

## On the Subject of Vigilant Psycho



*Is the name misspelt this way to prepare for the wrath that is about to come?*

The module displays five letters on its upper screen.

Use the transformations corresponding to the colours of each letter in the table of page 2 to obtain the original sequence of letters.

When the module refers to alphabetic positions, it refers to the AlZ26 positions in the alphabet used on each stage. This alphabet will change upon switching stages.

Caesar shifting the first letter of the target word by the alphabetic positions of each letter in the original sequence one after another yields the other letters of the target word.

Enter the target word into the module using the module's keyboard.

The colour transformations also apply the letters that are entered.

Submitting the correct target word will advance the module to the next of three stages, scrambles the keyboard, and changes its colouring. If the submit button is pressed before 6 letters have been inputted, the submit button will do nothing instead.

The red button can be pressed at any time to clear the entry. If the red button is pressed twice in a row while the entry is empty, or two consecutive strikes have occurred in later stages, the module will step back a stage, and require the previous stage to be completed again.

Stage	First Letter + Extra Rules	Alphabet Used
1	Use the first letter of the serial number. No extra rules.	The English Alphabet (ABCDEFGHIJKLMNOPQRSTUVWXYZ)
2	The only letter coloured differently from the rest of the letters in the keyboard. This letter will take transformations of the other colours on the keyboard, rather than itself when inputted.	The 6 letters inputted on stage 1, repeated multiple times, until a length of 26 letters is formed. Each repeating letter will then take the next unused letter in the English alphabet, wrapping around to A if Z is used.
3	The letter on the keyboard that only has 6 possible different colourings. More details on the following pages.	The keyboard displayed on stage 3, in reading order.

To assist with denoting what stage the user is on, use the number of lit LEDs on the bottom right of the module and add 1 to this to obtain the stage the module is on. The last lit LED will turn yellow if the next strike or the next red button press will cause the module to step back a stage.

Colour	Transformations
White	Nothing.
Red	Shift forwards by its position on the screen from left to right, 1 being the left-most letter.
Magenta	Shift backwards by the alphabetic position of the previous transformed letter. If this is the first letter, treat this as white.
Yellow	Shift forwards by the digit of the serial number in its position if it is a number or its alphabetic position otherwise.
Green	Consider X as the numeric digit of the serial number in its position, wrapping around to the first digit, if its position is greater than the amount of digits in the serial number. If its position on the screen from left to right (1 being left-most) and the number of ports are both even or both odd, shift forwards by X. Otherwise, shift backwards by X.
Cyan	Subtract its alphabetic position from 27.
Violet	Shift backwards by the sum of the numeric digits of the serial number and its position on the screen from right to left, 1 being the right-most letter on the module.

Upon entering stage 3, a 15 minute timer will start ticking down. If the timer expires or a strike occurs on this stage, the module will forcibly step back to stage 2.

After applying the original procedure, you will need to shift backwards by the alphabetic positions of each letter decoded from stage 2 to finally get a target word for this stage.

The submit button will also glitch out, blinking in a series of red, green, and gray flashes.

Pressing the submit button before inputting 6 letters will now cycle between the various colours that can be applied to each letter. Each colour must be used only once with the exception of 1 colour that should NOT be used in the solution at all. Refer to the next page to find the forbidden colour.

In addition, one other letter MUST be inputted onto the module, BEFORE its transformation applies. The missing colour corresponding to the letter on the keyboard that only has 6 possible different colourings will correspond to ANY of the letters that should be inputted. All other letters on the keyboard will cycle through all 7 possible different colourings.

Missing Colour	White	Red	Magenta	Yellow	Green	Cyan	Violet
Required Letters	ABCDEF	HJKLMNO	PQRSTU	WXYZABCD	EFGHIJK	LMNOPQRS	TUVWXYZ

## Forbidden Colour Calculations

Take the day, the number of strikes accumulated from all modules on the same bomb as this module upon entering stage 3, the number of indicators, and the colours flashed from the submit button.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
White	Red	Magenta	Yellow	Green	Cyan	Violet

Associate with the colour underneath the corresponding day, from the table provided above, and cycle to the right of the table as many times as the amount of strikes accumulated and the number of indicators, wrapping around if necessary. Refer to this as the current colour.

From the colours flashed from the submit button, treat green and red flashes as binary digits 1 and 0 respectively. Treat a long gray flash as a separator between the last and first binary digits. Only 7 binary digits should be obtained this way. Using this binary, go through the conditions provided to determine the forbidden colour, stopping on the first condition met.

When shifting the binary, treat the binary as a loop of 7 digits. Shifting the binary left means taking the first digits and placing them at the end; shifting the binary to the right means taking the last digits and placing them at the beginning.

Condition	Action
All binary digits are 1s or 0s	The forbidden colour is the current colour.
Exactly 1 binary digit is a 1 or a 0	The forbidden colour is between the current colour and the colour in the same position as the binary digit different from the rest of the digits, wrapping around in the colour table. If the colour in the position of the differing binary digit is the current colour, the forbidden colour is the the current colour.
By shifting the current binary, at least 4 consecutive binary digits of 1s or 0s can be formed	The forbidden colour is 3 colours to the right the current colour, wrapping around in the colour table.
By shifting the current binary, a sequence where all binary digits alternate can be formed	The forbidden colour is N colours to the right of the current colour, where N is the minimum amount of left shifts required to shift the binary to meet this condition, wrapping around in the colour table.
By shifting the current binary, any of these sequences can be formed, where A and B are different binary digits: ABAABBB, AAABBAB	The forbidden colour is N colours to the left of the current colour, where N is the minimum amount of left shifts required to shift the binary to meet this condition, wrapping around in the colour table.
Exactly 2 binary digits are 1s or 0s	Shift the binary to the left as few times as possible (potentially 0) such that one of the differing binary digits overlap with the current colour. The forbidden colour is in the same position as the other binary digit.
No other conditions are met	Your sequence can be formed in the style: ABBABBA. The forbidden colour is in the middle of that sequence, potentially with the sequence wrapping around.