Scripts for the films about the apps of the story *The lost treasure* (11-14)

All the games begin and end in the same way:

Beginning

The initial image is projected during 5 seconds. The title includes: the name of the app (for instance "Key exchange"), the mathematical subject -- "Cryptography", the corresponding age-group -- "11-14", and a link to the app in the repository -- "https://...".
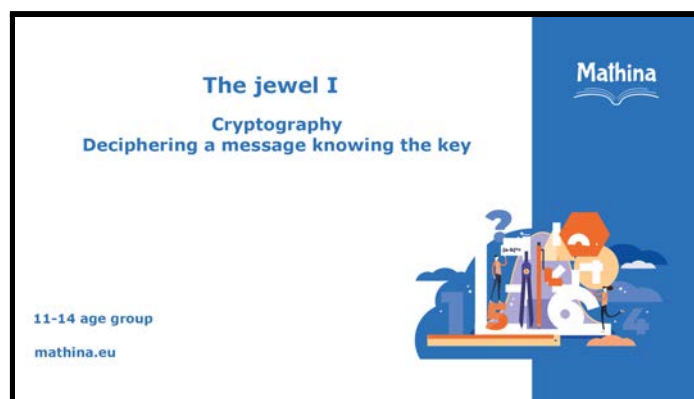
Ending

Background: black screen. **White text displayed**:

- Mathina Project with the UE logo;
- List of partners with the corresponding logos;
- The educator's repository address.

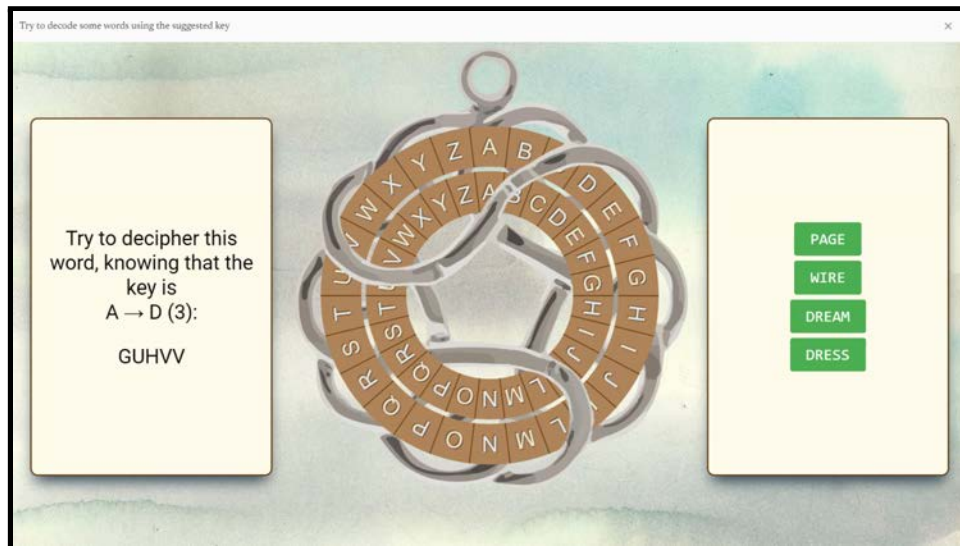---

Scripts for the films about the apps:[1]

Game 1, The jewel I

1. **Background**: a static image of the app.

[1] The text in italic represents the content of the voice-over.

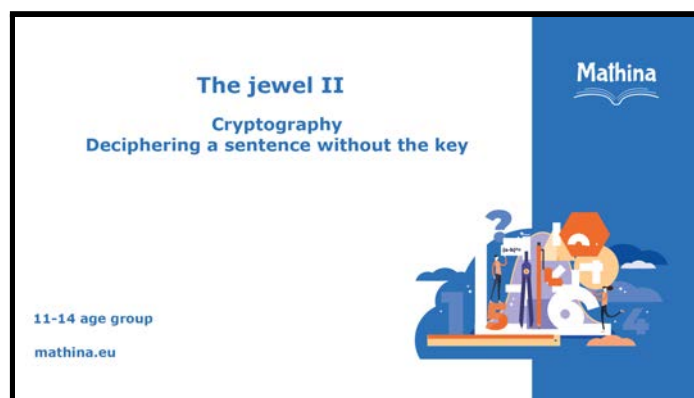- Simultaneously, the following **voice-over** is heard:

  "*The user has to decipher a word knowing the key of the cipher*"

