TRUST TRAIL *of* MYSTERY

There has been a heist at the National Trust!
**A precious object has been taken and we need your help, Detective!**

A burglar was seen fleeing the scene, but witnesses gave different descriptions of what the thief was wearing.

By solving all 9 puzzles located around the property, you will discover the colours of the items of clothes that the thief was wearing. Using these clues, you will need to deduct who has stolen the precious object.

Only 1 thief out of 20 will have the right colour combination of clothing!

Using the answer sheet, write down the item of clothing and its colour as you solve each of the 9 puzzles. The puzzles can be solved in any order.

Simply scan the QR code underneath the thief you suspect to see if you have solved the case. Good luck, Detective!
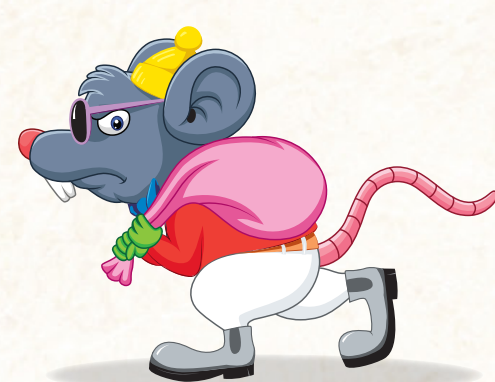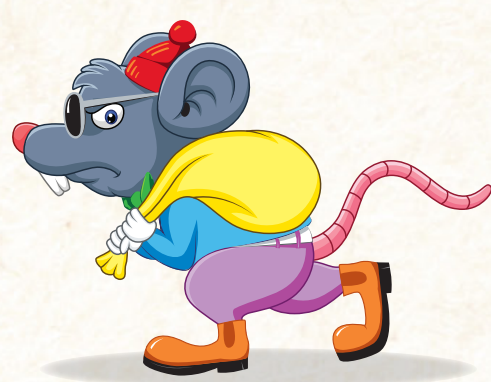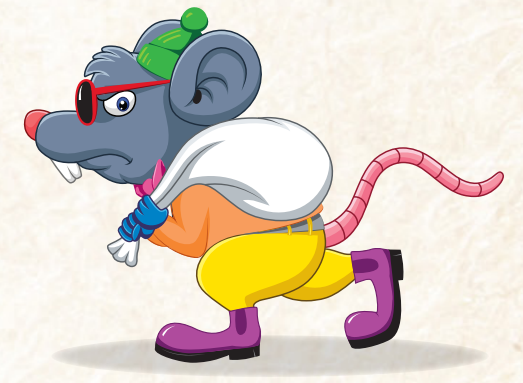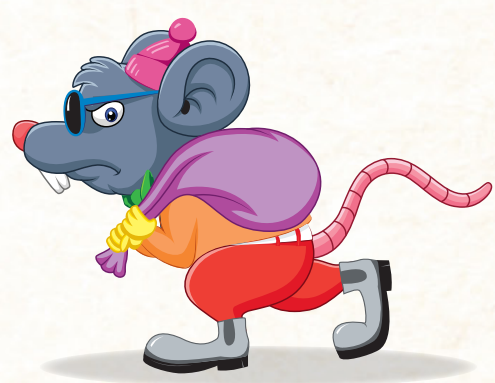
If you get stuck on a puzzle, the answers can be found by scanning this QR code.

NATIONAL TRUST

nationaltrust.org.au/vic

Grid Words

A code is a system of letters, words, symbols or signals that are used instead of ordinary words and numbers to send messages. A code is used to keep the message short or to keep it secret. Codes and ciphers are forms of secret communication. A code replaces words with groups of letters or numbers, while a cipher rearranges letters or uses substitutes to disguise the message. The science that studies such secret communication is called Cryptology.

Use the first letter of each word in the message and unscramble **the colour of the thief's raincoat!**

|	A	B	C	D	E	F	G	H
1	Heist	Garden	Trail	Of	Mystery	National	Trust	Sleuth
2	Heat	Gunshot	Solve	Case	Time	Thief	Police	Observation
3	Notebook	Welcome	Hot	Suddenly	Reading	Guilty	Spatter	Jail
4	Crime	Mask	Evidence	Law	Notes	Suspect	Clues	Secret
5	Urgent	Trespass	Magnify	Question	Mayhem	Footprint	Witness	Scene
6	Revenge	Evidence	Blade	Copycat	Heist	Detective	Suspicious	Opinion
7	Thinking	Fingerprint	Cuffs	Arrest	Burglar	Bullet	Book	Victim

Secret Message: F3 D7 H6 A3 B6 E3

Numbers to Letters Cipher

The numbers to letters cipher is also known as the A1Z26 Cipher. It is the simplest possible letters to numbers translation. Although the encoding is intended for the English alphabet, it can easily be used for other languages as well.

