CRACKING THE
CODE

Student workbook

Team Name:

Introduction

Cracking the Code is challenging young people to design their own escape room by applying their creativity, use of maths and collaborative problem solving skills. The winning team will have their ideas brought to life and win £2,000 for their school.

This workbook will support your team to develop your own escape room to enter into the competition.

You can submit your entry by email to education@nesta.org.uk

The deadline for entries is 22nd March 2018 15:00 GMT.

Before you submit an entry, please ensure you have carefully read this introduction and visited our website http://mathsmission.challenges.org

The challenge

Inspired by 'The Crystal Maze' and growth of 'escape rooms' we are launching a nationwide youth challenge prize to design your own escape room. The challenge is open to all Key Stage 3 students, and will require you to apply your creativity, use of maths and collaborative problem solving skills.

Your team's escape room idea must contain at least four mathematical puzzle questions to reach a 4 digit code to unlock a padlock.

Your escape room idea must be based around the theme of Cracking the Code: 'the future'. It could involve gadgets, cracking computer codes and robots! Escape rooms are most exciting for the players if there is a story behind the code-breaking activities - for example a villain has locked the team inside a room and they need to escape, or there is an emergency and the cracking the padlock code will prevent something bad from happening! Try to make your story creative and exciting.

However you design your escape room, remember that you must create tasks and problems that involve mathematical skills and problem-solving.

Best 10 teams will be selected as finalists by 16 April. They will be treated to an escape room experience to get inspiration and will be invited to a final awards ceremony in May 2018 to pitch their ideas to a panel of judges, with the winning team having their ideas brought to life and winning £2,000 for their school.

Impressing the judges

The judges will be looking at:

Creativity: how unique and exciting is the escape room concept. Innovativeness of the idea; how well do puzzles fit with the theme

Use of maths: how well do the puzzles use mathematical concepts and problem-solving. Use of different mathematical concepts; strong link to maths; complex logic

Communication: how well did the team communicate their escape room idea? Written communication of report at the first stage and verbal communication of pitch at the finalist stage. Creative and clear communication of how the maths works

Inspiration

Escape rooms are physical adventure games where players solve a series of puzzles and riddles using clues and hints to find the right code, and 'escape' the room. The code must be cracked in a set time limit.

There are escape room experiences all over the world, and are based on video games and TV series that have the same idea: players have to find the solution to puzzles in order to 'escape' a room.

Investigate different escape rooms (there are loads out there) that you can use as inspiration, but do not simply copy. Remember that creativity is one of the judges' success criteria!

Eligibility and entry details

This entry form is divided into 3 sections: your details, your idea and programme evaluation.

- Teams must be formed 4-6 students
- Team members must be aged 11 - 14
- Your school must be based in United Kingdom
- Ideas must be submitted by a teacher on behalf of team (this is to ensure there is adult support for the entry, although the work must be that of the student team)

Part 1: Your details

These details will be used to contact the team.

Teacher's first and last name:	
Contact email:	
Phone number:	
Name of school	
School address & postcode:	

Team name:		
	Team member Name	**Team member Age/school year**
1		
2		
3		
4		
5		
6		

(please remember teams must be 4-6 students)

Part 2: Your idea

The first set of questions asks you to explain your escape room concept and the mathematical puzzles that players will need to solve.
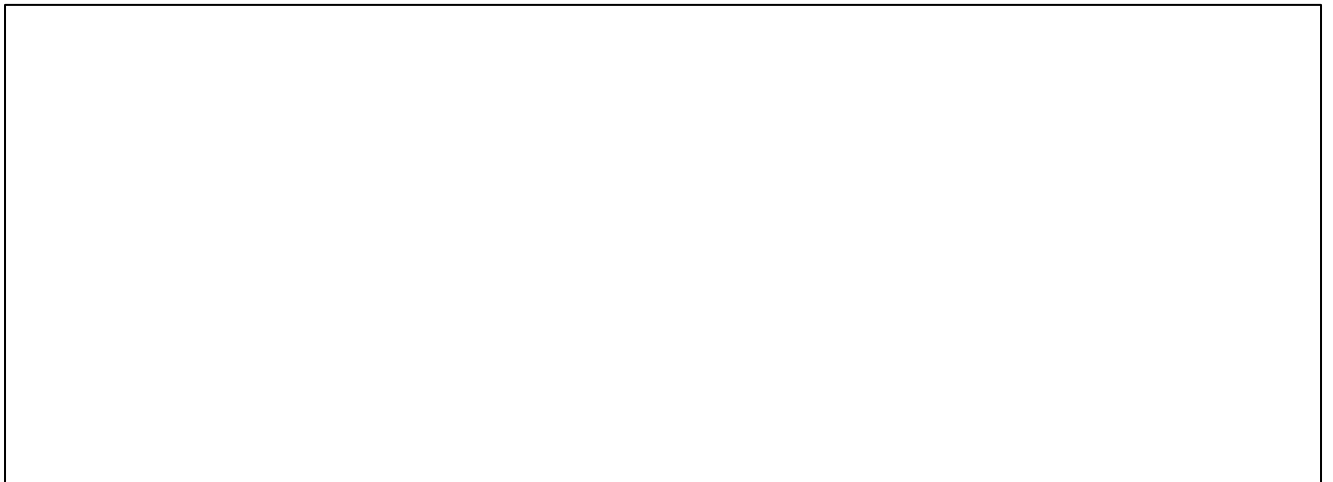
Your answers here will be used to judge your entry.

1.Describe your escape room concept. Include:
- What is the exciting story or situation that you will introduce to the players? Remember it must link to Cracking the Code's theme of 'the future'.
- Why is it important they crack the code on the padlock and escape the room?

Please attach a photo or scanned picture of your escape room - this could be a drawing or an image you have made on a computer.*(Label the scanned image -Q1)*

(300 word limit)

2. What will your four mathematical puzzles be?
- explain what kinds of puzzles they are?
- what mathematical skills need to be used and describe how they would be set up in the escape room?
- how long should it take to solve the puzzle?

Please attach a photo or scanned picture of the puzzle. This should include all of the clues involved, as well as the solution to each puzzle. Remember to test out your puzzles to make sure they produce the right answers! *(label the scanned images – puzzle 1, puzzle 2 etc) .*

(200 word limit per puzzle)

Puzzle 1:

Puzzle 2:

Puzzle 3:

Puzzle 4:

3. Provide the four digit code below that the correct answers to the puzzles will produce:

4. Explain how your puzzles fit with your futuristic story:

(150 word limit)

5. Explain how your escape room provides a difficult test of mathematical skills and problem-solving. Include:
   - What makes the escape room a challenge?
   - Where might the players go wrong in solving the puzzles?
   - How will your clues help them to get past these difficulties?

(300 word limit)

6. Explain how your escape room tests different skills? Include:
   - What other subjects have you include in the design of your escape room?
   - How will your puzzles support team work?

(200 word limit)

Part 3: Programme evaluation

1.Have the team members worked together before entering the prize?   Yes/ No

2. How would you currently rate your skills as a team in the following areas?

	Some improvement needed	No improvement needed	Hard to say
Teamwork			
Communication			
Planning			
Maths			
Problem-solving			
Creativity			

3. Did your team ask for help from other people?
   - If so, who?
   - How did they help you?

4. What external resources did you use for inspiration?

5. Do you think your team will continue developing creative, maths and communication skills outside of classroom work and homework after this competition?(please circle)

All people   Some people   Nobody