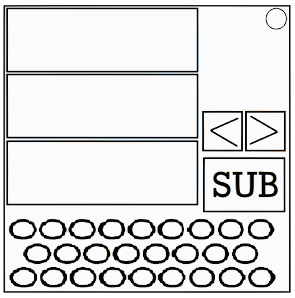
On the Subject of the Ultimate Cipher

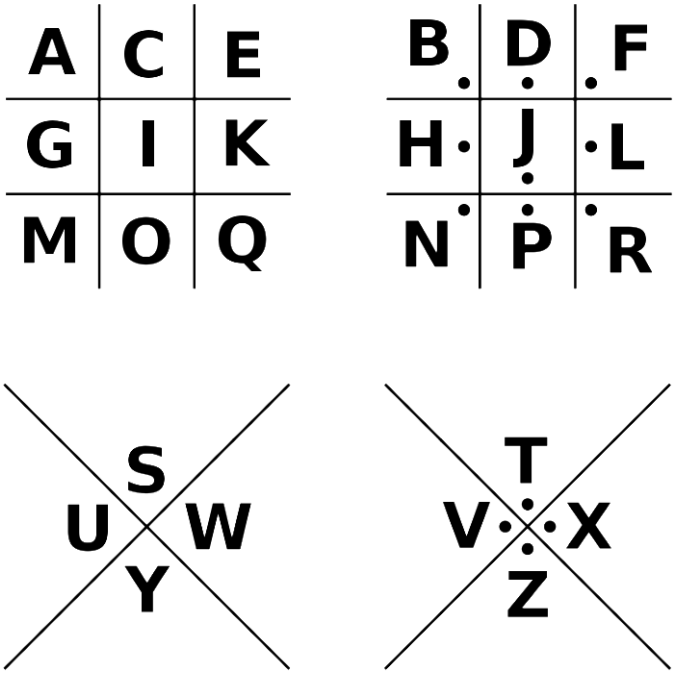


All ciphering techniques are required to solve this module.

- On the first page of the module, the top screen should show a 6 symbol word that has been ecrypted.
- The module has a total of 7 pages, 1 for the first screen, and 2 for each colored cipher.
- Follow the nessecary steps below to get your decrypted word to submit.

Step 1: Pigpen Cipher

Convert the 6 symbols on the top screen of page 1 to letters using the chart below:



Step 2-10: Color Ciphers

The next 6 pages will select 3 out of the 10 color ciphers from this list:

Red Cipher (https://ktane.timwi.de/HTML/Red%20Cipher.html)
Orange Cipher (https://ktane.timwi.de/HTML/Orange%20Cipher.html)
Yellow Cipher (https://ktane.timwi.de/HTML/Yellow%20Cipher.html)
Green Cipher (https://ktane.timwi.de/HTML/Green%20Cipher.html)
Blue Cipher (https://ktane.timwi.de/HTML/Blue%20Cipher.html)
Indigo Cipher (https://ktane.timwi.de/HTML/Indigo%20Cipher.html)
Violet Cipher (https://ktane.timwi.de/HTML/Violet%20Cipher.html)
White Cipher (https://ktane.timwi.de/HTML/White%20Cipher.html)
Gray Cipher (https://ktane.timwi.de/HTML/Gray%20Cipher.html)
Black Cipher (https://ktane.timwi.de/HTML/Black%20Cipher.html)

Any mention on the color cipher's manual about the encrypted word refers to the 6 letter word you got from Step 1 in this manual. Use each color cipher mechanic in the order they appear on the module to decipher the encrypted word (Start at page 1, then 2, then 3, and so on).

NOTE: If the screens are white and the text is black, you are looking at an inverted version of the color cipher. Use the inverted rules down below of the following color it uses. Read the steps in reading order rather than step order, EX: Inverted Red's order is 321.

Inverted Red Cipher

Remember to replace any Js with the letter in the same position of the middle screen on the first page of the COLOR cipher, then change it back to a J at the end of the Inverted Red Cipher.

