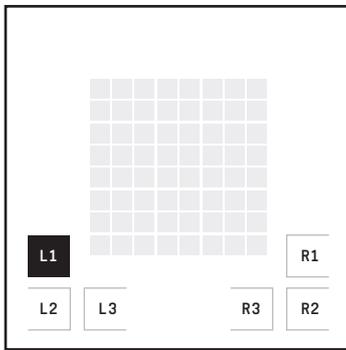# WORKSHEET W018a
COMMUNICATION I

For this worksheet you need a partner who will do the worksheet A018b in parallel. This worksheet is about sending direct messages.

EXERCISE

Connect the Oxocard to the Internet and send messages to your partner at the touch of a button to switch his display on and off.
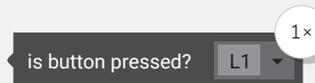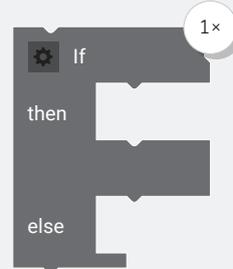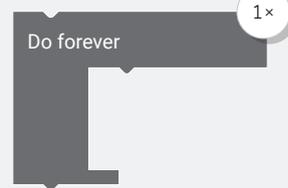
If the left button is pressed, the display of another Oxocard is switched on and off.
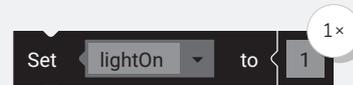
HINT

When the button is pressed, the short message «Light on!» is to be sent. If the light is already on, the short message «Light off!» should be sent. To be able to distinguish this, you have to set a variable to 0. When the light is switched on, this variable is set to 1, when it is turned off, it is reset to 0.

LOGIC

Do forever — 1×

If / then — 1×

If / then / else — 1×

lightOn = 0 — 1×

is button pressed? L1 — 1×

VARIABLES

Set lightOn to 0 — 2×

Set lightOn to 1 — 1×

TIME

Wait 1000 milliseconds — 2×

COMMUNICATION

Connect to Internet — 1×

Enable messages (sender: ?) — 1×

Send direct message « Text » to « Name » — 2×
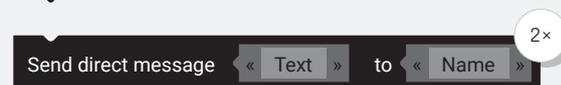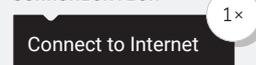
ADDITIONAL TASK:

Change the trigger to send a message from button press to motion. For example, you can use a «tilt to left» for on and a «tilt to right» for off.

