ALGORITHM EXAM #2
1h

SCORE	/ 100
COMMENT	

Exercise 1 (15 POINTS)

Complete the table. Use a new line every time my_number changes

```
        SET <my_number> to < 0 >


    ┌── WHILE ── my_number ≠ 7 ──────────────────┐
    │                                            │
    │   ┌── IF ── my_number < 2 ──────────────┐  │
    │   │  Jack eats banana                   │  │
    │   │  INCREMENT my_number OF <2>         │  │
    │   ├── ELSE ─────────────────────────────┤  │
    │   │  Jack eats carrot                   │  │
    │   │  SET my_number TO < my_number - 1 > │  │
    │   └─────────────────────────────────────┘  │
    │                                            │
    │   ┌── IF – my_number = 2 or my_number = 4 ─┐│
    │   │  Jack eats apple                       ││
    │   │  INCREMENT my_number OF <3>            ││
    │   └────────────────────────────────────────┘│
    └────────────────────────────────────────────┘
```
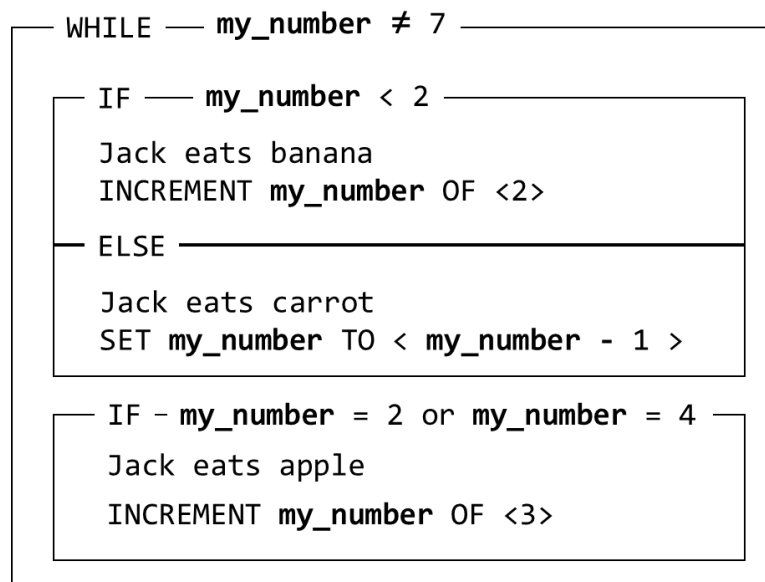
my_number	What Jack eats?
0	Eat banana
2	Eat apple
5	Eat carrot
4	Eat apple

Exercise 2 (15 POINTS)

