallel playing.

### ***Online single-player escape rooms***

Moving out of the physical realm, there are also digital escape rooms that can be played on computers or as apps on mobile devices. These support problem-solving but do not have the collaborative advantages of real-life escape rooms; however they could be played collaboratively in a classroom setting (e.g. by students working in pairs).

## ***Digital technologies for escape rooms***

In terms of technology, it is possible for escape rooms to be entirely analogue, using physical technologies such as magnets, padlocks, mechanical locks and keys. Many however will be hybrid, using digital locks, tools such as laser pointers and UV lights, or using mobile devices or augmented reality as part of the experience.

Some games, such as the single-player escape rooms mentioned above are played in a fully digital environment. There are emerging models of VR multiplayer escape games played face-to-face (e.g. <https://www.breakscapegames.com>), but there are not yet any examples of remote multiplayer educational escape room (although this is probably an area to watch for the future).

## **3. Using escape rooms in the classroom**

In this section, some of the practical issues in using an escape room in the classroom are discussed.

### ***Learning affordances***

As mentioned above, escape games lend themselves to learning a range of transferable cross-curricular skills - such as collaboration and team-building, problem-solving, lateral thinking, and creativity - because of their intrinsic design that involves working together to solve puzzles. Moreover, educators will want to design escape rooms that address curriculum areas across a range of discipline areas.

- **Subject knowledge.** Puzzles can be designed that test knowledge about a subject, for example putting historical events in the correct order or recognising which characters came from certain novels.
- **Skills.** Application of knowledge to tasks that develop or test physical or mental skills, for example using a microscope to identify a certain type of insect, hitting a target with a ball, or a code that involves translating binary into decimal.
- **Familiarisation.** Where the puzzles are not necessarily directly-related to an area of skill or subject knowledge but allow the learner to familiarise themselves with an artefact related to the discipline, for example codes using the periodic table.
- **Practice.** Where learners have to practice a core repetitive skill, such as a mathematical formula, to consolidate learning, so for example students could solve problems to find the circumference of a circle for circles of three different sizes.
- **Research.** Learners can practice their research skills in the room, applying both their skills and subject knowledge in order to solve a puzzle, for example using a bilingual dictionary to translate a secret message, or looking up information in order to solve a puzzle.

### ***Integrating escape games within the course of a learning unit***

Escape rooms can be used in several different ways as part of a learning experience.

- They can be used diagnostically in order to test where students are before starting a new topic or area of study so that the teacher can gauge where they are in the subject, and identify any gaps and misconceptions that need to be addressed.

- They can be used to introduce new information, concepts, or ideas to students or as a kind of eye-catcher to make students curious.
- They can be used for consolidating knowledge and applying skills already learned in a previous step.
- They can also be used formatively - both for the teacher and students - to assess progress and areas that need additional attention.
- Finally, they can also be used as a summative test at the end of a block of study to check that the intended learning outcomes have been achieved.

In many countries it is difficult to fit activities such as escape rooms into an existing classroom setting because the curriculum is prescribed and already full. This is much more the case at high school or secondary education than primary schools where there may still be some flexibility. This makes it hard sometimes for more 'fun' or innovative teaching approaches to be embedded or accepted in schools.

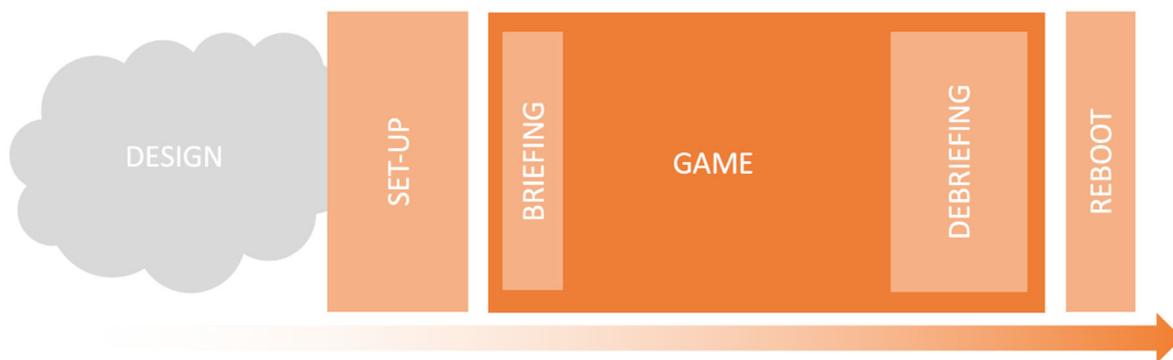
Though the classroom environment and inflexible lesson times may also make this difficult, there are a range of ways in which escape games can be embedded with the classroom:

- Within core subject curricula - if there is a close mapping between the curriculum and the content of the game then it may be possible to fit these into the standard teaching class.
- In some countries during induction - this is a common time to use escape rooms before teaching the prescribed curriculum starts; it is also typically a dull topic that students engage with poorly so escape rooms are a good option here.
- After-school clubs - there are far fewer restrictions on optional activities so this can be a good time to get learners to engage with activities such as escape rooms, however as it is optional, students will attend by choice so the activity will not be available to all students in a class.
- Enrichment - many schools in the UK offer 'enrichment' times, often one or two weeks before the start of the summer holidays or after exams that is specifically designed for different types of non-academic activities such as sports or work experience. Escape rooms may fit in well here.

