Escape the Room
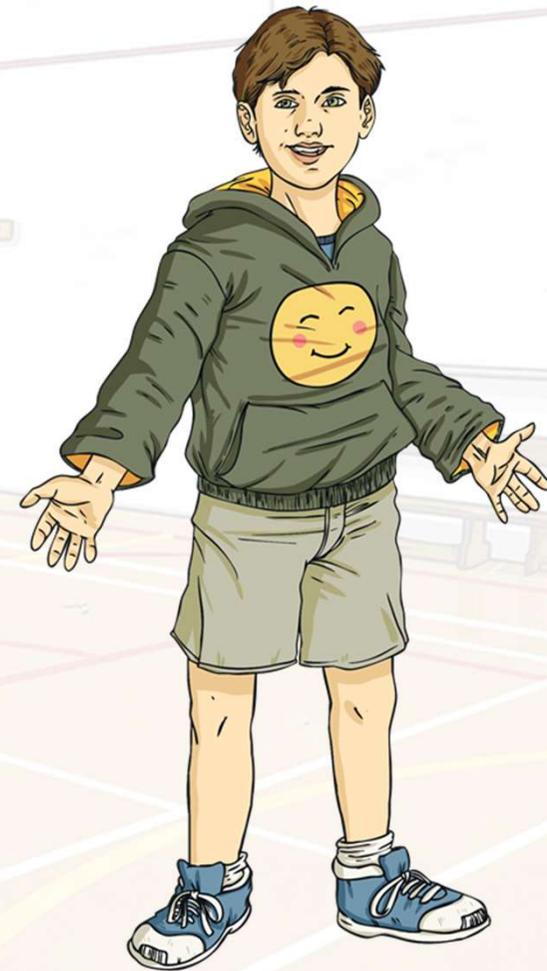
Escape the Room!

You have been helping your teacher to tidy up the sports equipment after a P.E. lesson. You hear a loud bang and turn around to find that you have been accidentally locked in the school hall!

Solve the clues and puzzles hidden around the room and reveal the keypad code needed to open the door.

The clues could be anywhere so you need to keep your eyes peeled and your mind sharp! Good luck!

The Rules

- When you find a clue that has been hidden, find the answer and reveal one of the digits to the keypad code.

- Record your answer on the answer sheet.

- Once you have discovered the ten-digit code for the keypad, check it with your teacher and find out if you can escape the room!
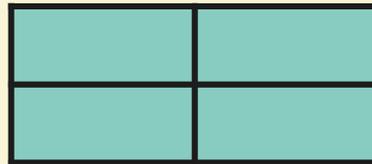
Reveal the Answers

? ? ? ? ? ? ? ? ? ?
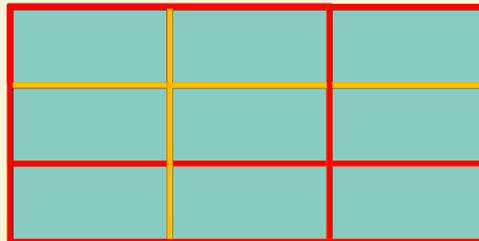
Clue for Digit 1

There are 9 rectangles (including squares) in this 2 × 2 grid.

How many rectangles (including squares) are there in this 3 × 3 grid?

Add together the digits of the answer to give you the first digit of the keypad code.
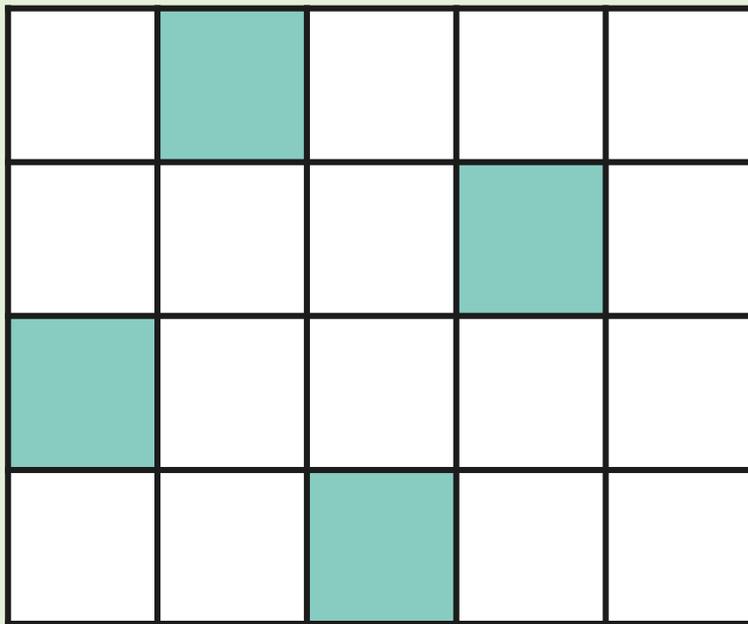
Clue for Digit 2

Discover the smallest square number that can be written using five **different** Roman numerals.

Divide this number by 24 to discover the second digit of the keypad code.