Replacing letters with numbers, **what was the thief wearing on their face?** (1 = A   2 = B   3 = C   26 = Z)
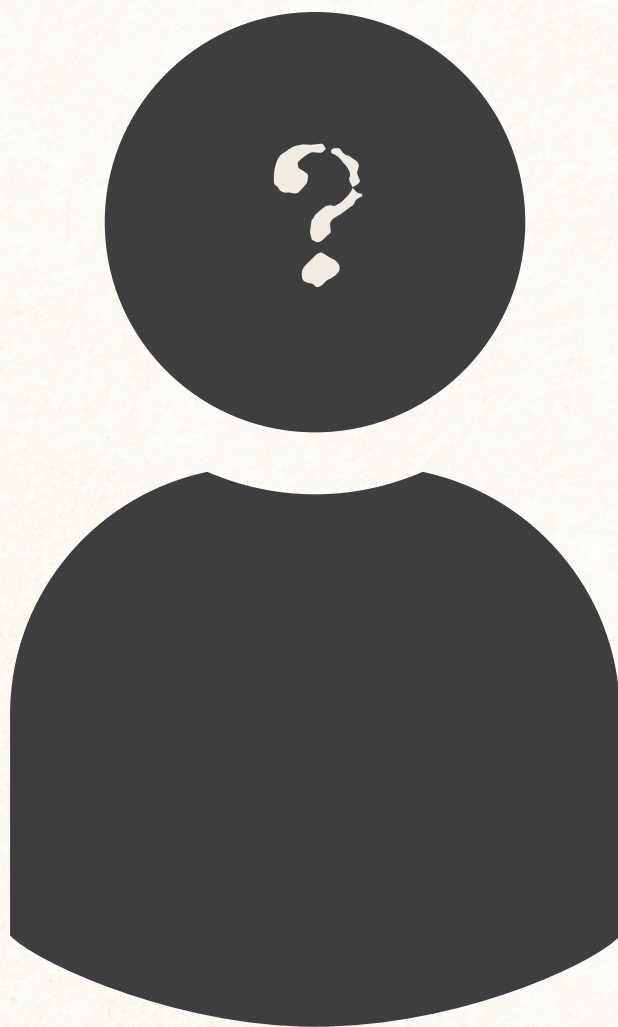
Secret Message:

18   5   4   19   21   14   7   12   1   19   19   5   19

Secret Symbols

Symbols are an alphabet of human thoughts! They allow people to share messages without speaking or writing words. In ancient history, symbols were used to represent a particular person, group, idea or place. The study of symbols in called Symbology.

Using the table below to match the symbol to the letter, **what was the thief wearing on their feet?**

A	B	C	D	E	F	G
©	¥	↗	@	Ж	&	%

H	I	J	K	L	M	N
*	§	φ	⊙	!	^	☻

O	P	Q	R	S	T	U
●	₪	□	?	<	=	+

V	W	X	Y	Z
«	◊	¢	:	\

Secret Message: ₪ + ? ₪ ! Ж   ¥ ● ● = <

Grid Co-ordinates

Grid co-ordinates have been used in geography and mapping since the 3rd century BC and are credited to Erathosthenes of Cyrene. In Maths, it was Descartes in the 17th century AD that developed Cartesian co-ordinates, or a 3D grid, to create a link between geometry and algebra.