Draw the path of Jack (with arrows ⟶ ↓)

```
SET <my_variable> to < 0 >

WHILE ── my_variable < 3

    REPEAT <my_variable> times
    Go down

    REPEAT <my_variable + 1> times
    Go left
    Go up

    INCREMENT <my_variable> OF  <1>
```
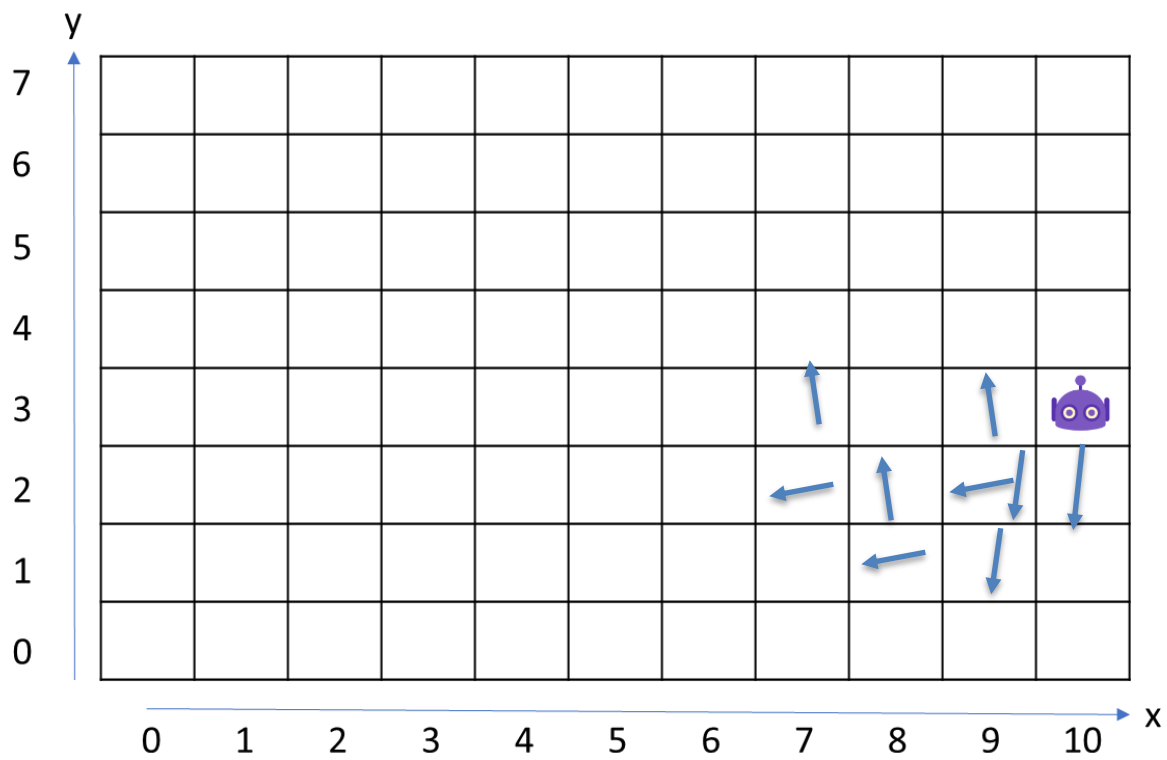
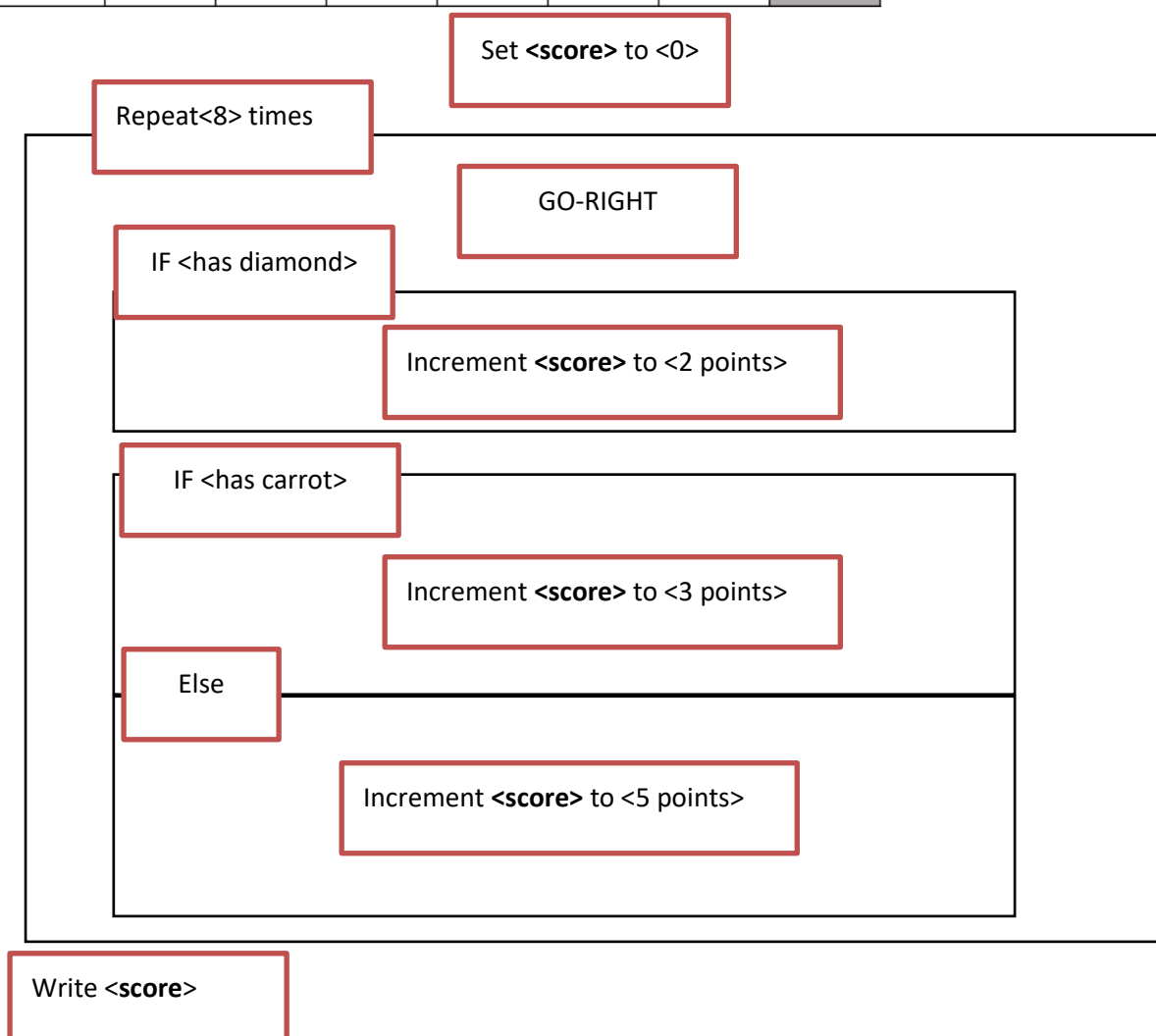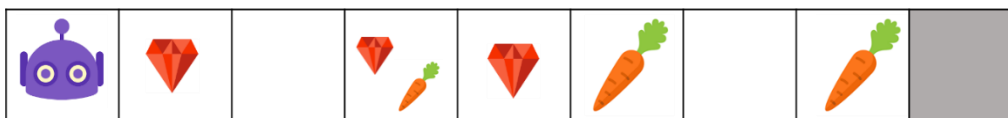# Exercise 3 (25 POINTS)