Get all 3 5x5 matrices from the 3 steps, but don't do anything more in those steps

Do the following steps in order:

Step 3: Tri-square Cipher

Split the encypted word into 3 letter pairs. For each letter pair do the following:

- Take the first letter and find it in the 1st matrix to get a row and column.
- Next find the second letter in the 2nd matrix to get another row and column.
- Use the row of the 1st matrix and the column of the 2nd matrix for the 3rd matrix to get the 1st letter.
- Use the column of the 1st matrix and the row of the 2nd matrix for the 3rd matrix to get the 2nd letter.

This will give you a new encrypted word.

Example

Encrypted Word: PHOTON
Key: ABCDFGHKLNPQRTUWXYZMOVIES

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

PH -> WR
OT -> WB
ON -> WX
New Encrypted Word: WRWBWX

Step 2: Conjugated Matrix Bifid

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

- Find the letter in the 1st matrix to get a row/col pair.
- Write the row/col pair so that the top number is the row and the bottom number is the column.
- Make sure to write it to the right of any previous row/col pairs.

Read the entire number string in reading order and split it into a new set of 6 row/col pairs.

For each row/col pair, use it in the 2nd matrix to get a new letter.

This will give you a new encrypted word.

Example

Encrypted Word: WRWBWX
Key: TRAGEDYBCFHIKLMNOPQSUVWXZ

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

W -> 53
R -> 45
W -> 53
B -> 22
W -> 53
X -> 54

5	4	5	2	5	5
3	5	3	2	3	4

54 -> X
52 -> V
55 -> Z
35 -> M
32 -> I
34 -> L
New Encrypted Word: XVZMIL

Step 1: Playfair Cipher

Split the encrypted word into character pairs. For each pair:

- If the 2 letters are exactly the same, keep them as is.
- Otherwise, if the letters appear on the same row of your matrix, replace them with the letters to their immediate right respectively, wrapping around to the left side of the row.
- Otherwise, if the letters are on the same column of your matrix, replace them with the letters immediately below, wrapping to the top.
- Otherwise, replace each of them with the letter on the same row but in the column of the other letter in the original pair.

This will give you a decrypted word.

Example

Encrypted Word: XVZMIL
Key: CAVITYBDEFGHKLMNOPQRSUWXZ

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

XV -> WI
ZM -> TR
IL -> EQ
Decrypted Word: WITREQ

Inverted Orange Cipher

Step 1: ADFGX Cipher

Just do exactly as the step is shown in the original Orange Cipher to get your keyword for matrix D.

Example

Encrypted Keyword: DGDADAGFXDFXDX
Key: ECHO

E	C	H	O
D	G	D	A
D	A	G	F
X	D	F	X
D	X		

C	E	H	O
G	D	D	A
A	D	G	F
D	X	F	X
X	D		

New Encrypted Keyword: GADXDDXDDGFAFX
Key A: ABDFGIKLMNPQRSTUVWXYZECHO

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

GA -> U
DX -> N
DD -> K
XD -> E
DG -> M
FA -> P
FX -> T
Decrypted Keyword: UNKEMPT

Step 3: Foursquare Cipher

You do need 4 matrices to do this step. Matrix A from step 1 is already made. You're going to do the first few steps of step 2 to get Matrix B and C. Matrix D is made through this step.

Split the encrypted word into letter pairs. For each pair do the following:

- Find the 1st letter in Matrix A. Find the 2nd letter in Matrix D.
- Take the 1st letter's row and the 2nd letter's column to get the 1st deciphered letter in Matrix B.
- Take the 1st letter's column and the 2nd letter's row to get the 2nd deciphered letter in Matrix C.

This will give you a new encrypted word.

Example

Encrypted Word: ZIGZAG
Key A: ABDFGIKLMNPQRSTUVWXYZECHO
Key B: AFLQVBGMRWCHNSXDIOTYEKPUZ
Key C: FIVETHOUSANDRYBCGKLMPQWXZ
Key D: ABCDFGHILOQRSVWXYZUNKEMPT

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

ZI -> PH
GZ -> LM
AG -> AH
New Encrypted Word: PHLMAH

Step 2: Bazeries Cipher

For each letter, find the letter in Matrix B, then take the same row/col you found it and use that as the row/col for Matrix C to get a new letter.

