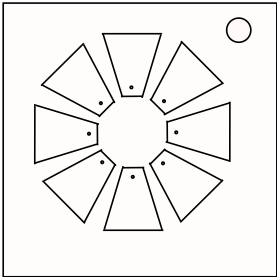# On the Subject of Round Keypads

*I think someone tried to make this module look really cool, but failed.*

- The circular keypad contains 8 symbols from the columns below.
- Find the column below that contains the most symbols from the keypad.
- If two or more columns have the most symbols, use the right-most column.
- Press all buttons that have a symbol not present on the correct column.

On the Subject of Morsematics

Get it? Because it uses morse and maths! I'll see myself out...
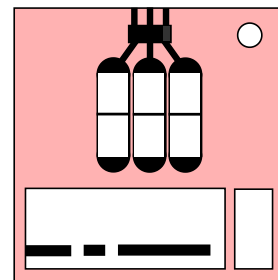
- Every letter of the alphabet is considered to have numeric value equal to its position (A=1, B=2 ... Z=26)
- Numeric values outside the 1-26 range wrap around (Z+1=A, 26+1=1)
- Three unique letters are being received on a loop, shown by the three flashing lights in the middle of the module
- To solve the module, a correct response letter must be sent in morse using the transmit button in the bottom-right
- The small switch at the top can be used to toggle the received letter lights

Transmitted morse is interpreted based on gaps between button holds.
Holding for more than double the length of the average gap is considered to be a dash, and anything shorter is considered a dot.
When transmitting, E and T are considered equal, as they are indistinguishable.

Take the 4th and 5th character of the serial number, this is your character pair.

Perform each step below in sequence, modifying your character pair progressively:

- For each indicator that has a matching letter in the received letters; add 1 to the first character of your pair if the indicator is on, or the second character if it is off
- If the sum of your character pair is a square number, add 4 to the first character; otherwise, subtract 4 from the second character
- Add the largest received letter to the first character in your pair
- If any received letters are prime, subtract them from the first character in your pair
- If any received letters are square, subtract them from the second character in your pair
- If batteries are present and any received letters are divisible by the number of batteries present, subtract those received letters from both characters in your pair

After performing all steps, perform whatever rule applies below:

- Characters are equal: Transmit the first character
- First character larger: Transmit the difference of the two characters
- Second character larger: Transmit the sum of the two characters

How to Interpret

1. A short flash represents a dot.
2. A long flash represents a dash.
3. There is a long gap between letters.
4. There is a very long gap before the word repeats.

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

A	1		N	14
B	2		O	15
C	3		P	16
D	4		Q	17
E	5		R	18
F	6		S	19
G	7		T	20
H	8		U	21
I	9		V	22
J	10		W	23
K	11		X	24
L	12		Y	25
M	13		Z	26

On the Subject of Forget Me Not

This one likes attention, but not too much attention.
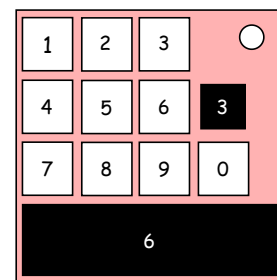
- The main display will update on each solved module*.
  The current display stage is shown on the smaller
  display.
- Add the displayed number to the corresponding number
  gained from the chart below, and record the least
  significant digit from the total. This is the calculated number for that
  stage.
- When all other modules* have been completed, the display will turn blank.
- Press the calculated numbers on the keypad in the order they were obtained.
- If an incorrect calculated number is entered, an LED will indicate what
  number was displayed.

First number:

- If the bomb has an unlit CAR indicator, the number is 2.
- Otherwise, if the bomb has more unlit indicators than lit indicators, the
  number is 7.
- Otherwise, if the bomb has no unlit indicators, the number is the amount
  of lit indicators.
- Otherwise, the number is the last digit of the serial.

Second number:

- If the bomb has a serial port and 3 or more digits in the serial, the
  number is 3.
- Otherwise, if the previous calculated number was even, the number is the
  previous calculated number plus 1.
- Otherwise, the number is the previous calculated number minus 1.
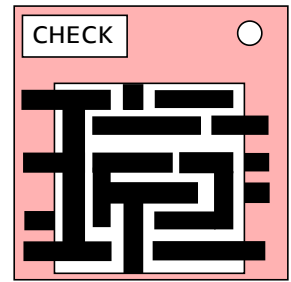

All other numbers:

- If either of the previous two calculated numbers were 0, the number is
  the largest digit in the serial.
- Otherwise, if both of the previous two calculated numbers were even, the
  number is the smallest odd digit in the serial, or 9 if no such digit
  exists.
- Otherwise, the number is the most significant digit of the sum of the
  previous two calculated numbers.

