

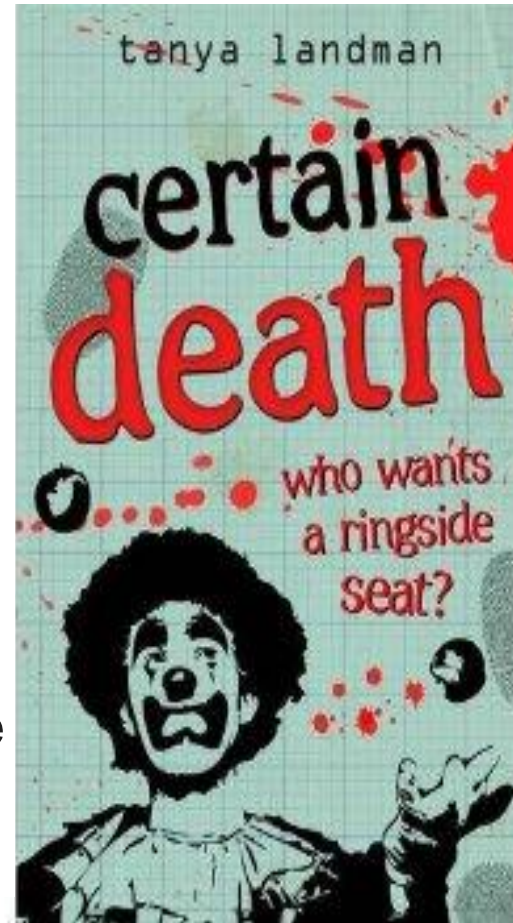
Murder MOST Mathematic!



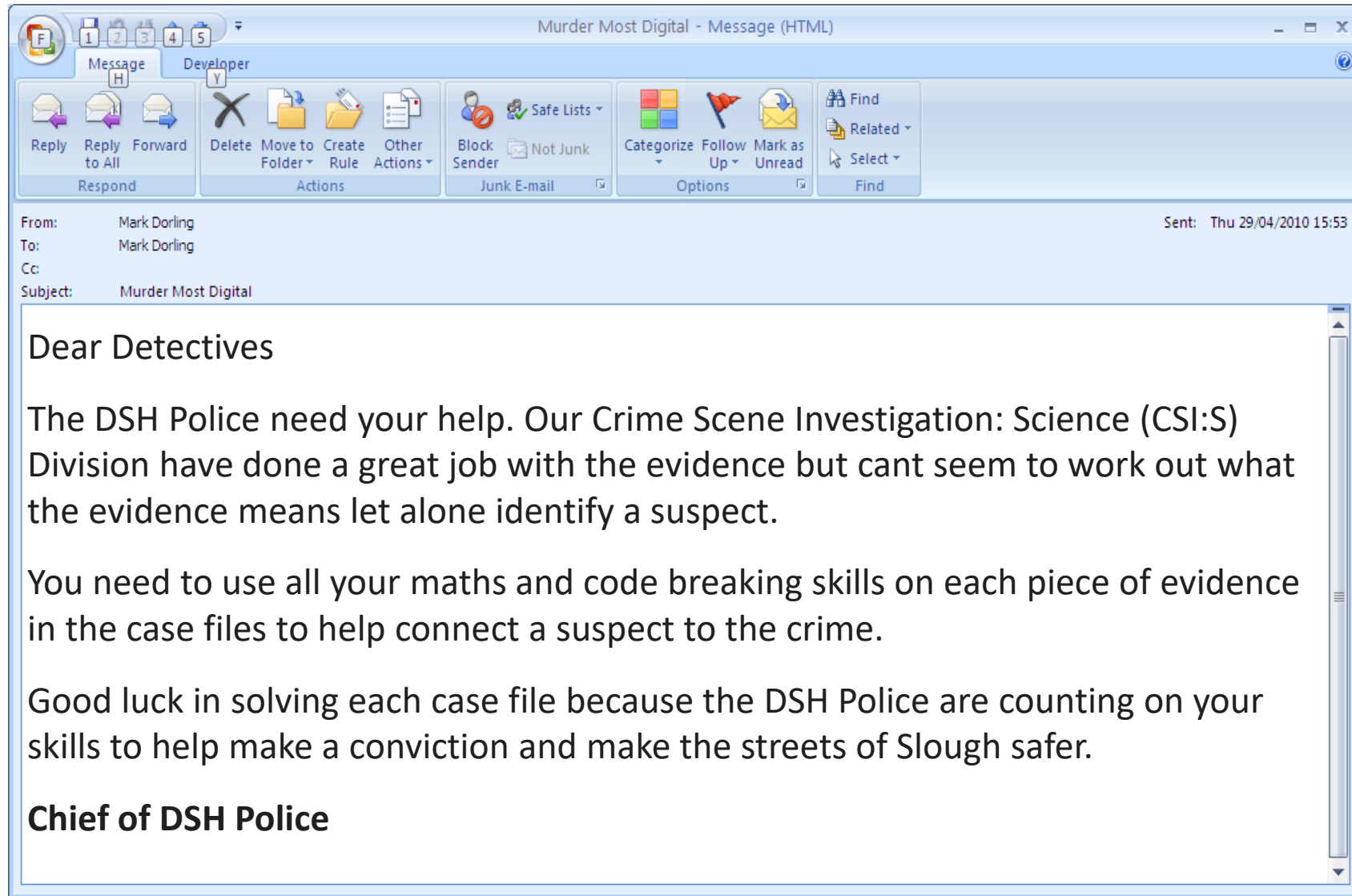
You are a Crime Scene Detective (CSD) for the education department's Digital Schoolhouse division.

