# On the Subject of Cruel Game of Life

Live a colorful life, they say. They're wrong. Colors just make life cruel.

The module will display a grid of squares colored either black, white, red, orange, yellow, green, blue, purple or brown. To defuse this module, the rules of Conway's Game of Life (shown in table A) will need to be applied to the grid a number of times according to the number of generations shown to the right of the grid. Note that the rules need to be applied to all the squares at the same time for each generation.
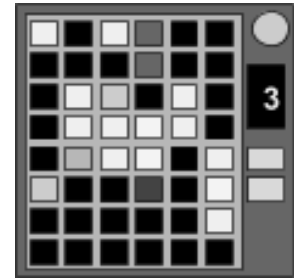
The state of each square can be toggled by clicking on it. Note that colored squares are to be converted into either black or white, according to table B, before applying the rules from table A. Black and White are not considered colors.

- If the square isn't flashing, simply use the rule from Table B.
- If the square is flashing one color, turn the square black if the rule applies and white if it doesn't.
- If the square is flashing 2 primary colors, use the rule for the mixture of 2 colors.
- If the square is flashing a primary color and a secondary color, and the secondary color contains the primary color as its component, use the rule for the primary color, otherwise use the rules for the secondary color.
- If the square is flashing 2 secondary colors, use the rules for the primary color that is a component of both flashing colors.
- If the square is flashing 2 colors and one of them is brown, use the rule for brown if the last digit of the serial number is even, otherwise use the rule for the other color.

Entering the correct final configuration by pressing Submit will solve the module. Entering the wrong configuration this way will induce a strike. At any time, by pressing Reset, the module will return to its initial state.

BUT if the bomb has exactly 6 batteries in 3 holders, and an unlit Bob, ignore all the rules. Bob has returned to help you once again. Just press the Submit button during the initial state. Thanks, Bob!

Table A

A square is considered neighbouring if it is adjacent to another square, including diagonally.

If square is black:

White neighbouring squares < 3 or > 3	Stay black
White neighbouring squares = 3	Turn white

If square is white:

White neighbouring squares < 2 or > 3	Turn black
White neighbouring squares = 2 or = 3	Stay white

Table B

Color of square:	Turns white if:
Red	At least one strike*, unless there are no batteries
Orange	Less than half of the bomb's original time limit is displayed on the timer*, unless a CAR indicator is present
Yellow	There are more lit than unlit indicators, unless an RJ-45 port is present
Green	Even number of solved modules*, unless a CLR indicator is present
Blue	Serial number contains at least one letter in common with the word "Sea" or "Sky", unless an SND indicator is present
Purple	There are more unlit than lit indicators, unless there are at least 4 batteries
Brown	There are at least 3 different port types, unless there are no indicators

* Calculated when Submit is pressed

Appendix: primary and secondary colors

- Primary colors are red, blue and yellow
- Secondary colors are purple, green and orange
- Mixing red and blue makes purple
- Mixing blue and yellow makes green
- Mixing red and yellow makes orange
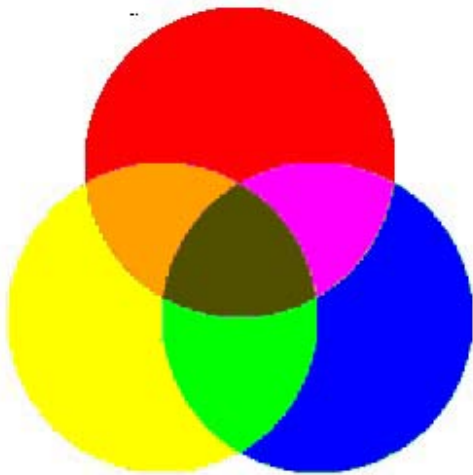- Mixing all 3 primary colors makes brown

Diagram source: http://www.tomjewett.com/colors/paint.html