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*Some modules are ignored by Forget Me Not modules.

On the Subject of Plumbing

I'd wash your hands after this one...

- The module has 4 input pipes (left) and 4 output pipes
  (right). At least one input pipe and one output pipe will
  be active.
- The defuser must connect all active input pipes to all
  active output pipes, whilst taking care not to connect
  inactive pipes, using the 6 by 6 grid of pipes. Clicking on a pipe in the 6 by
  6 grid will rotate it.
- All pipes connected to an active pipe must also correctly connect to other
  pipes. Any pipe with a connection not going into another pipe (or going
  into an inactive in/out pipe) will cause a strike upon checking the
  solution.
- Once the solution has been entered, press "CHECK" to verify the solution. An
  incorrect solution will cause a strike.
- Active input and output pipes are determined using the table below. If the
 pipe has more points for it than against, it is active.

Red Input	Yellow Input
• For: Serial contains a '1' • For: Exactly 1 RJ45 port • Against: Any duplicate ports • Against: Any duplicate serial characters	• For: Serial contains a '2' • For: One or more Stereo RCA ports • Against: No duplicate ports • Against: Serial contains a '1' or 'L'
Green Input	Blue Input
• For: Serial contains 3 or more numbers • For: One or more DVI-D ports • Against: Red Input is inactive • Against: Yellow Input is inactive	• Note: Always active if all other inputs are inactive • For: At least 4 port types • For: At least 4 batteries • Against: No ports • Against: No batteries
Red Output	Yellow Output
• For: One or more Serial ports • For: Exactly one battery • Against: Serial contains more than 2 numbers • Against: More than 2 inputs are active	• For: Any duplicate ports • For: Serial contains a '4' or '8' • Against: Serial doesn't contain a '2' • Against: Green Input is active
Green Output	Blue Output
• For: Exactly 3 inputs are active • For: Exactly 3 ports are present • Against: Less than 3 ports are present • Against: Serial contains more than 3 numbers	• Note: Always active if all other outputs are inactive • For: All inputs are active • For: Any other output is inactive • Against: Less than 2 batteries • Against: No Parallel port

On the Subject of the Safety Safe

This safe either contains immense riches, or is empty.

- All 6 dials must be oriented correctly to solve the module.
- Each dial has a tell, where it clicks louder. This is the starting location for each dial.
- Follow the rules below to determine how far to rotate each dial after the starting location.
- Turn the lever to check the solution. Any correct dials are indicated with a green light, and any incorrect dials are indicated with a red light.

- Starting at 0, add the number of port types on the bomb, multiplied by 7.
- Add the number of lit indicators with a matching letter in the serial, multiplied by 5.
- Add the number of unlit indicators with a matching letter in the serial.
- For the first five dials, add the number obtained from the table on the next page, using both the location of the dial and the serial number as reference.
- For the last dial, add the sum of the numbers in the last column using all characters in the serial number as a reference.
- Note: A full rotation takes 12 turns.
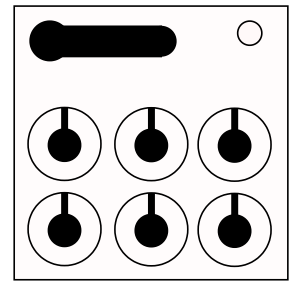
	Dial					
	Top			Bottom		
	Left	Middle	Right	Left	Middle	Right
	Serial					
	First	Second	Third	Fourth	Fifth	All
A	8	3	4	8	9	0
B	10	1	3	7	3	8
C	2	1	1	5	3	6
D	11	6	11	11	7	7
E	0	5	5	8	2	1
F	4	2	7	7	1	5
G	7	4	4	2	10	5
H	8	3	6	6	6	5
I	0	11	0	0	9	10
J	2	11	8	0	5	6
K	5	2	5	1	0	4
L	1	9	8	11	11	11
M	1	7	9	5	6	2
N	9	5	1	4	4	9
O	5	9	8	10	2	8
P	3	10	9	1	9	7
Q	4	10	6	1	4	8
R	8	0	4	0	6	11
S	9	4	0	6	3	10
T	7	6	7	11	5	3
U	11	9	6	3	11	1
V	11	11	2	8	1	0
W	6	0	11	6	11	2
X	4	2	7	2	8	10
Y	10	7	10	10	8	9
Z	3	7	1	10	0	4
0	7	0	3	5	8	6
1	9	10	10	9	1	2
2	2	5	11	7	7	3
3	10	8	10	4	10	4
4	6	8	0	3	5	0
5	6	3	3	3	0	11
6	1	1	5	2	7	3
7	0	6	2	4	2	1
8	5	4	9	9	10	7
9	3	8	2	9	4	9

On the Subject of Simon States

I'm not sure this even qualifies as Simon Says...

