

WORKSHEET W020

FUNCTIONS

Since your Blockly programs are getting bigger and bigger, it's time to get to know the advantages of functions.

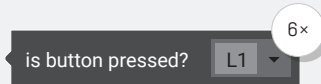
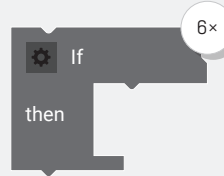
EXERCISE

Play a different note on each key, just like on a piano. Draw two multicolored pictures in their own function. Recall the first function for buttons L1, L2 and L3 and the second function for buttons R1, R2 and R3.

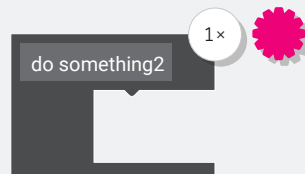
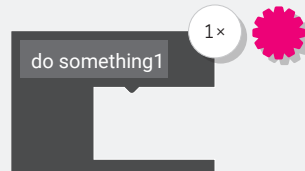
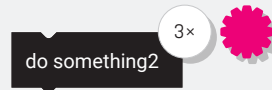
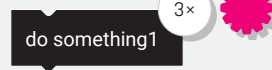
HINT

Name your functions as meaningful as possible. In this way you increase the readability of your program and make fewer mistakes. Therefore it is better to use a «drawMario» than a «function1» function.

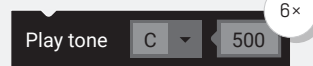
LOGIC



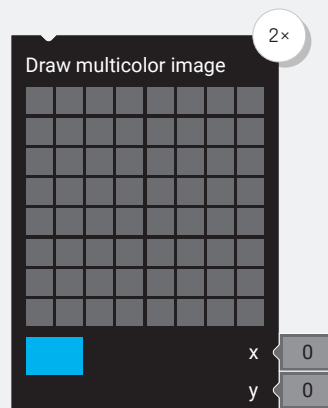
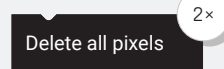
FUNCTIONS



SPEAKER



MATRIX



TIME



PARTS LIST

LIST OF BLOCKS TO BE USED



LEVEL INTERMEDIATE

SOLUTION

PROPOSED SOLUTION

Do forever

- If is button pressed? L1
then Play tone C 500
drawMario
- If is button pressed? L2
then Play tone D 500
drawMario
- If is button pressed? L3
then Play tone E 500
drawMario
- If is button pressed? R1
then Play tone F 500
drawYoshi
- If is button pressed? R2
then Play tone G 500
drawYoshi
- If is button pressed? R3
then Play tone A 500
drawYoshi

drawMario

Draw multicolor image

x 0
y 0

Wait 500 milliseconds

Delete all pixels

drawYoshi

Draw multicolor image

x 0
y 0

Wait 500 milliseconds

Delete all pixels

WORKSHEET

W020

FUNCTIONS

Learning objective:
Capacity to use functions.

WHAT TO DO

1.
First the «Do forever» loop is needed again. All blocks must be positioned in this loop.
2.
This is followed by the six «if/then» blocks for querying the buttons.
3.
In each «then» section a different sound is played and either the first or the second function is called.
4.
In each of the functions, any image must be drawn, briefly waited for and then deleted.



This is an «Expert-Block» and is only displayed if «Settings» – «Activate the Expert-Mode» is set.

Click on «Settings» in the lower left corner ...



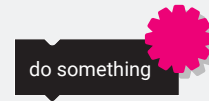
Settings

... and select «Activate the Expert-Mode».

NEW COMMANDS



Any number of blocks can be placed in a function block, which are called each time the function is called. This makes it possible to execute programs that are used over and over again with only one block. In addition, this increases the readability of a larger program enormously.



The function call block does not appear in the function category of Blockly until a function block has been added to the program.