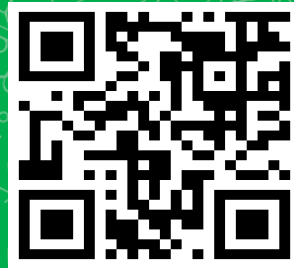


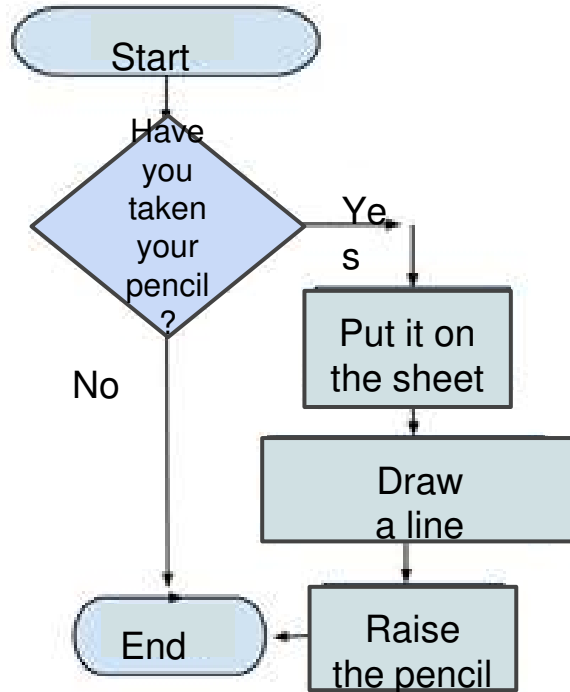
D·BIC

Code Their Dreams

Unit 2: Our First Game



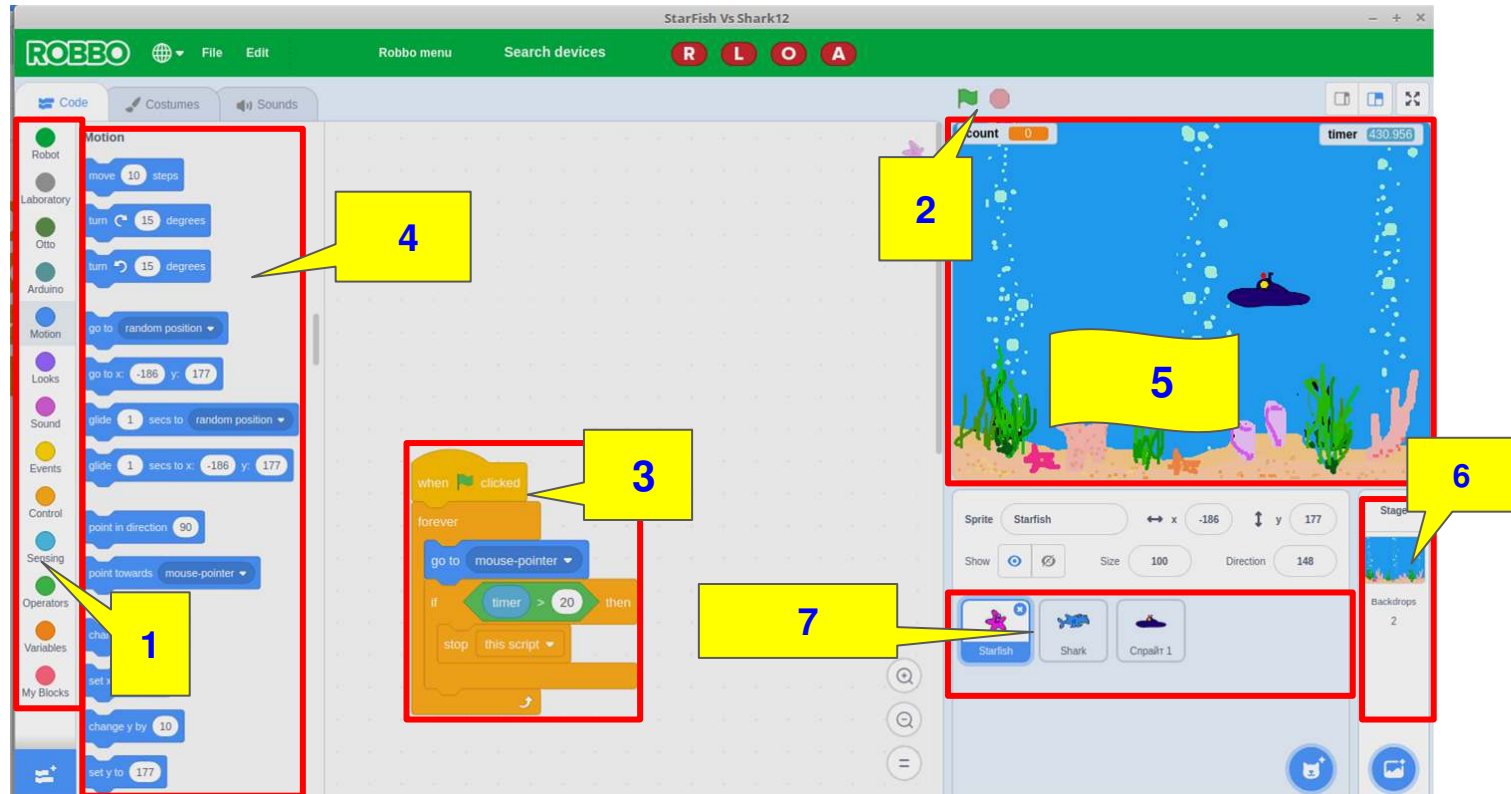
Algorithm and Program (Code)