Using the grid co-ordinates, **find the colour of the thief's hat.**

	A	B	C	D	E	F	G	H
1	The	Garden	Trail	Of	Mystery	National	Trust	Sleuth
2	Heat	Yellow	Solve	Case	Hat	Thief	Police	Observation
3	Notebook	Welcome	Hot	Suddenly	Reading	Guilty	Milk	Jail
4	Footprint	Red	Evidence	Law	Colour	Suspect	Clues	Blue
5	Urgent	Trespass	Magnify	Question	Mayhem	Grass	It	Scene
6	Revenge	Evidence	Blade	Copycat	Green	Detective	Suspicious	Opinion
7	Butter	Fingerprint	Was	Sky	Burglar	Bullet	Book	Purple

Secret Message: G5 C7 A1 E4 D1 F5

The NATO Phonetic Alphabet

The history of the NATO phonetic alphabet started with pilots. British and American armed forces used their own phonetic alphabets in both World Wars, before a universal phonetic alphabet was created. Testing was conducted among speakers from 31 nations and based on sounds that were common in English, French and Spanish.

Using the NATO phonetic alphabet below, **what colour were the thief's pants?**

A	Alpha	J	Juliet	S	Sierra
B	Bravo	K	Kilo	T	Tango
C	Charlie	L	Lima	U	Uniform
D	Delta	M	Mike	V	Victor
E	Echo	N	November	W	Whiskey
F	Foxtrot	O	Oscar	X	X-Ray
G	Golf	P	Papa	Y	Yankee
H	Hotel	Q	Quebec	Z	Zulu
I	India	R	Romeo		

Secret Message: Tango Hotel Echo Yankee/ Whiskey Echo Romeo Echo/Tango Hotel Echo/ Charlie Oscar Lima Oscar Uniform Romeo/Oscar Foxtrot/Bravo Uniform Tango Tango Echo Romeo

Tap Code or Polybius Square

The Tap Code or Polybius Square, is an ancient Greek device made famous by the scholar and historian, Polybius. For the Greek alphabet of 24 letters, it consisted of a 5 by 5 grid where each square was filled by a single letter. In the English alphabet of 26 letters, we have one too many letters. To get around this, we combine two letters into one square. This Polybius Square combines "C" and "K".

Using Tap Code, unscramble the **colour of the thief's loot bag.**
(A = 1-1   B = 1-2   C = 1-3   X = 5-3   Y = 5-4   Z = 5-5)

	1	2	3	4	5
1	A	B	C/K	D	E
2	F	G	H	I	J
3	L	M	N	O	P
4	Q	R	S	T	U
5	V	W	X	Y	Z

Secret Message: 5-2, 2-3, 2-4, 4-4, 1-5

International Morse Code

An American artist and inventor named Samuel F. B. Morse created Morse Code in the 1830s. Morse Code and the telegraph allowed people to receive information sent from far away in just minutes. Before this, an important message could take weeks to arrive by mail. A second type of Morse Code was created in Europe in 1851. It was called the International Morse Code. It was simpler than the original code. It also included extra letters with special marks on them, such as ç or ñ, that are used in some European languages.

Using International Morse Code, find the letters that tell you **what the thief was wearing around their neck!**
(clue: 3 words)

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

Secret Message: First word   .--.   ..   -.   -.-
Second word   -...   ---   .--
Third word   -   ..   .

Pigpen Cipher

The Pigpen Cipher has a strange name, but there's a reason behind it; the idea is that you assign each letter of the alphabet to a specific shaped bracket, or 'pigpen'. When you go to write your secret message, instead of writing normal letters, you instead write the bracket that each letter 'lives' in. This cipher has been used since the 1500s and has also been called the Napoleonic Cipher or Tic-Tac-Toe Cipher.

Using pigpen cipher, solve the mystery of **what the thief was wearing on their hands.**