Objective	- Count the score: If has cell diamond: +2 points If has cell carrot: +3 points - Write the score on the last cell **Warning: your code must work for the 2 cases!!!!**
Maximum number of instructions	10
Allowed instructions	GO-RIGHT IF <CONDITION> SET **<score>** TO < > IF <CONDITION> ELSE INCREMENT **<score>** OF < > REPEAT < > TIMES WRITE **<score>** **<score>**
Allowed conditions	<HAS CARROT> <HAS DIAMOND>

CASE 1

CASE 2

Set **<score>** to <0>

Repeat<8> times

GO-RIGHT

IF <has diamond>

Increment **<score>** to <2 points>

IF <has carrot>

Increment **<score>** to <3 points>
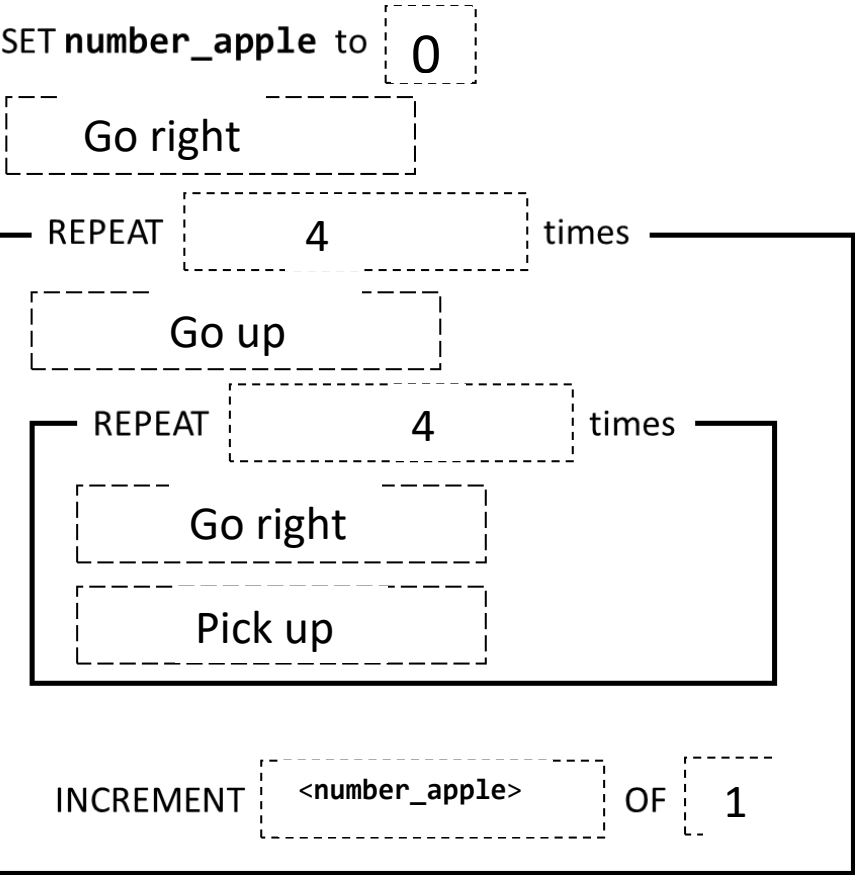
Else

Increment **<score>** to <5 points>
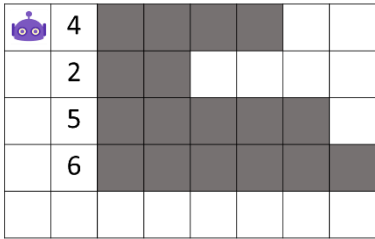
Write **<score>**

Exercise 4 (20 POINTS)

Objective	• Pick up all apples
Allowed instructions	GO-RIGHT GO-UP PICK-UP IF <CONDITION> SET <**number_apple**> TO < > IF <CONDITION> ELSE INCREMENT <**number_apple**> OF < > REPEAT < > TIMES WRITE < **number_apple** > < **number_apple** > WHILE <CONDITION>
Allowed conditions	***NO CONDITION ALLOWED***

SET **number_apple** to [0]

[Go right]

REPEAT [4] times

    [Go up]

    REPEAT [4] times

        [Go right]

        [Pick up]

    INCREMENT [<number_apple>] OF [1]

Exercise 5 (25 POINTS)

Objective	- For each lines: there is a number N. Paint N cells on the right side this number - But if cell has a cross, do not pain the cell *For instance , for case 1 , the result will be :* **Warning: your code shall work for the 2 cases!!!!**
Max number of instructions	10
Allowed instructions	GO-RIGHT GO LEFT REPEAT < > TIMES GO DOWN GO UP PAINT Variables: SET <**number_of_paint**> TO < > <**number_of_paint**> <VALUE ON CELL>
Allowed conditions	***NO CONDITION ALLOWED***

CASE 1

4					
2					
5					
6					

CASE 2

3						
1						
8						
4						

Go right

Repeat <4> times

Set <**number-of paint**> TO <VALUE ON CELL>

Repeat <**number-of-paint**> times

Go right

Paint cell

Repeat <**number-of-paint**> times

Go left

Go down