After that, you still need to split the letters into subgroups and reverse the letters in the subgroups. These rules are in the original Orange Cipher.

This will give you a decrypted word.

Example

Encrypted Word: PHLMAH
Key B: AFLQVBGMRWCHNSXDIOTYEKPUZ
Key C: FIVETHOUSANDRYBCGKLMPQWXZ

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

P -> W
H -> D
L -> V
M -> U
A -> F
H -> D
5 + 4 + 4 + 1 = 14 % 4 = 2 + 2 = 4
WDVUFD => WDVU FD => UVDW DF => UVDWDF
Decrypted Word: UVDWDF

Inverted Yellow Cipher

Step 3: Hill Cipher

You don't have to calculate for the inverse of these numbers as they already multiplied by the inverse of these numbers.

You do need to split the encrypted word into letter pairs and do the steps in the original Yellow Cipher.

This will give you a new encrypted word.

Example

Numbers: 9-10-18-13
Encrypted Word: GAMBLE

9	10
18	13

GA -> 7 1
MB -> 13 2
LE -> 12 5
(9 * 7) + (10 * 1) % 26 = 21 => U
(18 * 7) + (13 * 1) % 26 = 9 => I
(9 * 13) + (10 * 2) % 26 = 7 => G
(18 * 13) + (13 * 2) % 26 = 0 => Z
(9 * 12) + (10 * 5) % 26 = 2 => B
(18 * 12) + (13 * 5) % 26 = 21 => U
New Encrypted Word: UIGZBU

Step 1: Morbit Cipher

Just do exactly as the step is shown in the original Yellow Cipher to get your keyword for step 2.

Example

F	L	A	P	J	A	C	K
4	7	1	8	5	2	3	6
•	•	•	-	-	-	X	X
•	-	X	•	-	X	•	-

4 1 7 4 3 1 7 8 | • • • x • - • • x • • x • - - • | S L I P
Decrypted Keyword: SLIP

Step 2: Trifid Cipher

Create your key and turn each letter of the encrypted word into a 3 digit number.

Write each 3 digit number top to bottom, left to right, creating 3 rows of 6 digit numbers.

Read the numbers left to right, top to bottom to get your new sequence of numbers. Then take each 3 digit number and translate it back into a letter using the key you made.

This will give you a decrypted word.

Example

UIGZBU -> 313 113 212 332 123 313

3	1	2	3	1	3
1	1	1	3	2	1
3	3	2	2	3	3

312 313 111 321 332 233 -> TUSVZM
Decrypted Word: TUSVZM

Inverted Green Cipher

Step 1: Homophonic Cipher

Just do exactly as the step is shown in the original Green Cipher to get your keyword for step 3.

Example

Encrypted Keyword: 361053642529
3 Letter Key: URJ

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
07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	01	02	03	04	05	06
36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	27	28	29	30	31	32	33	34	35
70	71	72	73	74	75	76	77	78	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69

36 => A
10 => D
53 => J
64 => U
25 => S
29 => T
Decrypted Keyword: ADJUST

Step 3: Mechanical Cipher

Using the keyword you decrypted from step 1 and the encrypted word, follow the steps below.

Take the first letter from the keyword and use that as the row.

Take the first letter from the encrypted word and use that as the column via the top row of the grid.

The intersection of the 2 letters forms your new encrypted letter.

Do this for each letter of both words to get your new encrypted word.

Example

Encrypted Word: RWYQTE
Step 1 Keyword: ADJUST

A + R => C
D + W => S
J + Y => M
U + Q => G
S + T => S
T + E => Y
New Encrypted Word: CSMGSY

Step 2: Columnar Transposition

Write the encrypted word underneath the number from the middle screen on page 2 so that it fits in the columns of the numbers.

Rearrange the columns so that the numbers are in ascending order.

Read the letters top to bottom, left to right to get your decrypted word.

Example

CSMGSY + 3241 => GSYCSM

3	2	4	1
C	S	M	G
S	Y		

1	2	3	4
G	S	C	M
	Y	S	

Inverted Blue Cipher

Step 3: Vigenere Cipher

Instead of subtracting, you add the numbers you get from the 2 letters, then modulo 26 to get your new encrypted letter.

