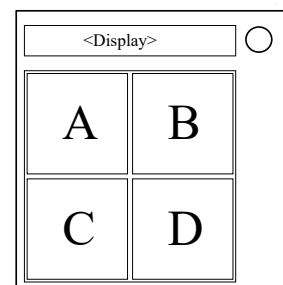# On the Subject of Playfair Cipher

Encrypting secrets since 1854, exploding bombs since 2018.

Your purpose is to decrypt an encrypted message. Find the key, decrypt the message and press the correct button sequence. Easy, right?

Obtaining the Key

Find the two key parts using the following two tables. In each table, stop at the first rule that applies.

Part 1

It's Monday*	PLAY
It's Tuesday	HIDDEN
It's Wednesday*	SECRET
It's Thursday	CIPHER
It's Friday*	FAIL
It's Saturday	PARTYHARD
It's Sunday	BECOZY
* If a **lit BOB** indicator is present on the bomb, use the following day. BOB hates odd-numbered days (except Sunday).	

Part 2

	Screen Text Color			
	Magenta	**Blue**	**Orange**	**Yellow**
Bomb has serial and parallel port	SAFE	EFAS	MESSAGE	GROOVE
Sum of serial number digits > 10	CODE	EDOC	QUIET	ETIUQ
D batteries > AA batteries	GROOVE	EVOORG	TEIUQ	QUITE
Otherwise	MESSAGE	EGASSEM	SAFE	EDOC

Modifying the key

- If the serial number doesn't contain a vowel, **swap** the parts.
- If you have one or more strikes, **add** a third part:
  - For one strike, add "ONE".
  - For two strikes, add "TWO".
  - For more strikes, add "MANY".
- If the sum of digits in serial number is a prime number, **reverse** the complete key. (Prime numbers: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47)

Decrypting the message

- Create a a 5×5 matrix of letters. Start with your **keyword** and fill the rest with the unused letters of the alphabet. Each letter must occur only **once** in the matrix, so only add the first occurrence. 'J' and 'I' are interchangeable.
- Split the **message** into character pairs. For each pair:
  - If the letters appear on the same row of your matrix, replace them with the letters to their immediate left respectively, wrapping around to the right side of the row if necessary.
  - If the letters are on the same column of your matrix, replace them with the letters immediately above, wrapping to the bottom if necessary.
  - If the letters are on different rows and columns, replace each of them with the letter on the same row but in the column of the other letter in the original pair.
- Drop any Xs that don't make sense and locate any Is that should be Js.

		Screen Text Color			
		Magenta	Blue	Orange	Yellow
Decrypted Message	STRIKE	ABCD	CDAB	BADC	DABC
	STRIK	BCDA	DACB	ADCB	ABCD
	STRYKE	CDAB	ACBD	DCBA	BCDA
	STRYK	DABC	CBDA	CBAD	CDAB
	ZTRIKE	ABDC	BDAC	BACD	DACB
	ZTRIK	BDCA	DBCA	ACDB	ACBD
	ZTRYKE	CABD	BCAD	CDBA	CBDA
	ZTRYK	DCAB	CADB	DBAC	BDAC