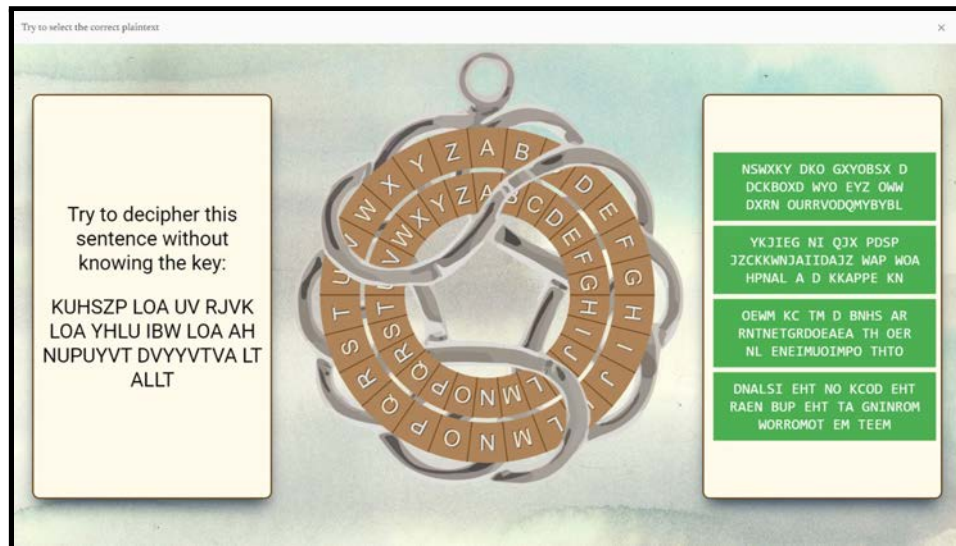2. A **screen recording** is projected showing someone solving the app. **Voice-over**:

  "*On the left, there is the word the user has to decipher. On the right, four buttons, one of them is the correct answer. The user can rotate the disks of the jewel to set it to the same key which is specified. In this way the user can get the correct answer. This is not the only possible approach: since the same letter is always encoded in the same way, equal letters can be used to get some help in identifying the correct answer.*"
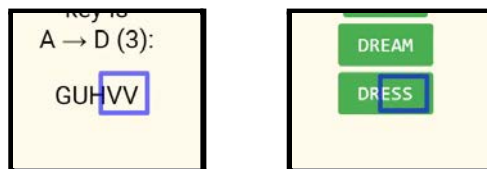
Game 2, The jewel II
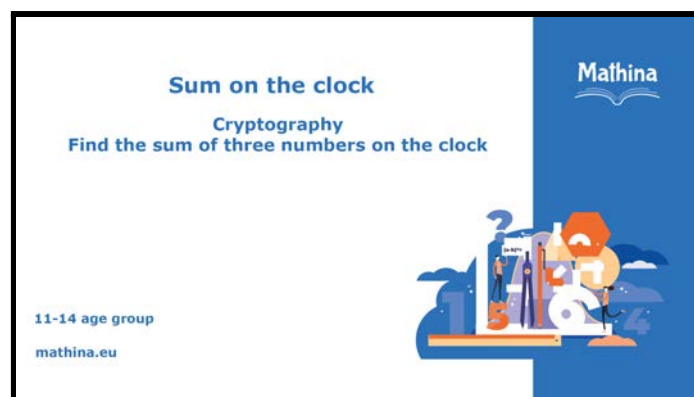

1. **Background**: a static image of the app.

- Simultaneously, the following **voice-over** is heard:

