

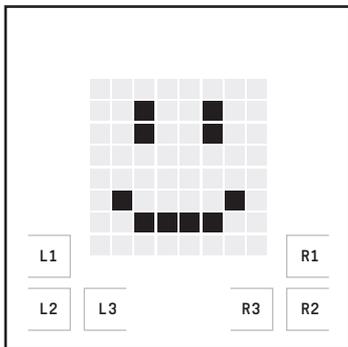
# WORKSHEET W006

## SMILEY-MACHINE

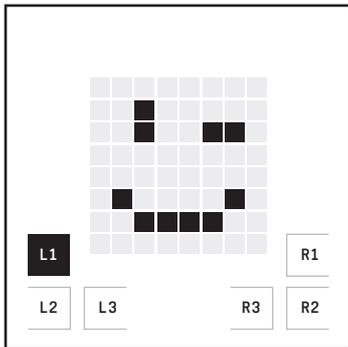
In order to be able to operate devices, we need sensors that can detect certain impulses such as pressure, movement or sounds. The Oxocard provides all this. But what should happen with such impulses is the task of the programmer. So your task.

### EXERICSE

Display another image at the push of a button.



If you don't press anything, the laughing smiley is shown.

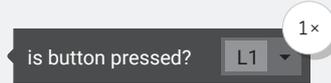
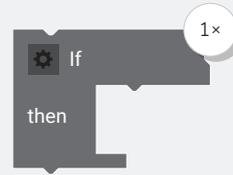
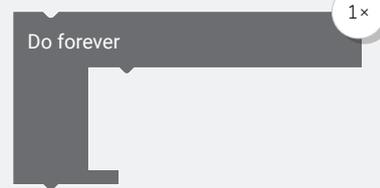


If the first left button (L1) is pressed, a winking smiley appears for a few seconds.

### HINT

Use the «if/then» block. After «If» there is a condition and in the «then» line everything that should be executed, if the condition is fulfilled.

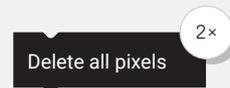
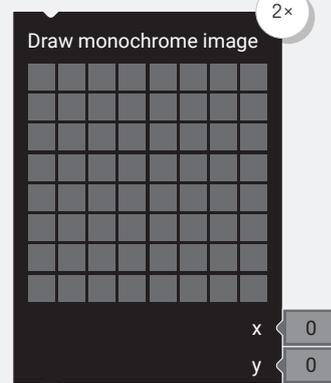
#### LOGIC



#### TIME



#### MATRIX



#### PARTS LIST

LIST OF BLOCKS TO BE USED



LEVEL EASY

### ADDITIONAL TASK:

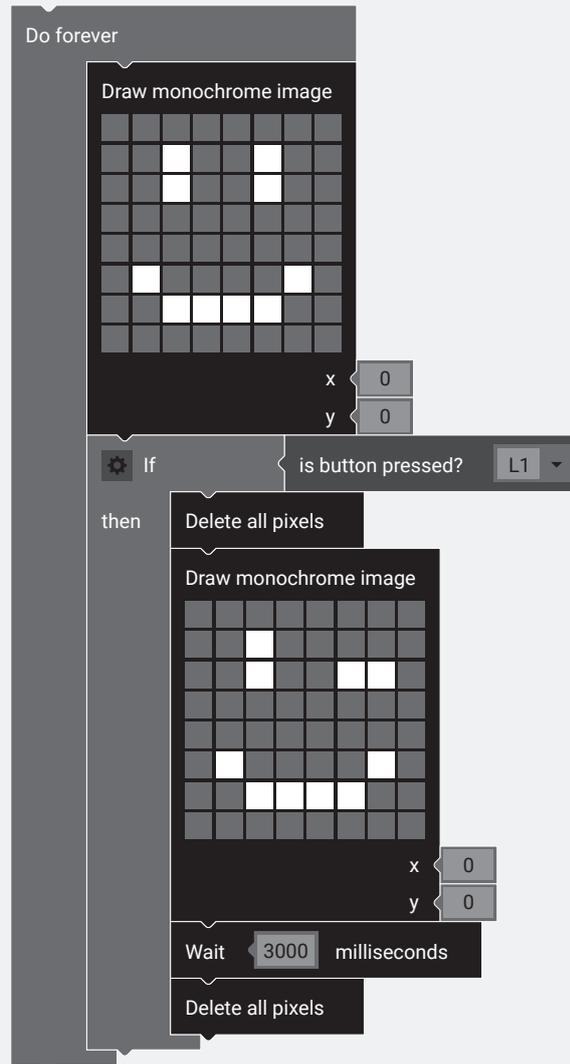
Program different smileys and pixel images for each of the six buttons.

# WORKSHEET W006

## SMILEY-MACHINE

### SOLUTION

PROPOSED SOLUTION



# WORKSHEET W006

## SMILEY-MACHINE

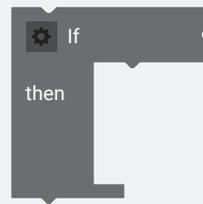
### Learning objective:

Capacity to program conditional statements.

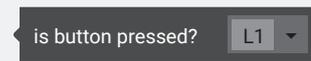
## WHAT TO DO

1. First the «Do forever» loop is needed again. All blocks must be positioned in this loop.
2. Then the image is drawn that should be displayed whenever no button is pressed.
3. The „if/then“ block is the most important block in this program. You can almost literally say to the computer: „When the first left button is pressed, delete the previous image, draw a new one, wait a few seconds and then delete it again“.

## NEW COMMANDS

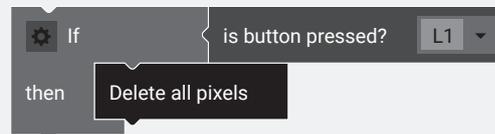


The statements in the «then» block are only executed if the condition behind «If» is fulfilled.



This condition block checks whether a button (L1, L2, L3, R1, R2, R3) is currently pressed.

## ADDITIONAL INFORMATION: CONDITION/ «if»-STATEMENT



Conditional statements are a central element of programming. The structure always follows the same principle: First a «true / false» condition is formulated and then the instructions that the computer needs to execute when this condition is fulfilled. In our example we ask for a button. Often other digital sensors or values are queried and compared (bigger/smaller/equal/unequal). If you click on the options menu at the top left of this block, you can extend the «if» block with an «else» block or with several «else if» blocks. The «else» blocks are executed if the previous condition is wrong. With these possibilities more complicated structures can be created. In our example, however, we only need the simple form with a single condition.



### Examples of simple conditions:

If the sun shines, we'll go for a swim. «The sun shines» is the condition, «we go swimming» is the action. For further options, we need several «else if», or «else» blocks. Here is an example: If the sun shines, we go swimming; If it rains, we go to the swimming pool and else we stay at home.