Example

Encrypted Word: QWERTY Keyword: ADJUST

Q + A = 19 + 8 = 27 % 26 = 1 = N
W + D = 17 + 12 = 29 % 26 = 3 = P
E + J = 5 + 22 = 27 % 26 = 1 = N
R + U = 4 + 2 = 6 % 26 = 6 = L
T + S = 25 + 21 = 46 % 26 = 20 = Y
Y + T = 20 +25 = 45 % 26 = 19 = Q
New Encrypted Word: NPNLYQ

Step 2: Letter Transposition

Read the 2 6 digit numbers from right to left.

The R# instruction is now a L# instruction where you shift the whole word to the LEFT # times.

After that, you should have a new encrypted word.

Example

Encrypted Word: NPNLYQ
Middle Number: 946528
Bottom Number: 633769

NPNLYQ + 89 => NPNLYQ + 26 => NQNLYP
NPNLYQ + 26 => NQNLYP + RV => QYLPNN
NPNLYQ + 57 => QYLPNN + L2 => LPNNQY
NPNLYQ + 63 => LPNNQY + 13 => NPLNQY
NPNLYQ + 43 => NPLNQY + 45 => NPLQNY
NPNLYQ + 96 => NPLQNY + 23 => NLPQNY
New Encrypted Word: NLPQNY

Atbash Cipher

Just do exactly as the step is shown in the original Blue Cipher to get your decrypted word.

Example

Encrypted Word: NLPQNY

N => 27 - 14 => 13 => M
L => 27 - 12 => 15 => O
P => 27 - 16 => 11 => K
Q => 27 - 17 => 10 => J
N => 27 - 14 => 13 => M
Y => 27 - 25 => 2 => B
Decrypted Word: MOKJMB

Inverted Indigo Cipher

Step 1: Fractionated Morse Cipher

Just do exactly as the step is shown in the original Indigo Cipher to get your logic key.

Example

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

J	M	L	B	H	N	P
-	-	-	•	-	-	•
-	x	-	x	•	x	-
•	•	x	•	x	-	-

- - . - x . - - x . x . - . x - x - . - - => QWERTY

Step 3: Logic Cipher

Just do exactly as the step is shown in the original Indigo Cipher to get a new encrypted word.

Example

Encrypted word: TTEIDS
Logic Key: BRBANA
Top Binary: 001010
Middle Binary: 100101
Logic Gate: AND

T, B => 19, 1 + 0, 1 => 19, 27 => 10011 + 11011 + AND => 10011 => 19 => T

T, R => 19, 17 + 0, 0 => 19, 17 => 10011 + 10001 + AND => 10001 => 17 => R

E, B => 4, 1 + 1, 0 => 30, 1 => 11110 + 00001 + AND => 00000 => 0 => A

I, A => 8, 0 + 0, 1 => 8, 26 => 01000 + 11010 + AND => 01000 => 8 => I

D, N => 3, 13 + 1, 0 => 29, 13 => 11101 + 01101 + AND => 01101 => 13 => N

S, A => 18, 0 + 0, 1 => 18, 26 => 10010 + 11010 + AND => 10010 => 18 => S

New Encrypted Word: TRAINS

Step 2: Condi Cipher

Set up the key, get your starting offset, and for each letter of the encrypted word:

- Find the letter in the letter key.
- Shift to the right a number of times equal to the current offset.
- The new letter you end up on becomes the new encrypted letter.
- The same position of the letter you started on, using the number underneath, becomes your new offset.

Example

E	Q	U	I	P	A	B	C	D	F	G	H	J	K	L	M	N	O	R	S	T	V	W	X	Y	Z
0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2
1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6

A + 16 => V, 06

S + 06 => Z, 20

D + 20 => U, 09

F + 09 => R, 10

G + 10 => T, 11

H + 11 => W

Decrypted Word: VZURTW

Inverted Violet Cipher

Step 3: Quagmire Cipher

Build the encryption key as usual shown in the original Violet Cipher and for each letter of the encrypted word do the following:

- Find the letter of the encrypted word in the top row of the encryption key to use as your column.
- Use the row that is the same position as the letter in the encrypted word (The top row doesn't count as a row).
- The intersection of the row/col will give you the new encrypted letter.

