

Background

This activity belongs to a series of learning how to design riddles for escape activities which was issue of a summer school for girls “can you escape” (<https://icse.ph-freiburg.de/gem/gem2022/>).

This particular activity can be used in a school class, school project week or in an out-of-school activity in which an escape activity (such as an escape room, an escape box or a digital escape room) is developed. Riddle design then is an essential skill for preparing any kind of escape activity.

(Educational) escape activities have become an interesting, fascinating and attractive tool to foster learning. Students get involved easily and learn along the way. Teachers can integrate escape activities into their everyday teaching to make school content more appealing or to repeat and revise established content or skills.

Activity

For any escape activity, it is inevitable to use riddles that follow certain rules. The riddles have to be well chosen and thought-out in order to generate interest and meanwhile also lead to a set goal. Also, the goal has to be clear and achievable.

To make the start easy, the girls are confronted with different types of riddles at the beginning, to find out characteristics, similarities and differences of riddles themselves.

Input

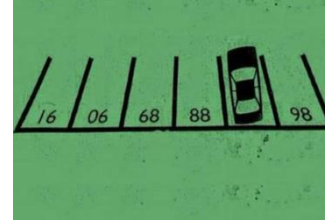
- Riddles, that can be solved right or wrong by coincidence rather than knowledge: “I tell you two truths and one lie about me – which one is the lie?”
- Talking about riddle types that participants already know, e.g. sudoku, crosswords, logicals. Participants should think about which riddles would be practicable for an escape activity and why.
- Different riddles are shown to the participants. Three riddles are looked at closer and participants have to sort if the riddle needs knowledge or has a “plain” riddle character. Some more riddles have to be sorted this way in order to make the participants sensitive for educational escape activities vs riddle escape activities



Mia hat den PIN ihrer SIM-Karte vergessen. Glücklicherweise hat sie noch einen Zettel mit folgenden Hinweisen:

$$\begin{aligned} B + 2 &= D \\ A - C &= C \\ C \cdot B &= A \\ \frac{A}{B} &= D \end{aligned}$$

- It is discussed what this differentiation is needed for: riddles that need knowledge help us to learn whereas “plain” riddles often foster our interest. A mixture is perfect for a good escape activity.



- It is discussed, what characteristics are needed for a riddle used in an escape activity. Can all riddles be used as escape activity riddles?

Riddles have to be

- appealing, interesting, motivating
- diverse
- not too easy, not too hard
- they have to have ONE distinct solution
- they should address different skills and knowledge so different people can contribute

It is discussed if riddles that seem to be not suitable for an escape activity can be used anyways, eg. a “Where is Waldo?”-Picture. Such riddles can be used of e.g. a grid is put on the picture and the area where Waldo is found is named this way (e.g. “D4”).



Task

Task for the participants: think of a riddle that is

- appealing and motivating
- deals with a mathematical or scientific topic
- has one distinct solution
- addresses different skills and knowledge.

Time necessary

45 minutes input
≈ 2 hours of individual work (depends on riddles and creativity)

Learning outcomes

Participants

- are able to differentiate different types of riddles and can decide if a riddle can be used in an escape activity.
- can design appropriate riddles for escape activities and can differentiate between advantages and disadvantages of riddles in different settings.

- know how to make a riddle, that can seemingly not be used in an escape activity setting, applicable to be used as an escape riddle.

When the participants designed their own escape boxes and prepared riddles for the boxes, the learned skills were needed in order to elaborate a well working and appealing escape activity.

Costs

Only in the case of an out-of-school activity an hourly rate x3 for teacher as well as mentors that are guiding the girls during the working phase.
The number of mentors involved is depending on the size of the group. We consider 1 mentor per 4 girls to be the optimal.

Materials

A power point presentation and online escape rooms that serve particularly as examples for the riddles are available in German. Contact: icse@ph-freiburg.de