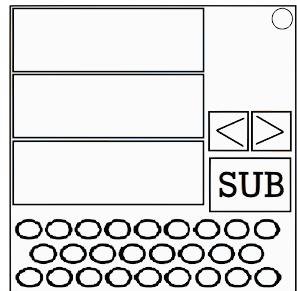


## On the Subject of the Violet Cipher

*Roses are red. Violets are blue. Didn't I already make this joke before? Oh well, here's a cipher for you.*

On the module, you will see 3 screens, a keyboard, 2 arrows, and a submit button that displays the current page you're on.



Pressing the right arrow takes you to the next page. Pressing the left arrow takes you to the previous page. There is a total of 2 pages.

On page 1, the top screen shows a 6 letter encrypted word, the middle screen shows an 6 letter keyword, the bottom screen shows a 2 digit number.

On page 2, the top screen shows another keyword.

Follow the mechanics down below to decrypt your word:

### Step 1: Porta Cipher

For this, you're going to need the encrypted word on the top screen on page 1, and the 6 letter keyword from the middle screen on page 1, as well as the chart below.

For each letter of the encrypted word and the keyword, do the following:

- Use the letter of the keyword as the row for the chart below.
- If the letter of the encrypted word is between A-M, use the letter as the column for the chart. Then the intersection of the row and column of the 2 letters will give you the new encrypted letter.
- Otherwise, find the letter in the same row as the letter of your keyword. The column of that letter will give you the new encrypted letter via the A-M row of the chart.

Now you should have a new encrypted word that is ready for step 2.

	A	B	C	D	E	F	G	H	I	J	K	L	M
AB	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
CD	O	P	Q	R	S	T	U	V	W	X	Y	Z	N
EF	P	Q	R	S	T	U	V	W	X	Y	Z	N	O
GH	Q	R	S	T	U	V	W	X	Y	Z	N	O	P
IJ	R	S	T	U	V	W	X	Y	Z	N	O	P	Q
KL	S	T	U	V	W	X	Y	Z	N	O	P	Q	R
MN	T	U	V	W	X	Y	Z	N	O	P	Q	R	S
OP	U	V	W	X	Y	Z	N	O	P	Q	R	S	T
QR	V	W	X	Y	Z	N	O	P	Q	R	S	T	U
ST	W	X	Y	Z	N	O	P	Q	R	S	T	U	V
UV	X	Y	Z	N	O	P	Q	R	S	T	U	V	W
WX	Y	Z	N	O	P	Q	R	S	T	U	V	W	X
YZ	Z	N	O	P	Q	R	S	T	U	V	W	X	Y

Example

Encrypted word: ZXLMRM

Keyword: JOKING

J + Z =&gt; I

O + X =&gt; D

K + L =&gt; Q

I + M =&gt; Q

N + R =&gt; L

G + M =&gt; P

Step 2: Route Transposition

For this, you will need the encrypted word you got from step 1, and the 2 digit number from the bottom screen on page 1.

The left digit determines the grid of the cipher and the right digit determines the top left number of the grid.

Use the top grid if the left digit is a 1. Otherwise use the bottom grid.

#	#	#
#	#	#

#	#
#	#
#	#

Enter the right digit into the top left square of the grid. Then going clockwise on the grid, add 1 to the number and enter it into its square. If the number goes over 6, make it a 1.

Now place the 1st letter of the encrypted word into the square labeled 1. Then the 2nd letter into the square labeled 2 into the square labeled 2. And so on for each letter of the encrypted word.

Finally take the letters in reading order to get a new encrypted word.

### Example

Encrypted word: IDQQLP

Number: 12

2	3	4
1	6	5

D	Q	Q
I	P	L

IDQQLP => DQQIPL

### Step 3: Quagmire Cipher

For this, you're going to need the encrypted word you got from step 2, the 6 letter keyword from the middle screen on page 1, and the word from the top screen on page 2 (this can be 4 – 8 letters long).

The first part of this step is to build the encryption key needed for this cipher.

The encryption key has 7 rows of letters. The first row will always be these arrangement of letters:

ABCDEFGHIJKLMNPQRSTUVWXYZ

The next 6 rows will be the alpha key you make via using the keyword on the bottom screen:

- Remove any duplicate letters in the keyword (removing all 2nd or more occurrences)
- Take the entire alphabet and remove all letters that are in the keyword.
- Place the alphabet at the end of the keyword. This is now your alpha key.

Now copy/paste the alpha key under the first row of the encryption key 6 times so that the total amount of rows equals 7.

Finally, shift the last 6 rows so that the letters on the left side spells out the 6 letter keyword from the middle screen.

### Example

Middle Screen KW: JOKING

Top Screen KW: KNEADS

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

For each letter of the encrypted word do the following:

- Find the letter of the encrypted word according in the same row as its position in the word (The top row doesn't count as a row).
- In that column, turn it into the letter at the very top row to get your decrypted letter (The row that is A-Z).

After that you should now have your decrypted word.

### Example

Encrypted Word: DQQIPL

This uses the table above for the decrypting process

D => S  
Q => C  
Q => R  
I => A  
P => P  
L => E

Once you finally have your decrypted word, you can submit it. Once you start typing, all the screens will go black and the bottom screen will show what you are typing.

To clear it, just click one of the arrows. This goes to one of the pages and clears any input you put in. It will not let you go over 6 letters on input.

Once you are satisfied with your input, press the button labeled "SUB" to submit your answer. On a strike, the module will go back to the first page of the module, but it does not regenerate.