Lesson 4 Programming (60 minutes)

S Sequence (S ARA)

Programming "Unplugged - command and sequence"
Objectives of the lesson: S - in SARA (Sequence)

Preparations

Material

1. Command cards (Sit, stand, jump, spin, wave, "Hello")
2. Paper and pencils
3. Command cards (forward, backward**,** right and left)
4. Worksheets 1 and 2 with different sequences (See appendix)

Copying
1. Copy a large number of command cards (20 each, preferably more depending on group size)

Lesson overview

5 min Introduction (Meeting place)

- Greet everyone.
- Tell us what will happen during today's lesson.

10 min Teaching

- What do commands mean? (Full class)
- A first sequence (Laid on the floor, taped to the board or with a projector)

10 min

- In groups: add your own sequence with several command cards and test

5 minutes
New commands:forward, back, right, left

- Assignment: the teacher must be guided from one place to another in the classroom.

5 minutes

- The teacher hands out a worksheet with a few different sequences and the students test (2-2)

20 min
How do we move on the chessboard? Teacher-led
Give commands to the tower on the chessboard

5 min Rounding (Meeting place)
Repeat the term Sequence

- ▪ Everyone does the sequence together:

stand - jump - spin - "Hello" - jump - "thank you for today"- spin - sit
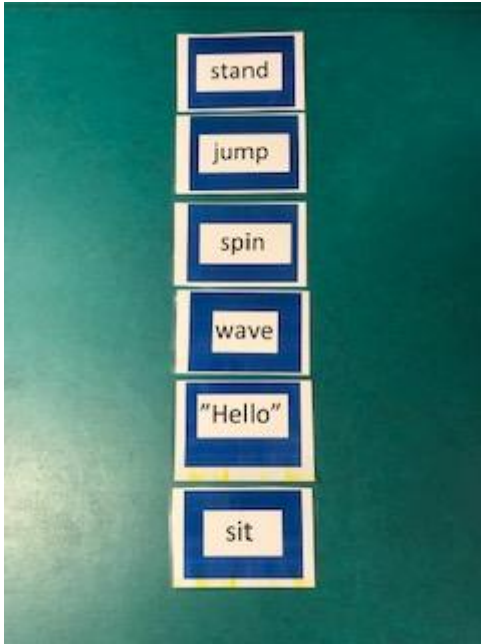
- ● Hi then until next week.

Teaching
1) Teacher-led:
Start with specific commands - what do commands mean? Agree in class.

A first program: the teacher lays out: (Laid on the floor, taped on the board, wall or projector)

The program is read from top to bottom. The teacher points to commands and the students perform the movements.

2. Group work

In groups (4-5 students per group): Add your own sequence with several command cards and test. Distribute command cards to each group. Alternatively post-it notes where students write commands.

Together, the students agree on a variant, for example:
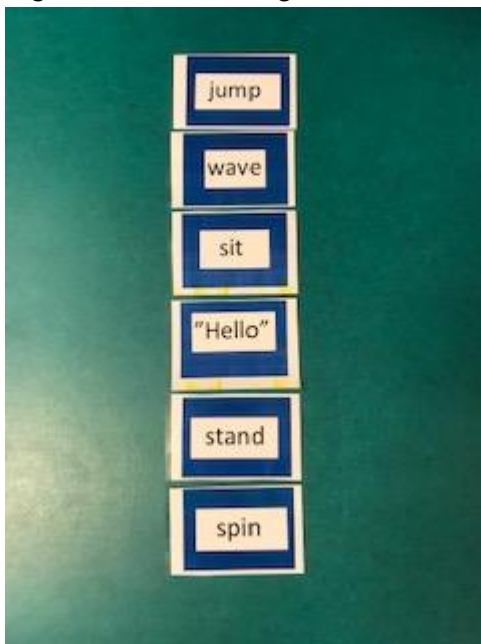
And the program is tested together in the group.