### ***Planning and playing an escape room in class***

Playing an escape room in class requires some preparation. Practical aspects will be discussed in the following sections, but here we want to provide an overview of the flow, assuming that the escape game has already been designed or otherwise taken from some source.

First, the game should be set-up (prepare the room and props, test all puzzles). When the class (or a group of students) come to play the game, they should be first briefed about the rules, the goal and immersed in the theme or narrative. They then play the game, within the set time limit, which is followed by a debriefing. This moment is paramount for the learning process, and is commented more extensively in the next paragraph. In case another group or class should play the room again, the room should be rebooted - and making a room easy to reboot is an important usability feature for an educational escape room playable at school.



### ***The importance of debriefing***

Debriefing is absolutely key to supporting transfer and reflection from games. Whatever way an escape room is embedded into the classroom, it is crucial that there is time built into the design of the learning experience to embed reflection to consolidate learning. Learning happens within the game, but it only becomes aware and stable after it is brought to light through discussion.

The debriefing session at the end of an educational escape room is as important as the game itself as it offers players the opportunity to talk through what happened (including their feelings and emotions), reflect on what went well and what didn't, and why.

As well as discussing how the teams performed, exploring common mistakes and problems, and linking the game puzzles to the curriculum, this is where the teacher can check that the students have met the intended learning outcomes for the game and explain any errors that occurred or misconceptions that learners may have left the game with.

## **4. Practicalities**

In this section we will explore some of the practical aspects of using escape rooms in the classroom.

### ***Obtaining escape rooms***

The most difficult issue in using escape rooms in the classroom can be getting hold of the room designs that suit your needs. It is possible to buy games off-the-shelf that can be used straight out of the box, or modified to meet the needs of a particular teacher, space, or curriculum (see Section 5 *Resources*) but these can be expensive and impractical for large class sizes.

Another option is for teachers to make their own escape games, which can be relatively inexpensive but can be time-consuming and require specialist skills (or a steep learning curve; this is explored in Handbook 2).

A third option is supporting projects in which students make their own escape games, which has a range of pedagogic advantages discussed earlier, but does again require a greater overhead in terms of cost and time commitment (this is the topic of the third Handbook).

## ***Difficulty***

Like any game, it is important to balance the difficulty in an escape room so that it is not too hard that it is frustrating and not so easy that it is boring. This can be difficult for team games, particularly where there is a range of abilities in the team or the class overall. A good escape room will be designed so that there are a variety of different puzzles and levels so that everyone can be engaged with a fitting task. Another way to manage the level of challenge is through the use of hints and clues, which can be designed generically or tailored to particular groups. It is always tempting when watching people struggle with a difficult puzzle to give hints early on, but this should be avoided - it is the process of struggling with a difficult puzzle and then solving it that is so satisfying and engaging and giving hints too early will spoil this.

Key to this is gauging when players are genuinely stuck and when they are enjoying the struggle; one option is to make players ask for hints when they want them (although then the more competitive teams will refuse to ask for hints and may end up stuck for much longer than is educationally useful).

## ***Timing***

The amount of time you have available to play an escape room will impact on the practicalities of use. In practice, which a room might take, say, 60 minutes to play there will be 15 minutes briefing at the start, debriefing at the end, and time to tidy up and reset the room in-between games. All this needs to be factored in when thinking about how the game will play in the classroom. Of course, while commercial escape rooms are usually around one hour in length, specific time lengths may be more appropriate in a classroom setting.

## ***Location and interruptions***

Consider where the game will be played, what elements are already there and how the game will integrate. For example, if it's to be played in a classroom, how will players work out what elements are part of the game and what are part of the classroom? How will they know which parts should not be touched and which can be explored freely? If the location is a classroom it is good to use props that look like part of the location, for example a clock with a hidden compartment or a soda-bottle safe in a waste paper bin.

Also consider whether the game is likely to be interrupted (e.g. student coming in late, fire alarm) and what the implications of any interruption might be for the game play.

## ***Physical setup***

Before and once the game has been played it will need to be setup so that it can be played by another group. If there are several groups playing one after the other it will be important that this can be done quickly and efficiently. It is therefore important that you have a system for making sure that everything is in its correct place in the room, that padlocks are locked and that boxes have the correct contents. This can be done using sequenced index cards, a room plan, or checklist and most commercial games will come with a plan; there are several options (discussed in Handbook 2) and it is just important that a tested system is in place.

## ***Briefing***

It is useful to have a standard briefing for players, both to introduce them to the escape room format and ground rules of the genre and to orient them to the narrative of the specific game being played. This should cover health and safety issues (e.g. don't climb on the bookcase), make it clear what is - and what isn't - part of the game (e.g. anything above head height or with a sticker on it is not part of the game), set expectations about what is acceptable behaviour in the room (e.g. don't use brute force), introduce difficult or unusual locks, and explain what happens in the case of a genuine emergency. Introduction of the narrative can be verbal, but also short video introductions are common.

## ***Communication***

There will need to be a system for watching what is happening during the game and communicating with the players, which can take place in a variety of different ways. The most simple is for the teacher/gamesmaster to be present in the room at the same time (and this is usual in large scale games or using escape boxes) but this can impact on the level of immersion experienced by players unless the teacher is 'in character'.

For smaller rooms it is possible to rig up a camera and mobile phone (such as a GoPro) to watch what is happening in the room, but for educational rooms this will probably be an unnecessary complication. If the teacher is in the room, communication is straightforward, but if not then this can be achieved in a variety of ways, for example using a telephone, walkie-talkie, or texting via a tablet or smartphone.