Certain death

When the circus comes to town, Poppy Fields and best friend Graham soon discover that the 'certain death' promised on the posters is no joke. With one person dead and the circus performers still in grave danger, the pair will have to work fast to discover who's firing the shots... This title features Miss Marple for the younger reader.



The role of: DSH CSD



The challenge

So far you have collected the names and details of all 31 suspects. The murderer is one of them.

Each clue was left by the murderer but each clue is left as a maths challenge.

You will need to use your maths and code-breaking skills to get the answers.

Only when you have all the answers will you be able to remove suspects from the list!

Clue 1: To solve this puzzle you will need to use your understanding of grid references to work out which are the important words in the table below. Write down the word that you find at each grid reference in the Decoding Notes boxes below. Once you have found ALL the words, you need to unscramble them to make a sentence that gives you the first clue to the identity of the killer.

	A	B	C	D	E	F	G
1	AN	RIGHT	SAW	THE	SECOND	MOUSTACHE	GUN
2	THE	BANANA	TORCH	LOOKED	ALIBI	HEARD	APPLE
3	FIRST	SHOT	RAN	ROUND	MURDERER	CIRCUS	TENT
4	LOST	LEFT	TOWARDS	ONE	FINGER	FELT	BEHIND
5	OF	NEXT	THEIR	RADIO	EXTRA	IF	IMPORTANT
6	PEOPLE	STATION	GLASSES	VERY	IS	DOWN	EAR
7	RINGS	RANDOM	PENALTY	LONG	MOBILE	JOURNEY	EACH
8	NEXT	BEFORE	AT	URBAN	RIGHT	THE	DAY
9	FRONT	FIRST	PHONE	WHEN	AFTER	CARAVAN	MURDER
10	CLOWN	TOO	NEVER	SCENE	SUDDENLY	KNIFE	HAIR

DECODING NOTES

Message:													
Cellref:	F8	D4	D10	E3	G6	G9	A2	C8	C5	B4	B9	A5	A7

Please use the space below to reorder the words into a sentence makes sense:

Teacher and class notes:

Clue 2: To crack this code you will need this hint – Each letter of the original message has been replaced by a new letter.

The two website links below contains code-breaking templates from ‘Science by email’ which hold the key to cracking the code below. Print out one copy of each sheet, cut out the wheels and join them together with the smaller, cipher wheel on top. Align the letters of both wheels using the table below.

<http://www.csiro.au/helix/scienceemail/activities/images/Cipher1.jpg>

<http://www.csiro.au/helix/scienceemail/activities/images/Cipher2.jpg>

Use the table below to help you...

CODE <i>(Inner wheel)</i>	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	
ORIGINAL MESSAGE <i>(Outer wheel)</i>	O												A			D											

Place the words in the spaces below

B	A	B	B	K						
R	A	G	Z	P						
E	F	D	M	Z	P	E				

Teacher and class notes:

Clue 3: Now use your skills of plotting graphs to find another clue to help you solve the mystery.

5	C	S	L	I	E
4	W	P	N	U	B
3	P	O	U	R	R
2	M	T	D	S	O
1	F	A	N	G	H
	1	2	3	4	5

(2,2)	(5,1)	(5,5)		(2,5)	(2,4)	(5,2)	(2,2)	(3,5)	(4,5)	(4,1)	(5,1)	(2,2)		(1,4)	(2,1)	(2,5)			
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(5,3)	(5,5)	(1,1)	(3,5)	(5,5)	(1,5)	(2,2)	(5,5)	(3,2)		(4,5)	(3,1)		(2,2)	(5,1)	(5,5)				
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Teacher and class notes:

Clue 4: The message is not in code, you just have to work out how to read it! Pause for a minute and reflect on the words...