Examples: A = └   Q = |·| T = >   Z = ⋀·
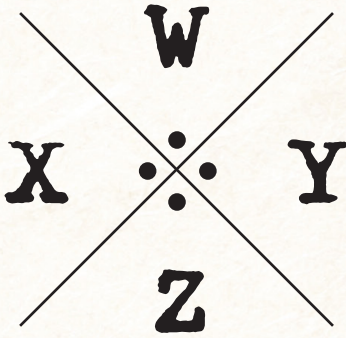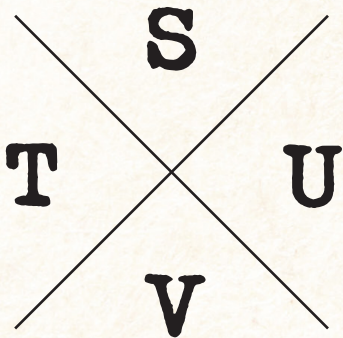
Secret Message: ⊔L·⋖□ ⌐·⊏·⋀□∨
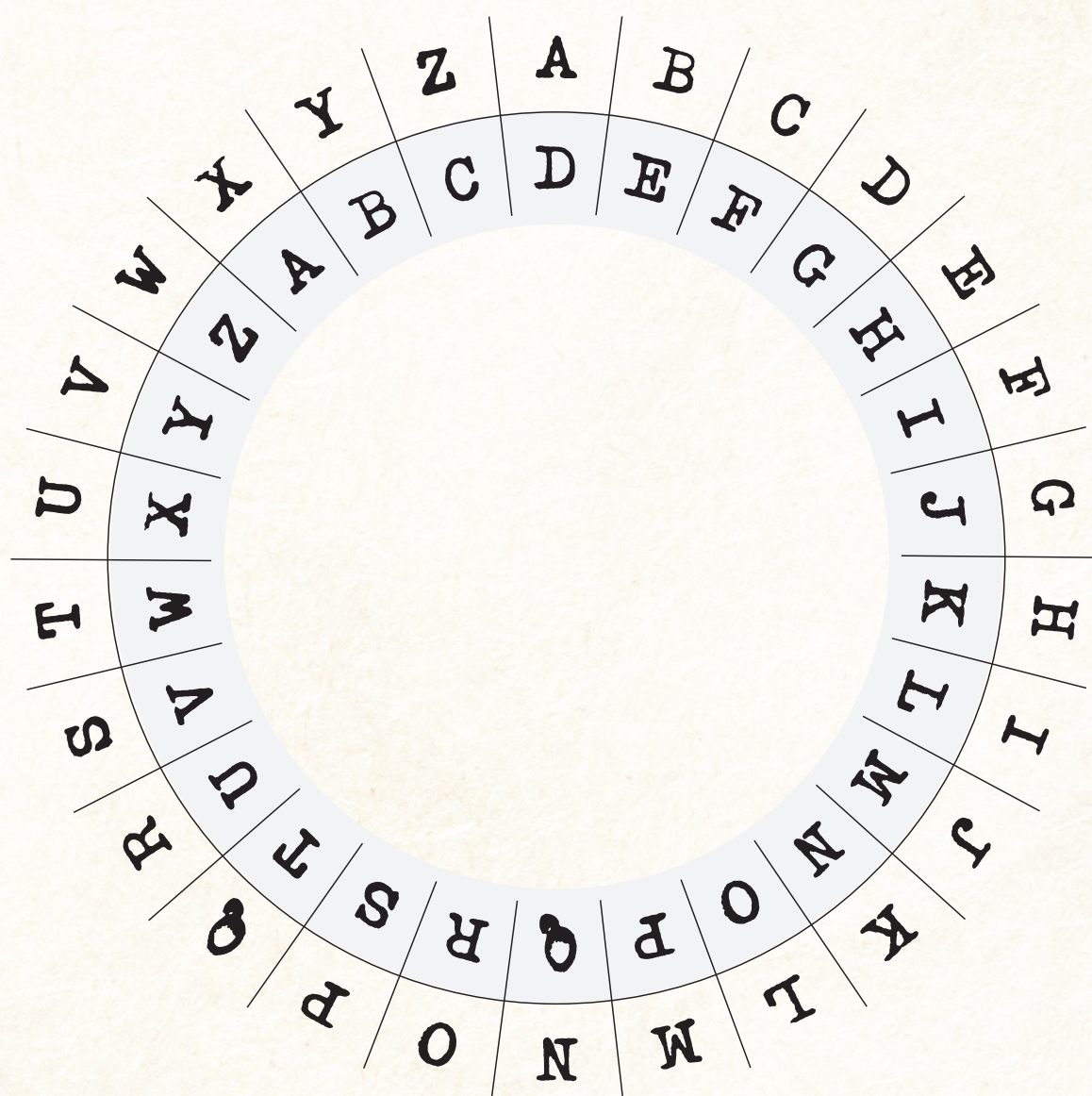
Caesar Shift Cipher

The Caesar Shift Cipher is named after Julius Caesar, as he used this cipher to encrypt messages. With the Caesar Shift Cipher, each letter is "shifted" a fixed number. In this code, the alphabet has been shifted 4 places, so A = D, B = E and Z = C

Using letters from the inside circle of the Caesar shift decoder below, **what was the thief wearing around their waist?**

Secret Message: J U H B   E H O W