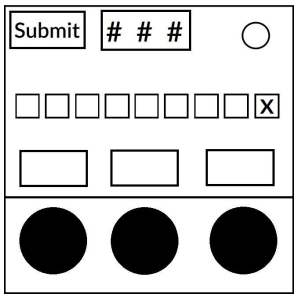
On the Subject of Colorful Dials



*Look at all the pretty colors... *Twist* *Twist* *Twist* *Twist*.*

- On the module, you will see 3 dials that are black, each with a small screen above it , a larger screen displaying a 3 digit colored number, a submit button on the top left, and 9 square colors.
- The larger screen will display the 3 digit number in different colors.
- Pressing one of the colored squares will toggle it. Pressing a dial with a toggled color will color that dial in that color. There are 8 different colors: (R)ed, (O)range, (Y)ellow, (G)reen, (C)yan, (B)lue, (M)agenta, (P)ink.
- The black square with the X will reset the dials back to black.
- Set each dial to the correct position/color and submit it at the correct time to disarm the module.
- Submitting the wrong combination and/or submitting it at the wrong time will cause it to strike.

Step 1: Initial Colors/Positions

Follow the steps below:

- A: Use the position of the colored square (1 - 8) that is the same color as the nth color of the 3 digit number as a column for the cardinal chart.
- B: Use the color of the nth digit of the 3 digit number as the row for the cardinal chart.
- C: The intersection in the cardinal chart will give you a abbreviated cardinal direction.
- D: Use the nth color and digit of the 3 digit number and find the combination in the color grid below.
- E: Count how many numbers around the nth dial that matches the color as the nth color of the 3 digit number.
- F: Using the cardinal from step C and the number from step E, go in that direction in the grid from the square you found in step D that many times, plus 1. Wrap around the grid as needed.
- G: The new square you end up on becomes the initial color/position of the nth dial.

Do this for each dial/digit to get your initial colors/positions. Paint each dial in that color and set the positions to that number.

Cardinal Chart

	1	2	3	4	5	6	7	8
Red	S	NE	SE	SW	E	N	NW	W
Orange	E	S	NW	NE	N	SE	W	SW
Yellow	NW	SW	N	W	SE	S	NE	E
Green	SW	W	S	SE	NE	E	N	NW
Cyan	SE	NW	SW	N	W	NE	E	S
Blue	N	SE	W	E	S	NW	SW	NE
Magenta	W	E	NE	S	NW	SW	SE	N
Pink	NE	N	E	NW	SW	W	S	SE

Color Grid

O0	G5	M4	C5	P7	Y3	C8	Y9	C3	B3
C2	G6	O9	P2	G2	R2	R0	C4	B2	P1
M0	P0	G0	M2	G9	C1	O7	B5	Y6	P6
O1	M6	R1	G8	B6	O4	B0	P4	M1	Y1
C9	B8	G1	C6	O6	O8	R8	C0	Y4	Y7
R7	G3	B7	P5	Y2	O3	R5	M9	B1	Y8
M5	P9	R9	C7	Y0	M8	R3	M7	M3	Y5
G4	O2	P8	G7	R4	B4	R6	B9	P3	O5

Step 2: Final Colors/Positions

Follow the steps below using the same tables above:

- A: Use the position of the colored square (1 - 8) that is the same color as the nth dial in reading order as a column for the cardinal chart.
- B: Use the color of the nth dial as the row for the cardinal chart.
- C: The intersection in the chart will give you a abbreviated cardinal direction.

- D: Use the nth 2 digit number and use the first statement that is true below to get numbers A and B:
    - If the Serial Number's last digit is even, number A is the left digit and number B is the right digit.
    - Otherwise, number A is the right digit and number B is the left digit.
- E: Use the color of the nth 2 digit number and number A to find the combination in the color grid to use as your starting square.
- G: Using the cardinal from step C and number B, go in that direction in the grid from the square you found in step E that many times, plus 1. Wrap around the grid as needed.
- H: The new square you end up on becomes the final color/position of the nth dial.

Do this for each dial/number to get your final colors/positions. Make sure to press the clear button so you can repaint and reposition the dials.

Step 3: Submit Time

Depending on the color of each 2 digit number, apply the mathmatical operation to it:

TDN - Two Digit Number
LDN - Left Digit Number
RDN - Right Digit Number

- Red: $LDN^2 + RDN^2$
- Orange: $(LDN - RDN)^2$
- Yellow: $(RDN - LDN)^2$
- Green: RDN * LDN
- Cyan: Round Down(TDN / (LDN + 1))
- Blue: Round Down(TDN / (RDN + 1))
- Magenta: TDN^2 % (LDN + 1)
- Pink: TDN^2 % (RDN + 1)

After altering the 3 numbers, add them together, then take the digital root of the number. Submit when the last seconds digit on the countdown timer is equal to this number.