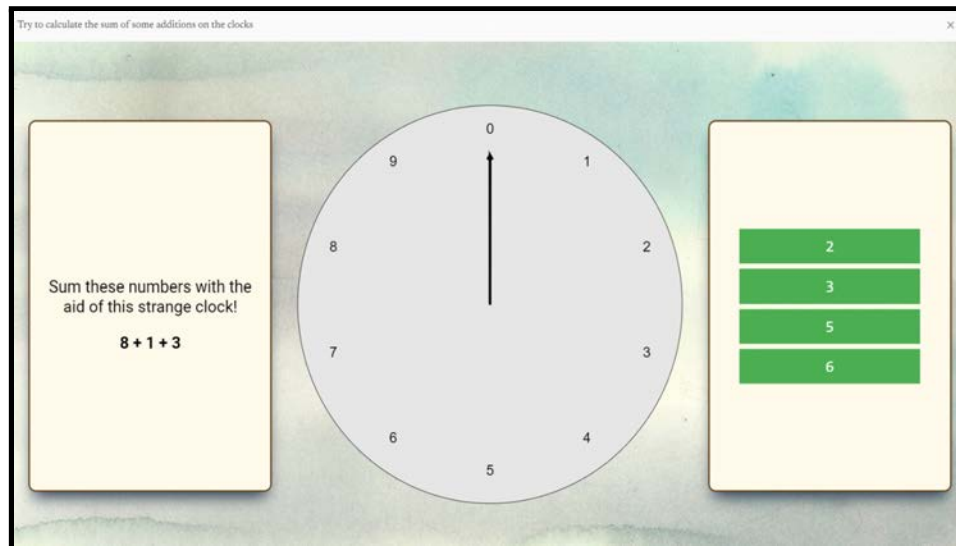 "*The user has to decipher a sentence without knowing the key.*"

2. **Screen recording**. **Voice-over**:

  "On the left, there is the sentence the user has to decipher. On the right, four buttons, one of them is the correct answer. The user can rotate the disks of the jewel to figure out the right key. Notice that all the decoded sentences seem meaningless. This is part of the riddle in the story."

Game 3, Sum on the clock
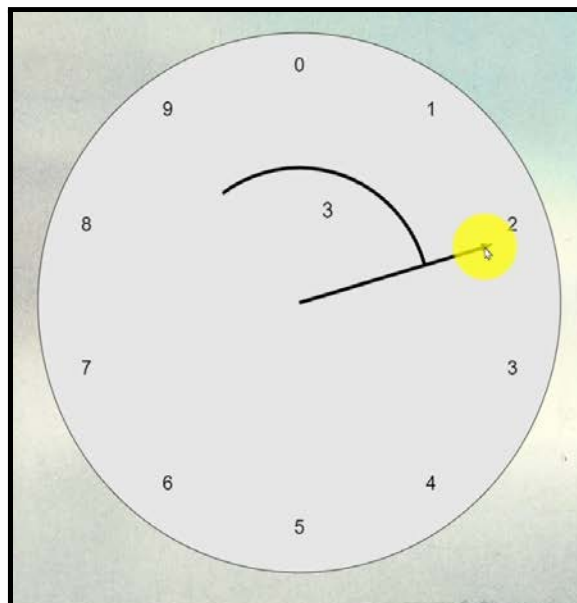

1. **Background**: a static image of the app.
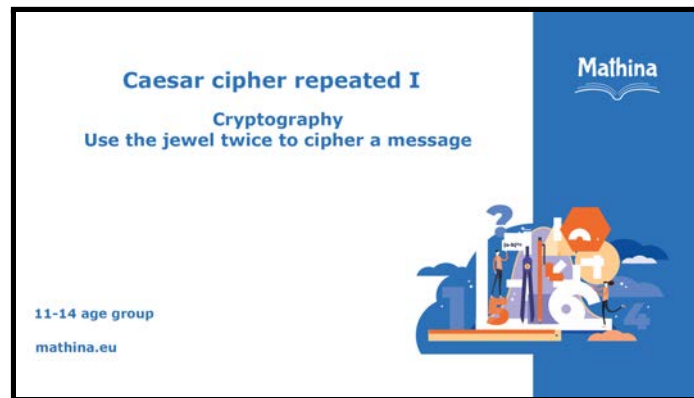
- Simultaneously, the following **voice-over** is heard:

  "*The user has to perform a sum of numbers as if they were the hours on a strange clock.*"
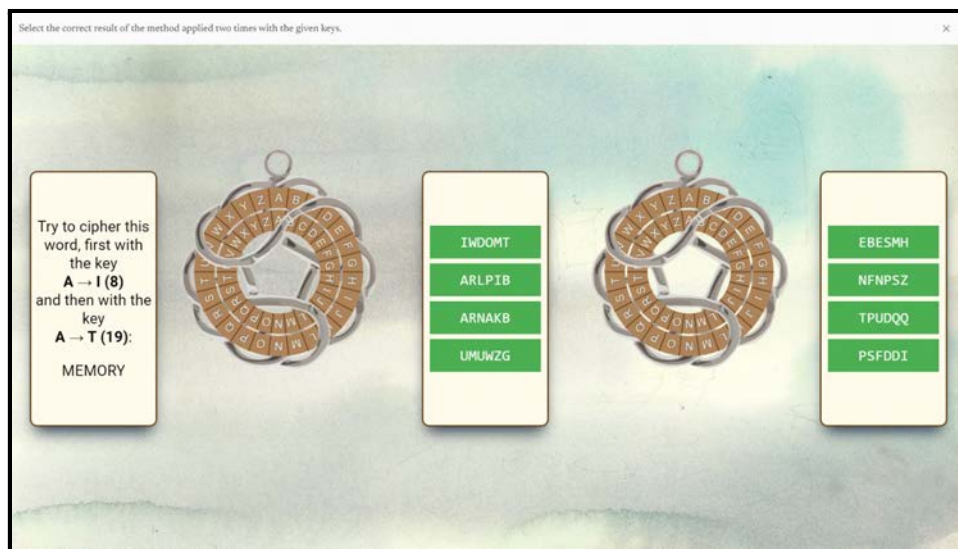
2. **Screen recording**. **Voice-over**:

  "*On the left, there is the sum the user has to do. On the right, four buttons, one of them is the correct answer. The user can rotate the hand clockwise for help with the sum. The number which appears inside the clock is the number of hours the hand has been moved.*"
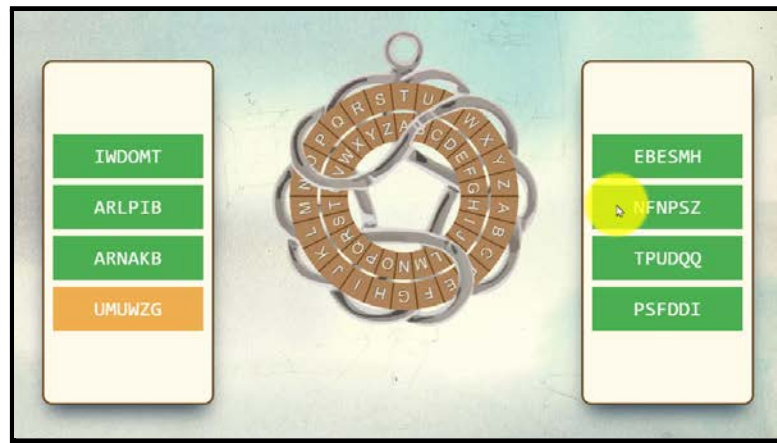
Game 4, Caesar cipher repeated I

1. **Background**: a static image of the app.
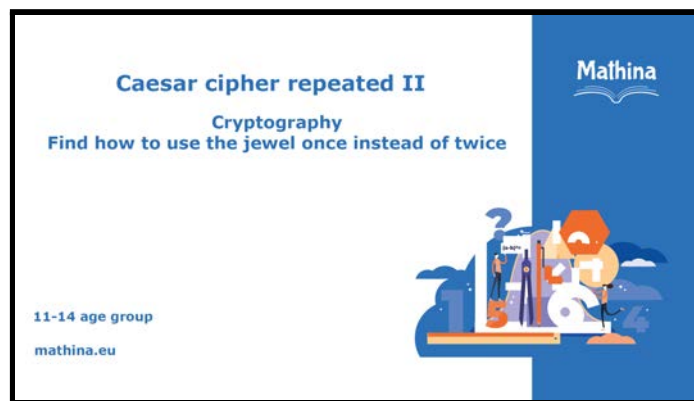

- Simultaneously, the following **voice-over** is heard:

  "*The user has to cipher a sentence two times, using two different keys*"
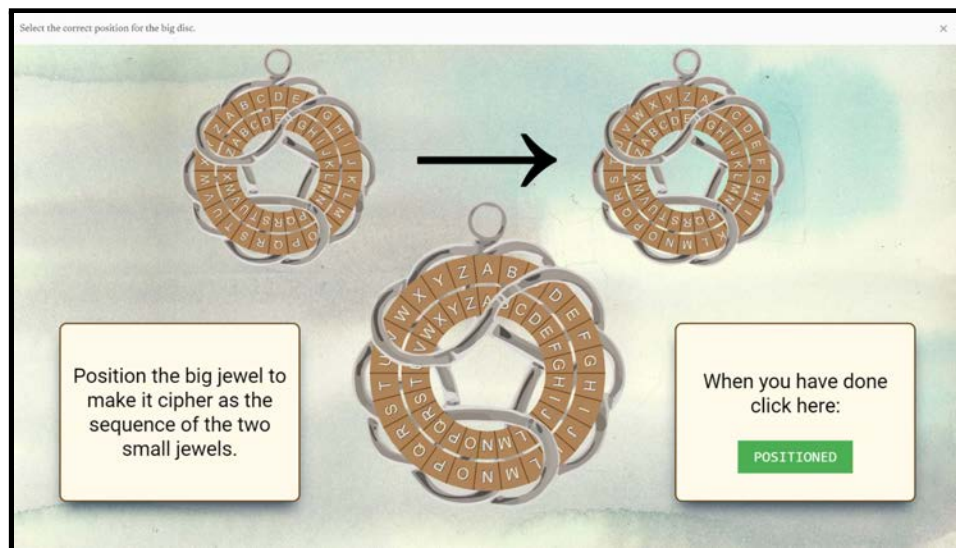
2. **Screen recording**. **Voice-over**:

   "On the left, there is the sentence the user has to cipher, and the two keys to use. In the center and on the right, four buttons for each step. There is one correct answer for each step. The user can rotate both the disks of the jewel to figure out the right key. For the buttons in the center the correct answer is the original message ciphered with the first key. For the buttons on the right, the correct answer is the previous message ciphered with the second key."

Game 5, Caesar cipher repeated II
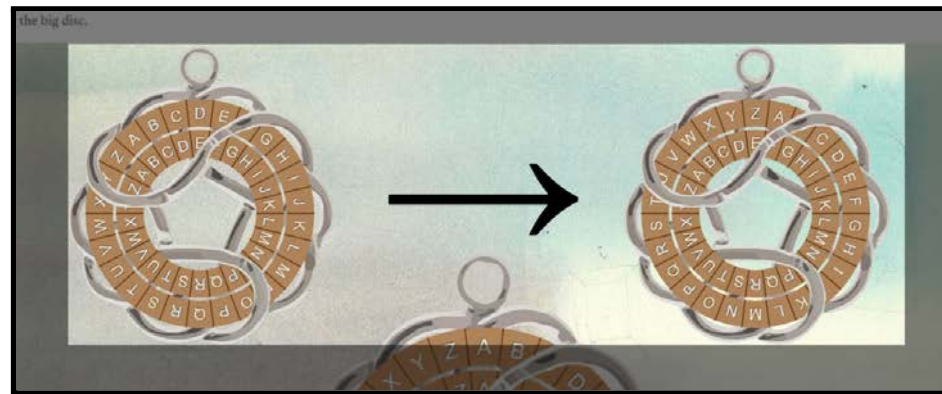

1. **Background**: a static image of the app.

- Simultaneously, the following **voice-over** is heard:

  "*The user has to choose the key resulting from two consecutive applications of the cipher.*"
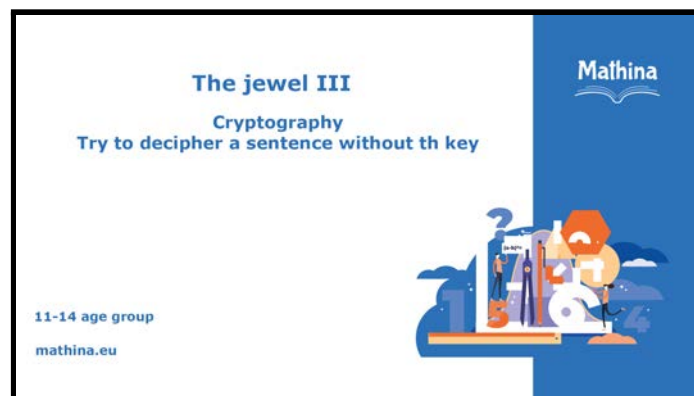
2. **Screen recording**. **Voice-over**:

  "*Above there are two disks with a fixed key. Below, there is a bigger disk. The user has to move the bigger disk selecting a key which is the same as the two previous keys combined.*"
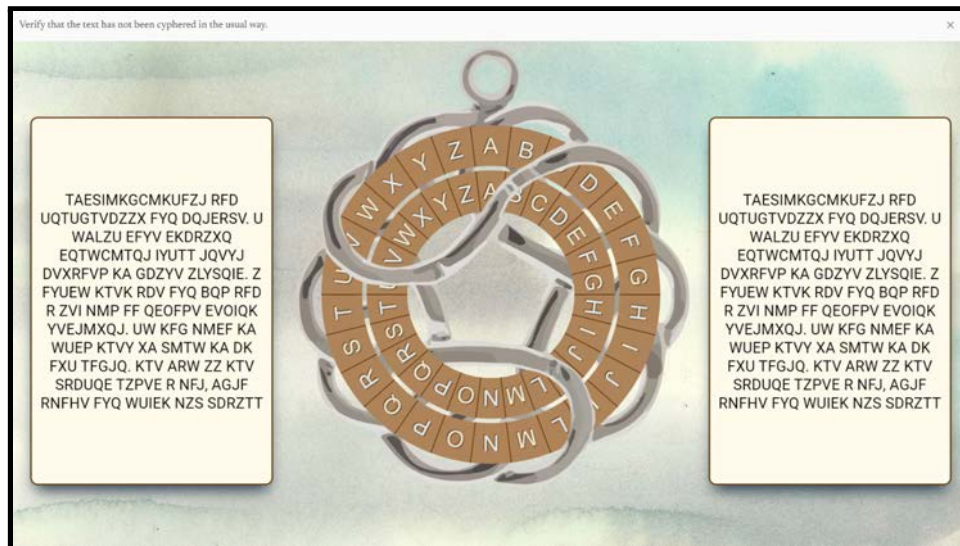
Game 6, The jewel III
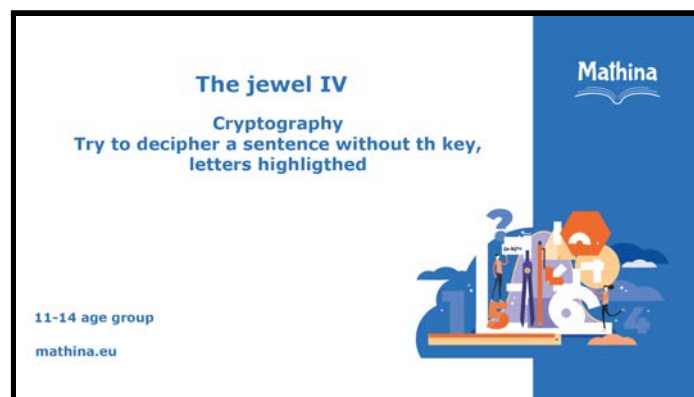

1. **Background**: a static image of the app.

- Simultaneously, the following **voice-over** is heard:

  "*The user tries to decode a sentence without knowing the key.*"

2. **Screen recording**. **Voice-over**:

   "On the left, there is the sentence the user has to decipher. On the right the sentence deciphered with the key selected by the user moving the disks. There is no win condition, since the game is just for exploration. Notice that it is not possible to decipher the sentence in this way."

Game 7, The jewel IV
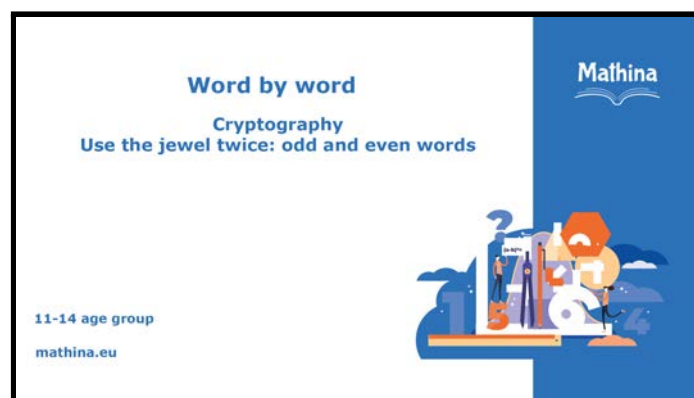

1. **Background**: a static image of the app.

- Simultaneously, the following **voice-over** is heard:

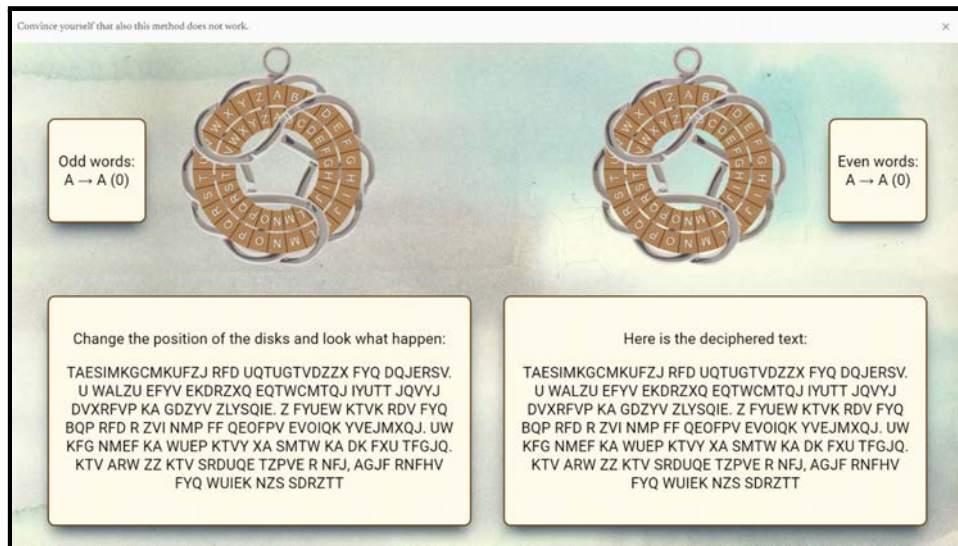"*The user tries to decode a sentence without knowing the key.*"

2. **Screen recording**. **Voice-over**:

"On the left, there is the sentence the user has to decipher. On the right the sentence deciphered with the key selected by the user moving the disks. One letter is highlighted to show what is happening. There is no win condition, since the game is just for exploration. Notice that it is not possible to decipher the sentence in this way."

Game 8, Word by word

1. **Background**: a static image of the app.

- Simultaneously, the following **voice-over** is heard:

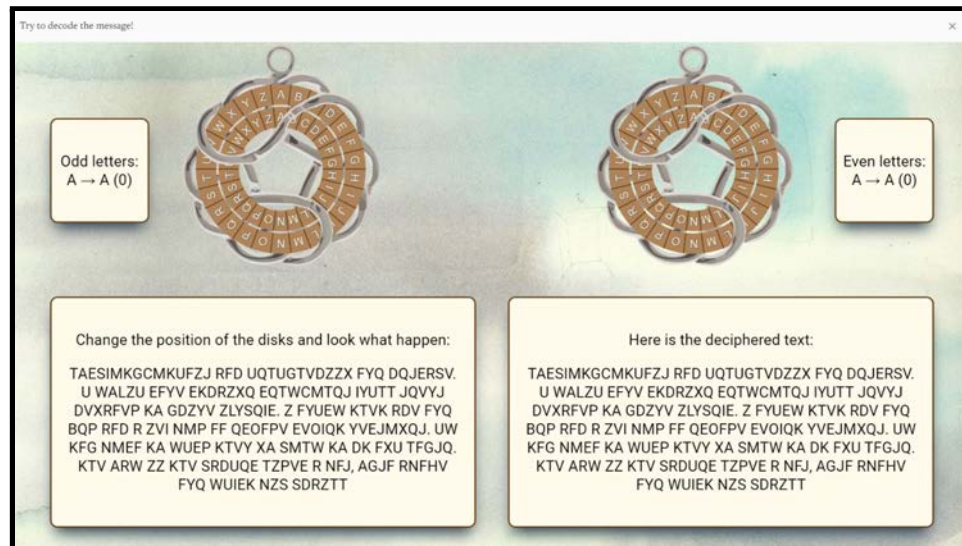 "*The user has to decode a sentence with two disks: one for even words and one for odd words.*"

2. **Screen recording**. **Voice-over**:

   "*On the bottom-left, there is the sentence the user has to decipher. On the bottom-right, this sentence is automatically deciphered. The user can rotate the disks of the two jewels on the top. One of them is used to select the key for the odd words, and the other for the even words. There is no win condition, since the game is just for exploration. Notice that it is not possible to decipher the sentence in this way.*"

Game 9, A new cipher

1. **Background**: a static image of the app.

- Simultaneously, the following **voice-over** is heard:

  "*The user has to decode a sentence with two disks: one for even letters and one for odd letters.*"

2. **Screen recording**. **Voice-over**:

  "On the bottom-left, there is the sentence the user has to decipher. On the bottom-right, this sentence is automatically deciphered. The user can rotate the disks of the two jewels on the top. One of them is used to select the key for the odd letters, and the other for the even letters. There is no win condition, since the game is just for exploration. It is possible to find a combination of keys which decodes the text.