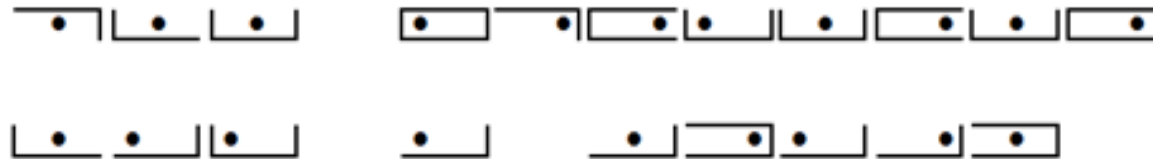
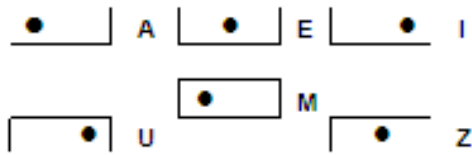
A	S	I
H	S	A
T	R	O
R	E	P
N	O	S
N	U	R

Teacher and class notes:

Clue 5: The murder was caught on CCTV texting somebody on his mobile phone. However, the CCTV was not able to pick up his or her face or the message on the screen but there is some good news... the CCTV spotted which buttons were pressed the order! It is your job to work out what the message was.



ABC	DEF	GHI
JKL	MNO	PQR
STU	VWX	YZ



Teacher and class notes:

Clue 6: Poppy and Graham have left the next clue under Poppy's seat at the circus. However, we do not know which seat she sat in during the performance. Using the seating plan and the clues below it is your job to find where she was seating. Once you have worked out her seat number take the answer to your teacher to collect the next clue.

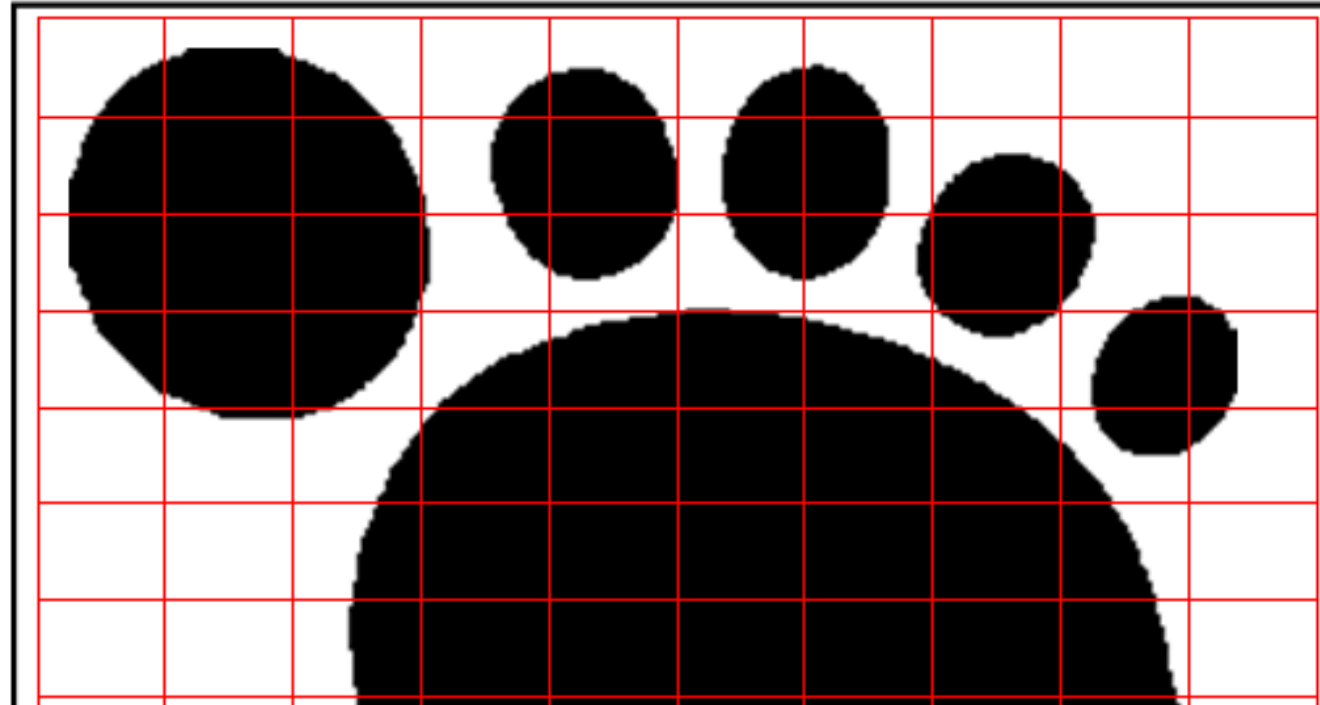
45	46	47	48	49	50	51	52
37	38	39	40	41	42	43	44
29	30	31	32	33	34	35	36
21	22	23	24	25	26	27	28
13	14	15	16	17	18	19	20
	7	8	9	10	11	12	
		3	4	5	6		
			1	2			

Here are the clues:

1. It is not an even number.
2. It is not divisible by 5.
3. It is not a multiple of 7 or 9.
4. There is neither a 1 nor a 3 in the number.
5. It is not in the top row, neither does it have a multiple of 8 next to it.

Teacher and class notes:

CLUE 7: To work out the murders shoe size, you will need to calculate the area of the foot print. Oh, one last thing... One square equals one cm...



Teacher and class notes: