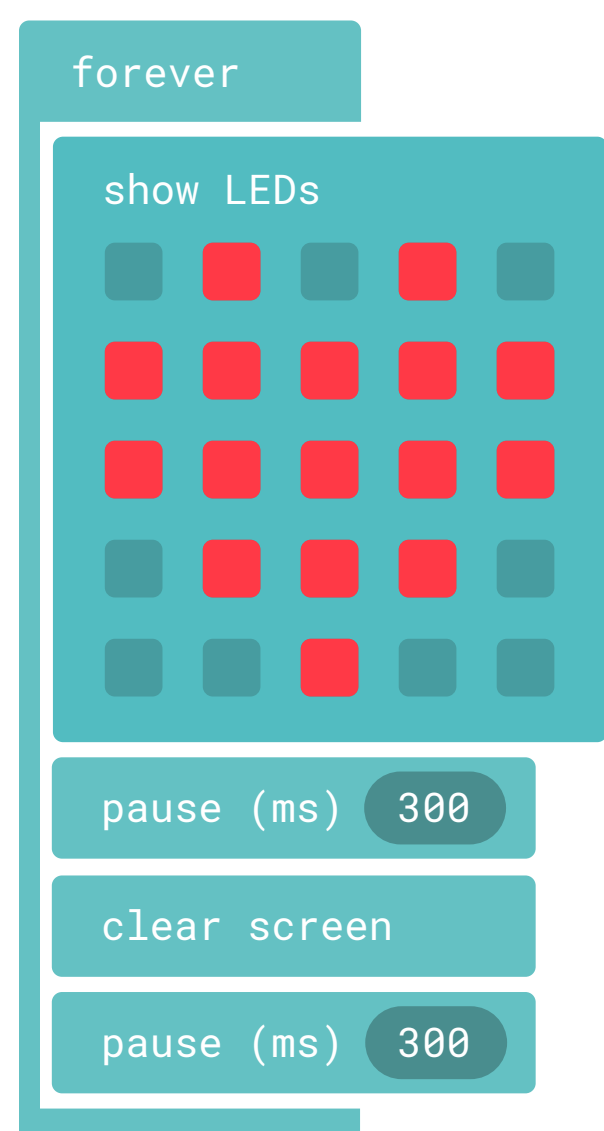## PLAN

When you start, think carefully about what small steps in particular you need to take to realize your great idea.

Here are some useful tips. Have fun!

CODE WITH MAKECODE


```
forever
  show LEDs
  [LED matrix]
  pause (ms) 300
  clear screen
  pause (ms) 300
```
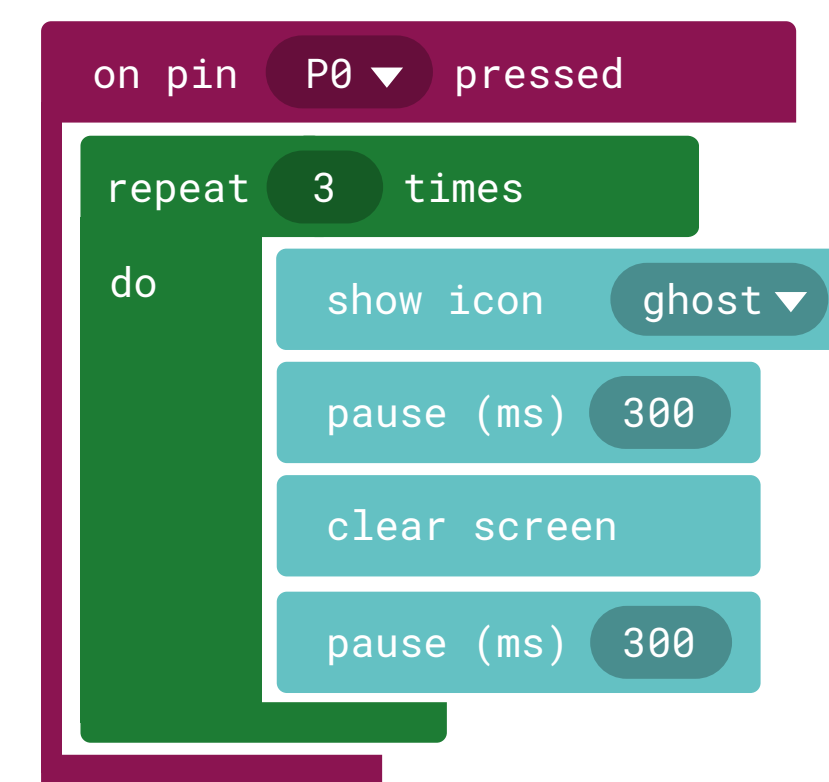
VARIABLE

stands for a value and must be created so that they can be read or changed.
You choose the name!

make a variable

ok ✓

REPETITIONS

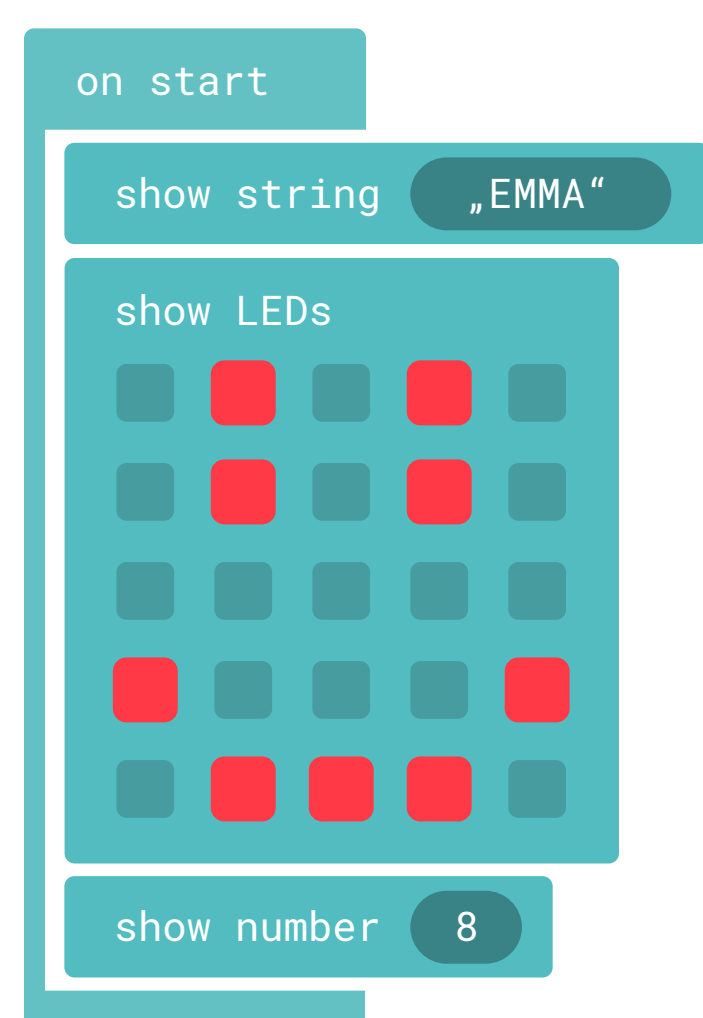are loops that are executed at different frequencies.

```
on pin P0 ▾ pressed
  repeat 3 times
  do
    show icon ghost ▾
    pause (ms) 300
    clear screen
    pause (ms) 300
```
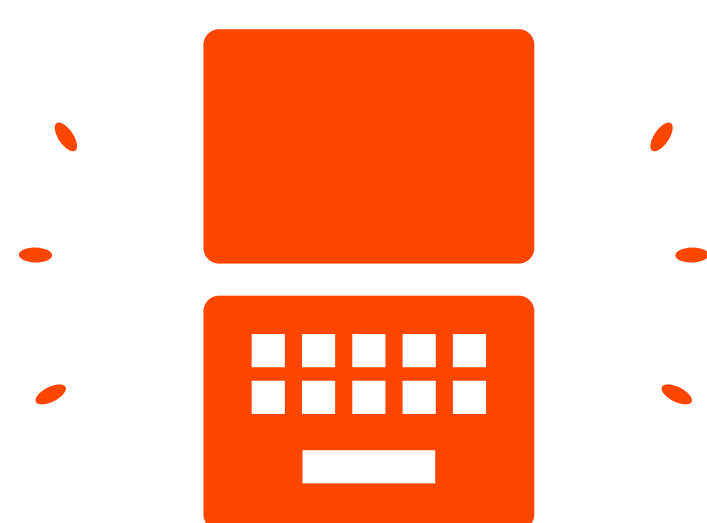
START EVENT

contains all commands that should be executed once at the start of the program.

PERMANENT EVENTS

contain all commands that are executed continuously.

BY CHANCE

a number is selected from a range of numbers defined by you, the 0 is included!

```
on start
  show string „EMMA"
  show LEDs
  [LED matrix]
  show number 8
```

DISPLAY CONTROL

Numbers, letters and images can be displayed on the LED matrix.

HACKING, CRAFTING, CODING

Be creative and program your own inventions!

CONDITIONS

in a program allow branching that determines which of two (or more) possible program sections is executed.

```
on shake ▾
  set random ▾ to pick random 0 to 4
  if        random ▾ = ▾ 0         1 = ▾ 0
  then
    show string „YES!"
  else
    show string „NO!"
```
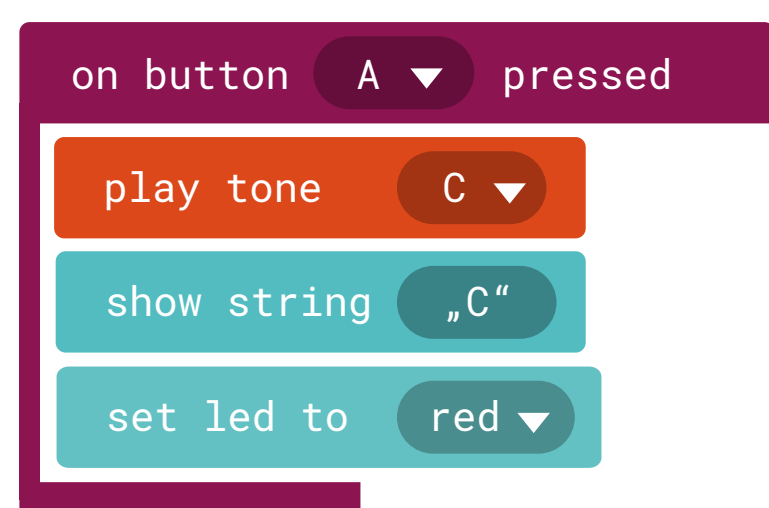
BREAKS

stop the execution. You can determine the duration. Test the program without pauses!
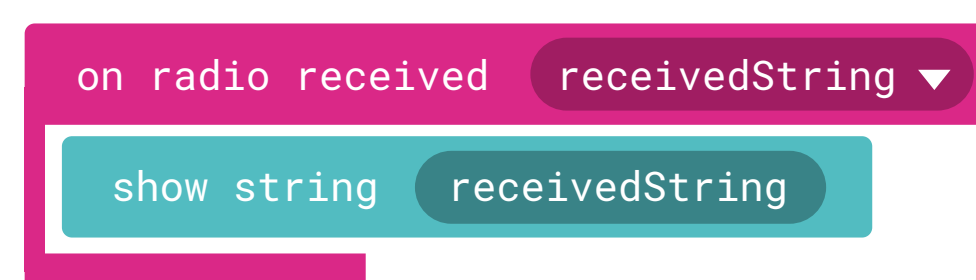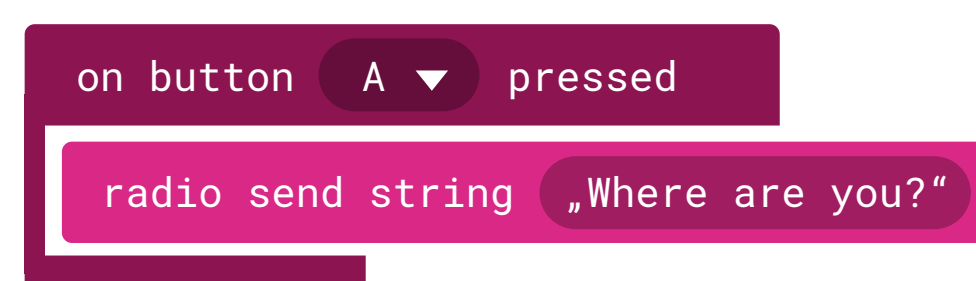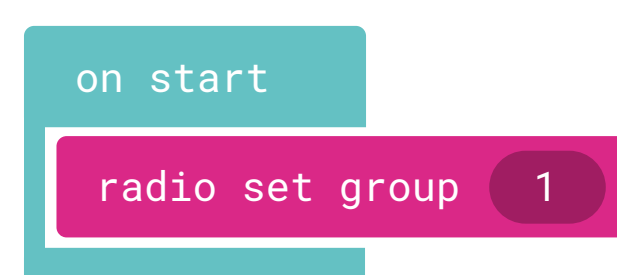
IF THIS/THEN DO THAT CONDITIONS

wait until a certain input condition is fulfilled. If this condition is fulfilled, all commands within the brackets are executed one after the other.

```
on button A ▾ pressed
  play tone C ▾
  show string „C"
  set led to red ▾
```

RADIO

Identify groups and send and receive messages from one Calliope mini to another by radio.

```
on start
  radio set group 1
```

```
on button A ▾ pressed
  radio send string „Where are you?"
```

```
on button B ▾ pressed
  radio send string „Here"
```

```
on radio received receivedString ▾
  show string receivedString
```

INSTRUCTION Command - that the computer executes.

PROGRAM Row of instructions. Basis to let a computer solve tasks.

TRUTH VALUE Result of a condition that is met or not - true or false.

OUTPUT An action noticeable with your senses. But also radio signals and the electrical voltage at the pins are outputs.

INPUT Information from the sensors, keys and pins that can be processed by the programs.

CONDITION Includes one or more statements and is called by a distinct, user-defined name.

BUG Means beetle in English. When programming, this is what the errors in the code are called.

CALLIOPE.CC/EN/LETS-START/EDITOR

CALLIOPE

DISPLAY, HACKING, CODING - explanations of the technical terms can be found at calliope.cc/en/technical-words