SOLUTION
PROPOSED SOLUTION

```
Set  lightOn ▾  on  0

Connect with internet

Enable messages (sender: ? )

Repeat forever
    ⚙ If          is button pressed?  L1 ▾
    do   ⚙ If          lightOn ▾  = ▾  0
         do   Send direct message  « Light on! »  to  « Tim »
              Set  lightOn ▾  from  1
         else Send direct message  « Light off! »  to  « Tim »
              Set  lightOn ▾  on  0
         Wait  1000  milliseconds
    Wait  50  milliseconds
```
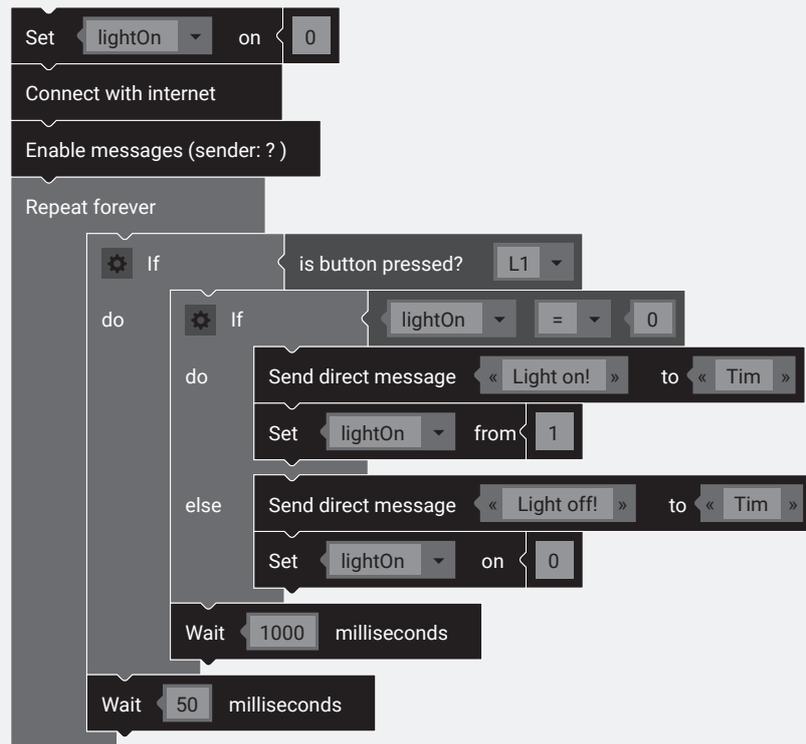
ADDITIONAL TASK
PROPOSED SOLUTION

```
Connect with internet

Enable messages (sender: ? )

Do forever
    ⚙ If          is orientation  left ▾
    then  Send direct message  « Light on! »  to  « Tim »
    else if        is orientation  right ▾
    then  Send direct message  « Light off! »  to  « Tim »
    Wait  50  milliseconds
```
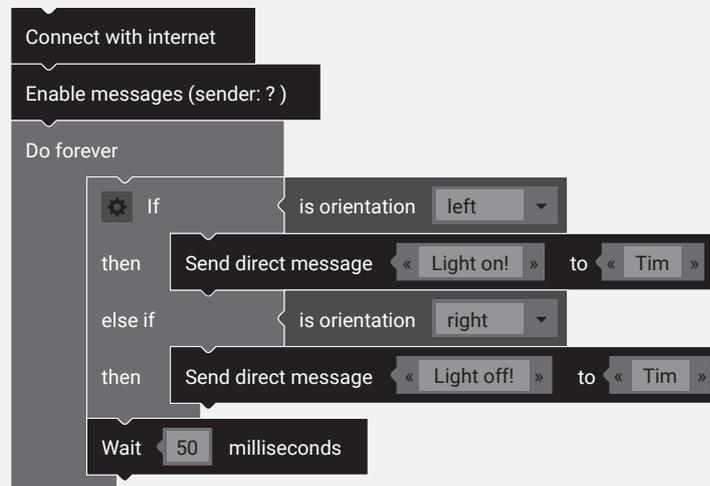
WORKSHEET W018a
COMMUNICATION I

Learning objective:
Capacity to send direct messages with your Oxocard.

WHAT TO DO

1.
First, a variable (e.g. lightOn) is set to zero.

2.
Then the Oxocard is connected to the Internet.

3.
Next, position the «Enable messages» block and give the Oxocard a unique name.

4.
Now the loop is positioned. In which an «if/then» block is set, which asks if a button is pressed. In this block again an «if/else» block is set.

5.
If the previously defined variable «lightOn» is zero, the short message «Light on!» is sent to the partner card and the variable «lightOn» is set to one.

6.
Otherwise (if the variable is no longer zero) the short message «Light off!» is sent to the partner card and the variable is set to zero.

7.
Finally, a «Wait» block must be set under the «if/else» block so that it is not switched off or on again immediately. An optional additional short «Wait» block can be placed under the «if/then» block so that the button is not queried continuously.

NEW COMMANDS

Enable messages (sender: ?)

As soon as the Oxocard is connected to the Internet, you can switch on the sending and receiving of messages with this block.

Send direct message « Text » to « Name »

With this you can send any text message to a partner card. In the first gap the text is entered, in the second the recipient of the message.

ADDITIONAL INFORMATION: BROADCAST-MESSAGES

If the expert blocks in Blockly are switched on, broadcast messages can also be sent or received. Unlike short messages, these do not require a name, as the message is sent to all Oxocards in the same network.