# How it works

## Samuel uses international morse code:

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

- The length of a dot is one unit
- A dash is three units
- The space between parts of the same letter is one unit
- The space between letters is three units
- The space between words is seven units

### Explanation:

Samuel requires 2 things before it will do anything useful:
1. A clock input
2. Some text input

To provide text input to Samuel, click anywhere within the text input screen **(C)**, you can then type using your computer's keyboard (until you click anywhere outside of the text input screen)

**Note:** currently only letters A-Z and numbers 0-9 are supported

Samuel treats one unit of time as the time between two clock inputs recieved via the clock input **(A)** because of this, fast clocks tend to work best.

Once you have entered some text, and hooked up the clock input **(A)** to a clock source you can then use the gate output **(H)** to trigger drums, envelopes, Nuclear Armageddon etc.

Knobs **(D - G)** can be used to vary the length of dots, dashes, new letters, and new words. Altering these values will change the characteristics of the resulting rhythms.