Example

Middle Screen KW: JOKING
Top Screen KW: KNEADS
Encrypted Word: DQQIPL

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

D => O
Q => S
Q => P
I => T
P => P
L => U
New Encrypted Word: OSPTPU

Step 2: Route Transposition

Determine which grid you use back in the original Violet Cipher.

Fill in the grid in reading order with the encrypted word.

Starting at the top left square of the grid with the rigit digit on the screen being your starting number, go counter-clockwise on the grid and subtract 1 to that number until that number is 1.

Read it in clockwise order starting with the letter you end up on from the previous step to get your new encrypted word.

Encrypted word: OSPTPU
Number: 12

O	S	P
T	P	U

OSPTPU => TOSPUP

Step 1: Porta Cipher

Do exactly as the step is shown in the original Violet Cipher to get a decrypted word.

Example

Encrypted word: TOSPUP
Keyword: JOKING

J + T => C
O + O => H
K + S => A
I + P => L
N + U => B
G + P => M
Decrypted word: CHALBM

Inverted White Cipher

Step 2: Grille Transposition

Do exactly as the step is shown in the original White Cipher to get a decrypted key.

Example

Top Screen: RPXNWKDL
Mid Screen: YAFOCSEU
# of Ports: 3

R	P	X	N	|		X	X	
W	K	D	L	|				
Y	A	F	O	|			X	
C	S	E	U	|	X			

PXFC

R			N	|	X			
W	K	D	L	|				X
Y	A		O	|		X		X
	S	E	U	|				

PXFC-RLAO

			N	|				X
W	K	D		|		X		
Y				|				
	S	E	U	|		X	X	

PXFC-RLAO-NKSE

				|				
W		D		|	X		X	
Y				|	X			
			U	|				X

Decrypted Key: PXFCRLAONKSEWDYU

Step 3: Sean Cipher

Create "THE SEAN SHIFTER" and for each letter of the encrypted word do the following:

- Find the letter of the encrypted word in THE SEAN SHIFTER and replace with the letter above/below.
- Take the last letter of the bottom half of THE SEAN SHIFTER and place it at the front of the bottom half.
- Swap the first letter of the top half with the first letter of the bottom half of THE SEAN SHIFTER.
- Take the first letter of the top half of THE SEAN SHIFTER and place it at the back of the top half.

This will give you a new encrypted word.

Example

Encrypted Word: BQGFBE
Key: BGHIJMQTVZPXFCRLAONKSEWDYU (Lit is odd)

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

B -> C

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

Q -> O

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

G -> H

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

F -> K

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

B -> T

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

E -> S

New Encrypted Word: COHKTS

Step 1: Base Caesar Cipher

Figure out the base 10 of the number on the screen using the original White Cipher manual.

After converting the number to base 10, subtract the number to each letter of the encrypted word using its alphanumeric position (A = 1, B = 2...Z = 26), add 26 until it's a number between 1 - 26, and convert the number back to a letter to get a decrypted word.

Example

Encrypted word: COHKTS
Number: 414
Base: 3 + 15 + 8 + 11 + 20 + 19 = 76 % 8 = 4 + 2 = 6

6^2 6^1 6^0
4 1 4
$6^2 * 4 = 144$
$6^1 * 1 = 6$
$6^0 * 4 = 4$
144 + 6 + 4 = 154

(Do this to make it easier for you): 154 % 26 = 24
C = 3 + 24 = 27 % 26 = 1 = A
O = 15 + 24 = 39 % 26 = 13 = M
H = 8 + 24 = 32 % 26 = 6 = F
K = 11 + 24 = 35 % 26 = 9 = I
T = 20 + 24 = 44 % 26 = 18 = R
S = 19 + 24 = 43 % 26 = 17 = Q
Decrypted Word: AMFIRQ

Inverted Gray Cipher

Step 3: Portax Cipher

Do exactly as the step is shown in the original Gray Cipher to get a new encrypted word.

