Task 3 – The safe house – ANSWERS

Clue 1

Students work out the scale using one of the extra clues and their map.

3.3 cm ≈ 0.5 miles = 0.8 kilometres

Therefore

4.125 cm ≈ 1 km

Students draw 3 arcs (see attached map) that intersect at (roughly) the tube station next to the Charles Dickens museum.

Clue 2

Students follow the directions (see attached map) to arrive at the Tate Britain on the banks of the Thames.

Clue 3

Students work out the rest of the binary alphabet using one of the extra clues.

Students translate the message as:

"You made it. Phew. I was worried there for a minute. The next agent is waiting for you 1 point 81 km away on a bearing of 345 degrees."

Students then use this clue to locate the next agent at Piccadilly Circus.

(Binary Translator http://binarytranslator.com/)

Clue 4

Using one of the extra clues (or otherwise) students recognise the code is written by a shift of 4 in the alphabet and translate the message as:

"Take the first two letters of your location. Multiply them by the position of the last letter of your location in the alphabet. Round your answer to one significant figure. Double it. Take the next prime number to occur after this number. Add the digits of the number together. Square it. Take the number of factors this number has and cube it. Express this number in binary."

Students then work out the number as follows:

Pi x 19 = 59.69026042

59.69026042 ≈ 60

60 x 2 = 120

First prime number after 120 is 127

1 + 2 + 7 = 10

10^2 = 100

Factors of 100: 1, 2, 4, 5, 10, 20, 25, 50, 100 – 9 factors

9^3 = 729

W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

729 in binary: **1011011001**
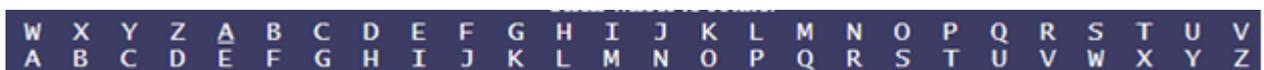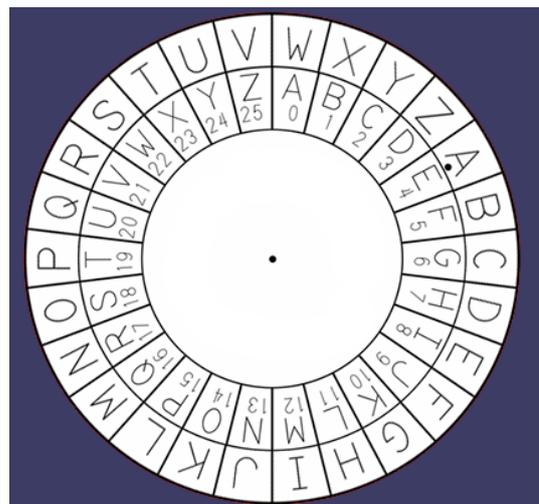
(Cipher Wheel translator http://inventwithpython.com/cipherwheel/
http://www.richkni.co.uk/php/crypta/caesar.php)