

### 3.35 嘉諾撒聖家書院 - Room Escape Game in Maths with CoSpaces Edu

<b>Teacher Name</b>	Mr Nicolas Chan, Ms Crystal Choi, Mr Newton Wong, Ms Tiffany Tse
<b>Subject</b>	Mathematics
<b>Subject Level</b>	S1 - S6
<b>Learning Objectives</b>	<ul style="list-style-type: none"> <li>● To promote values education in making moral decisions</li> <li>● To promote students' interest in Mathematics and STEM Education</li> <li>● To enhance students' understanding and experience in CoSpaces Edu</li> <li>● To integrate and apply Mathematics and Technology knowledge</li> <li>● To promote the Art element in STEAM education</li> </ul>
<b>Applied e-Learning platform and tools</b>	CoSpaces Edu

#### Introduction of Lesson Design

Due to the pandemic, the STEM Day which was scheduled to be held at school in the afternoon was changed into a virtual games day. With the use of CoSpaces Edu, all students were able to experience a room escape game in which they had to solve a series of maths puzzles to win the game.

STEM prefects were asked to brainstorm the theme and create a number of maths puzzles for the game. Through a lot of meetings and trainings on CoSpaces Edu, STEM prefects were able to consolidate the theme and the concept arts of every scenes. Once they developed a basic understanding of the functions of CoSpaces Edu, they spent over two months into the programming and the aesthetic part of the game.

#### Learning Effectiveness Assessment

The room escape game was well-received and a 98% of all students have attempted the game. This game on CoSpaces Edu also received more than ten thousand views. This encouraging result has motivated students and teachers to continue their effort to create fun programming and game design activities with CoSpaces Edu.

#### Innovativeness, Continuity and universality of design

Regarding the theme and the storyline of the game, students showed an abundance of creativity and efforts, and there are currently no games on CoSpaces Edu similar to what our STEM prefects created.

Students have equipped intermediate skills on CoSpaces Edu and basic skills on programming, more trainings will be provided in 2022-23 to further improve their skills and opportunities will be given for them to teach younger schoolmates about CoSpaces Edu.

Room escape game with CoSpaces Edu are expected to be a concurrent every year to extend students' learning with programming in STEAM education.

### **Reflection of Teaching and Learning**

It was encouraging to see STEM prefects who did not study ICT were able to create games on CoSpaces Edu with complex programming. It is evident that given enough time and motivation, students are able to excel out of our expectations. Teacher's support and guidance were also important to help students persevere and solve problems.

The scale of this game was very large such that students needed to spend months of effort. Depending on the observed motivation and interest of STEM prefects in 2022-23, the scale of the game can be adjusted accordingly. While adjusting the scale of the game so that it will be feasible for students to finish making the game, it is also important to give them enough flexibility and freedom in deciding the storyline of the game so that they would remain motivated.