Encrypted Word: DPMWFJ -> DW-PF-MJ
2nd Letter in SN: E

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

DW -> JK
PF -> AE
MJ -> CD
JK - AE - CD -> J A C K E D
New Encrypted Word: JACKED

Step 2: Bit Switch Cipher

Get the scrambler using the chart on the original Gray Cipher manual.

Next turn each letter of the encrypted word you have so far into it's alphanumeric position (A = 1, B = 2...Z = 26). If the binary bit (bottom screen) at the letter's position is a 1, add 26 to the number. Then turn each number into it's binary sequence using the table in the original Gray Cipher manual.

For each binary sequence, run it through the scrambler so that the binary bit is in the same position as the number in the same position in the scrambler. Ex: 35124: 01101 -> 10011.

Finally turn each number back into a letter by treating the number as its alphanumeric position.

Example

Encrypted Word: PHVCQC
Scrambler Used: 24153
Bottom Screen Binary: 000000

P -> 16 + 0 -> 16 -> 10000 + 24153 -> 01000 -> 8 -> H
H -> 8 + 0 -> 8 -> 01000 + 24153 -> 00010 -> 2 -> B
V -> 22 + 0 -> 22 -> 10110 + 24153 -> 11001 -> 25 -> Y
C -> 3 + 0 -> 3 -> 00011 + 24153 -> 00101 -> 5 -> E
Q -> 17 + 0 -> 17 -> 10001 + 24153 -> 01100 -> 12 -> L
C -> 3 + 0 -> 3 -> 00011 + 24153 -> 00101 -> 5 -> E
New Encrypted Word: HBYELE

Step 1: Ragbaby Cipher

Create the ragbaby key and starting with an offset of 1, for each letter of the encrypted word do the following:

- 1: Find the letter in the Ragbaby key.
- 2: Go to the right a X number of times where X is the offset.
- 3: Replace that letter with the letter you end up on.
- 4: Add 1 to the offset.

After that, you now have the decrypted word.

Example

Encrypted Word: HBYELE
Ragbaby Key: WAXYBCDEFGHIJKLMNOPQRSTUVZ (Unlit is even)

H -> I
B -> D
Y -> D
E -> I
L -> Q
E -> K
Decrypted Word: IDDIQK

Inverted Black Cipher

Step 3: Enigma Cipher

Do exactly as the step is shown in the original Black Cipher to get a new encrypted word.

Step 2: Railfence Transposition

First determine how many rows will be used by taking the number of ports, modulo 4, plus 2.

For each letter, move down then up the rows to form rows of letters.

Read the letters left to right, top to bottom to get your new encrypted word.

Example

Encrypted word: XITOZH

```
X   Z
 I O H
  T
```

New Encrypted Word: XZIOHT

Step 1: Digrafid Cipher

Do exactly as the step is shown in the original Black Cipher to get a decrypted word.

Example

Key A: ACDFGHIJKLOPQTVWXYZNUMBERS
Key B: BROWSEDACFGHIJKLMNPQTUVXYZ Encrypted Word: XZIOHT

1	2	3	4	5	6	7	8	9
A	C	D	F	G	H	I	J	K
L	O	P	Q	T	V	W	X	Y
Z	N	U	M	B	E	R	S	#

1	2	3
4	5	6
7	8	9

									B	F	P	1
									R	G	Q	2
									O	H	T	3
									W	I	U	4
									S	J	V	5
									E	K	X	6
									D	L	Y	7
									A	M	Z	8
									C	N	#	9

XZ -> 868
IO -> 713
HT -> 633

Rearranging numbers so it's top to bottom, left to right.
876
613
833
Read it, left to right, top to bottom.

876 -> SE
613 -> HO
833 -> JT
Decrypted Word: SEHOJT

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.

Upon submitting the correct answer, the module will display 2 words on the top and middle screen. If you were to submit either of these words on an active Ultimate Cipher, it will generate a puzzle depending on the word you submitted. Solving one of them will give a you 3 letter key. Solve both of them and combine the 2 keys to get a 6 letter word. Submit this word for a bigger challenge. If you ever want to go back to Ultimate Cipher, submit the word "CANCEL".

If you try to submit a word that belongs to 1 cipher on a different cipher, it will strike you so make sure you're on the right cipher while submitting.