3. Teacher-led
New commands

forward, backward, right and left commands are explained.
forward = one step forward
backward= one step back
right = rotate a quarter turn (90 degrees) to the right
left = rotate a quarter turn (90 degrees) to the left
Assignment: the teacher must be guided from one place to another in the classroom. For example, from the chair to the classroom door.
The students control orally with commands (forward, backward, right, left) and the teacher performs step by step.

Then a sequence is placed (or written on the board / projector) and tested by a student in the classroom.
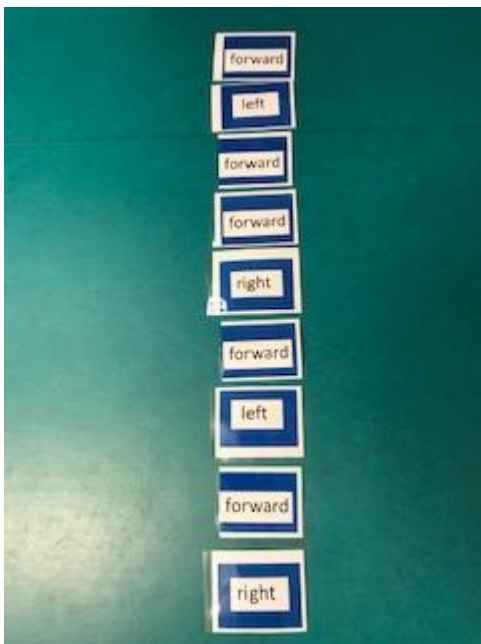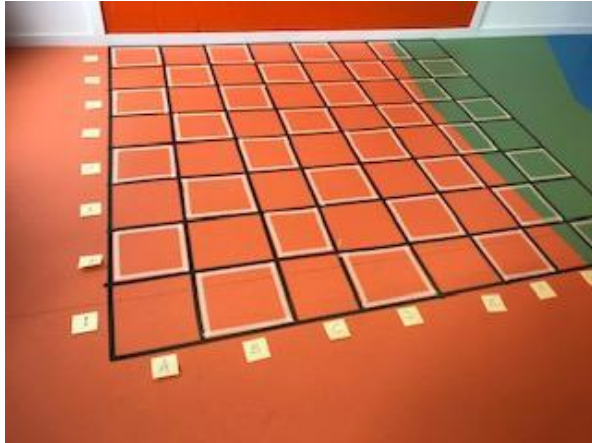
Group (2-2)
The teacher hands out worksheet 1 with a few different sequences and with a path to be followed and the sequence written down. (see appendix) students test (2-2)

How do we move on the chessboard? (Teacher-led)
Material: Chessboard with coordinates, chess piece tower
(Large chessboard in the floor, or regular chessboard or hard copy on a chessboard)

Short repetition of the coordinates on the chessboard. (See previous lesson)
Short repetition of the movement of the tower

forward = the piece moves a box forward
backward= the piece moves a box back
right = the piece rotates a quarter turn (90 degrees) to the right
left = the piece rotates a quarter turn (90 degrees) to the left

Task 1: Write a sequence that moves the tower from A 1 to F 4
(a possible solution: right, forward, forward, forward, forward, forward, left, forward, forward, forward)
Assignment 2a: the teacher pulls the tower from B3 to E 8 in any way he can. The students writes down the sequence, was it correct?
Assignment 2b: a student pulls the tower from B7 to G 3 in any way. The students writes down the sequence, was it correct?

Assignment 3: on which square does the tower end up?
Start box B4:

forward, forward, right, forward, forward, left, forward, forward
(D8)
Teamwork:
Worksheet 2 with similar assignments as above, students work 2-2

Extras: Bluebots, robot mouse or similar robots on the chessboard.

All parts where commands forward, back, right, left are used can be done with Bluebots and robot mouse.

NOTE: the size of the chessboard must be adapted to Bluebot's movement (forward = one square)

(* in the pictures one square are two times forward)

Rounding
When there are five minutes left in the lesson, tell the children to pack up and put everything in respective box. You gather at the gathering place and the teacher summarises what the children have learned during the lesson.
In conclusion, all the sequence together:
stand - jump - spin - "Hello" - jump - "thank you for today" - spin - sit