- One or more colours will flash per stage.
- Each stage will also show the colours of previous stages.
- The current sequence will repeat after a short delay.
- When the sequence repeats, your input is not reset.
- If you press an incorrect button, your input is reset.
- Using the table on the next page, press the correct colour for each stage to advance.
- When a rule asks for colour priorities, use the table below to determine the correct colour.
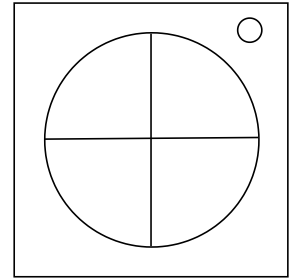
Priority	Top-Left Button Colour			
	■ Red	▲ Yellow	● Green	★ Blue
Highest	■ Red	★ Blue	● Green	▲ Yellow
High	★ Blue	▲ Yellow	■ Red	● Green
Low	● Green	■ Red	▲ Yellow	★ Blue
Lowest	▲ Yellow	● Green	★ Blue	■ Red

Stage 1

- If one colour flashed, press that colour.
- Otherwise, if two colours flashed and one was ★ blue, press the highest priority colour that flashed.
- Otherwise, if two colours flashed, press ★ blue.
- Otherwise, if three colours flashed including ■ red, press the lowest priority colour that flashed.
- Otherwise, if three colours flashed, press ■ red.
- Otherwise, press the second highest priority colour.

Stage 2

- If only ■ red and ★ blue flashed, press the highest priority colour that didn't flash.
- Otherwise, if two colours flashed, press the lowest priority colour that didn't flash.
- Otherwise, if one colour flashed and it was not ★ blue, press ★ blue.
- Otherwise, if one colour flashed, press ▲ yellow.
- Otherwise, if all colours flashed, press the same colour as stage 1.
- Otherwise, press the colour that didn't flash.

Stage 3

- If three colours flashed and at least one was pressed in a previous stage, press the highest priority colour that flashed and hasn't been pressed.
- Otherwise, if three colours flashed, press the highest priority colour that flashed.
- Otherwise, if two colours flashed and both have been pressed, press the lowest priority colour that didn't flash.
- Otherwise, if two colours flashed, press the same colour as stage 1.
- Otherwise, if one colour flashed, press that colour.
- Otherwise, press the second lowest priority colour.

Stage 4

- If three unique colours have been pressed, press the fourth colour.
- Otherwise, if three colours flashed and exactly one hasn't been pressed, press that colour.
- Otherwise, if at least three colours flashed, press the lowest priority colour.
- Otherwise, if one colour flashed, press that colour.
- Otherwise, press ● green.

On the Subject of The Square Button

This may look like the button you know and love, but don't be fooled! It's a brilliantly disguised imposter foiled only by a single mistake: It's the wrong shape.

Follow these rules in the order they are listed. Perform the first action that applies:
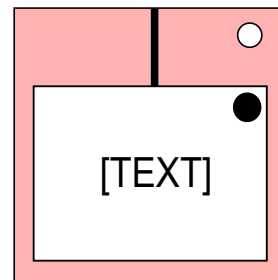
1. If the button is blue and the number of AA batteries is larger than the number of D batteries, hold the button and refer to "Releasing a Held Button".
2. If the button is yellow or blue and has as at least as many letters on the label as the highest number in the serial, press and immediately release.
3. If the button is yellow or blue and the label states a colour, hold the button and refer to "Releasing a Held Button".
4. If the button has no label, press and immediately release when the two seconds digits on the timer match.
5. If the button is not dark grey and the number of letters on the label is larger than the number of lit indicators, press and immediately release.
6. If there are at least 2 unlit indicators and the serial contains a vowel, press and immediately release.
7. If no other rule applies, hold the button and refer to "Releasing a Held Button".

Releasing a Held Button

If you start holding the button down, a coloured LED will light up on the right side of the button case. Based on its colour, follow the rules below:

- <u>Cyan:</u> Release when the two seconds digits add up to 7.
- <u>Orange:</u> Release when the two seconds digits add up to 3 or 13.
- <u>Other:</u> Release when the two seconds digits add up to 5.

If the LED is flickering, follow these rules instead:

- <u>Cyan:</u> Release when the number of seconds remaining is a multiple of 7.
- <u>Orange:</u> Release when the number of seconds displayed is either prime or 0.
- <u>Other:</u> Release one second after the two seconds digits add up to a multiple of 4.