

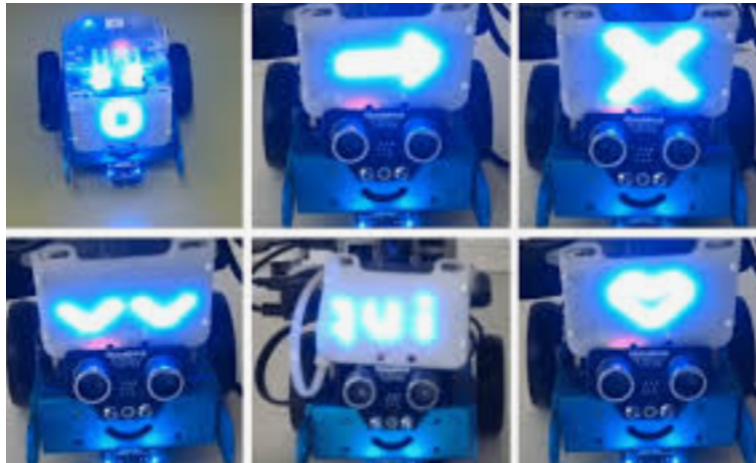


<b>Robot - Disco</b>	
<b>Solve Problem</b>	<b>Problem: Let the robot dance!</b>
<p><b>1. Understand the problem</b></p> <ul style="list-style-type: none"> <li>a) Describe the problem</li> <li>b) Abstract the problem</li> <li>c) Disassemble the problem</li> </ul> <p><b>2. Solve the problem</b></p> <ul style="list-style-type: none"> <li>a) How can (partial) problems be solved?</li> <li>b) Implementation in Scratch</li> </ul> <p><b>3. Analyze the problem</b></p> <ul style="list-style-type: none"> <li>a) Test the program</li> <li>b) Debug the program</li> <li>c) Transferred to other problems</li> </ul>	<p>The robot is supposed to follow a programmed choreography accompanied by LED outputs.</p> <p><b>Dance floor</b> </p> <div style="border: 2px solid blue; padding: 10px; width: fit-content; margin-left: auto;">  </div>

**Problem 1: Disco light!**

Program the mBot so that its LED display first shows "Hello world!" and then different colours and symbols. It should not move at all yet!

Tip: "Show" and "Looks" blocks



**1. Understand Problem**

- a) **Describe** the problem briefly, in general terms, in your own words - without thinking about the specific mBlock programme.
- b+c) Abstract and break down the problem by considering which information you need for the LED output and which blocks.

**2. Solve Problem**

- a) **Describe** how to solve the problem (e.g. required programme modules...).

**b) Implement your solution in mBlock.**

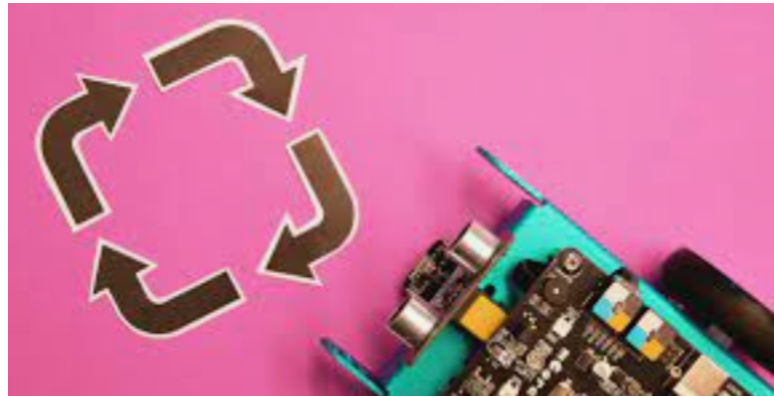
**3. Analyze problem**

**Test** your programme using the mBot and improve both the mBlock programme and your solution on the worksheet if necessary.

**Problem 2: Move!**

Program the mBot so that it moves a rectangle, stops briefly and then moves the rectangle backwards.

Tip: „Action" blocks



**1. Understand Problem**

- a) **Describe** the problem briefly, in general terms, in your own words - without thinking about the specific mBlock programme.
- b+c) Abstract and decompose the problem by considering what information you need for the journey so that the robot can move the rectangles.

**2. Solve Problem**

- a) **Beschreibe**, wie man das Problem lösen kann (z.B. benötigte Programmbausteine...).

**b) Implement your solution in mBlock.**

**3. Analyze problem**

**Test** your programme using the mBot and improve both the mBlock programme and your solution on the worksheet if necessary.

**Problem 3: Disco!**

Now programme an animation in which the robot rides a longer choreography and supports the disco animation with the LED output. The best choreography wins a small prize!

**Dance floor**



**1. Understand Problem**

- a) **Describe** the problem briefly, in general terms, in your own words - without thinking about the specific mBlock programme.
- b+c) Abstract and decompose the problem by considering what information you need during the journey so that the robot performs the most interesting choreography possible.

**2. Solve Problem**

- a) **Describe** how to solve the problem (e.g. required programme modules...).

- b) **Implement your solution in mBlock.**

**3. Analyze problem**

**Test** your programme using the mBot and improve both the mBlock programme and your solution on the worksheet if necessary.