Roman Numerals	Value
I	1
V	5
X	10
L	50
C	100
D	500
M	1000

Clue for Digit 3

How many more squares need to be shaded in so that $\frac{3}{4}$ of the grid is shaded?

Add together the digits of this answer to give you the third digit of the keypad code.

Clue for Digit 4

Use the clues to calculate the mystery number.

- **Rounded to the nearest ten, the number is 61 460.**
- **The number is divisible by 4.**
- **The digit sum is even.**

What is the number?

Add together the digits of the mystery number to give you the fourth digit of the keypad code.

Clue for Digit 5

Here is a line graph showing the length of a shadow measured over time.
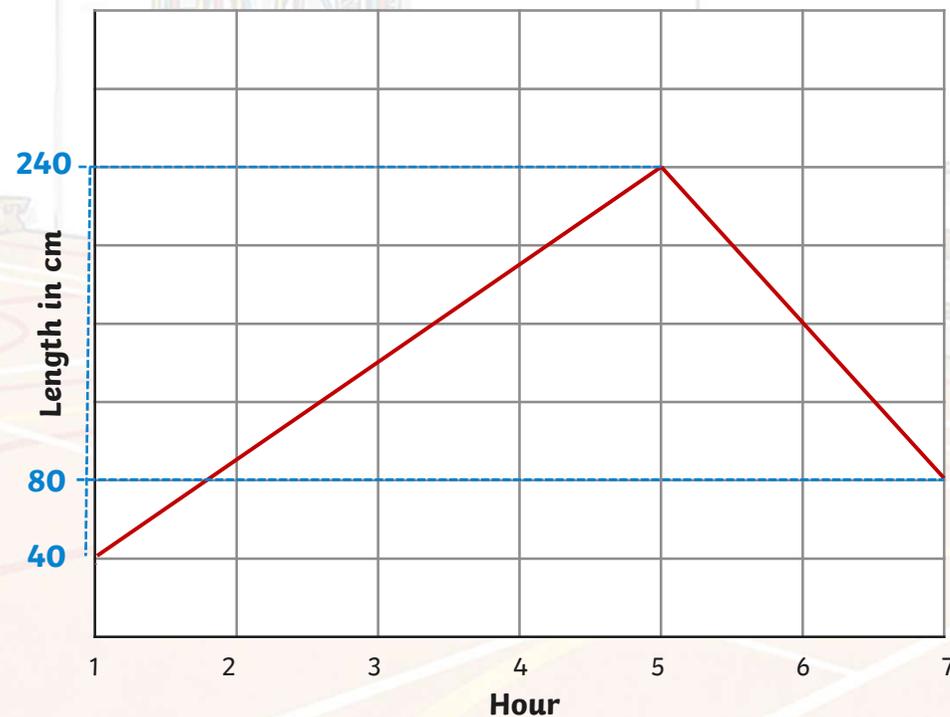
At its shortest length, the shadow measured 40cm.

At its longest length, the shadow measured 240cm.

What was the length of the shadow at hour 7?

The tens digit of this answer will give you the fifth digit of the keypad code.

A Line Graph to Show the Length of a Shadow Measured over Time

Length in cm

240

80

40

Hour

1   2   3   4   5   6   7

Clue for Digit 6

Work out the rule for each number sequence and find the next five numbers in each sequence.

1.	1250	1350	1450	1550	1650	**1750**	1850
2.	6750	5750	4750	3750	2750	**1750**	750
3.	1810	1800	1790	1780	1770	1760	**1750**

Which number is common to each of the number sequences?

Add together the digits of this answer to give you the sixth digit of the keypad code.

Clue for Digit 7

Use the clues to calculate the mystery two-digit number that is less than 50.

- It is one more than a prime number.

- The sum of its digits is a square number.

Add together the digits of this answer to give you the seventh digit of the keypad code.

Clue for Digit 8

Use the clues to calculate the mystery five-digit number.

- The digits of the hundreds and ones total 12.
- It has two more ones than hundreds.
- It has one less ten thousand than ones.
- The digits of the thousands and hundreds total the same digit as the number of ten thousands.
- It has a digit sum of 22.

The tens digit of this answer will give you the eighth digit of the keypad code.

Clue for Digit 9

Calculate the difference between these pairs of numbers.
Which answer appears twice?

Add together the digits of this answer to give you the ninth digit of the keypad code.

1.	23	to	-13
2.	-16	to	27
3.	26	to	-12
4.	-11	to	31
5.	21	to	-24
6.	-8	to	35

Clue for Digit 10

Find the missing digits in these calculations. Which missing digit is common to both calculations?

This answer will give you the tenth digit of the keypad code.

	2	7		4
+	5		6	3
	8	7		4

	7	0		6
−	3		5	2
	3	1		0

Escape the Room Keypad Code

Digit 1	Digit 2	Digit 3	Digit 4	Digit 5	Digit 6	Digit 7	Digit 8	Digit 9	Digit 10

Click on a rectangle to reveal the digit.