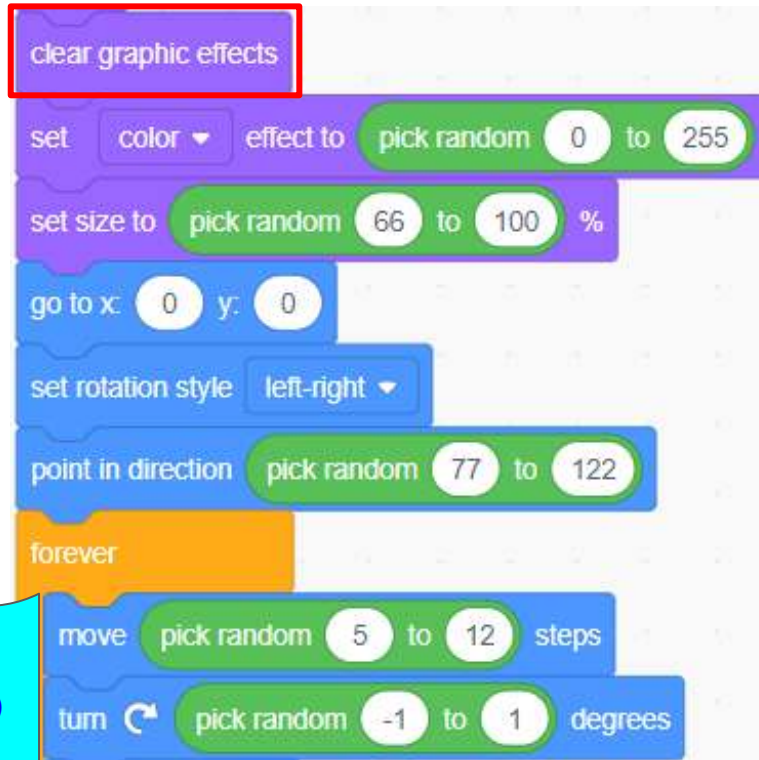
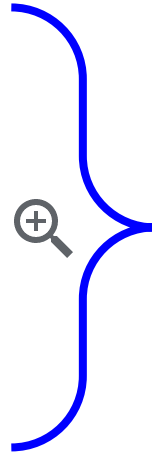
```
char incomingByte;
int LED = 13;
void setup() {
  Serial.begin(9600);
  pinMode(LED, OUTPUT);
}
void loop() {
  if (Serial.available() > 0) {
    incomingByte = Serial.read(); /
    if(incomingByte == '0')
      digitalWrite(LED, LOW);
    if(incomingByte == '1')
      digitalWrite(LED, HIGH);
  }
}
```



Scratch Interface (RobboScratch3)



The game has become more spectacular



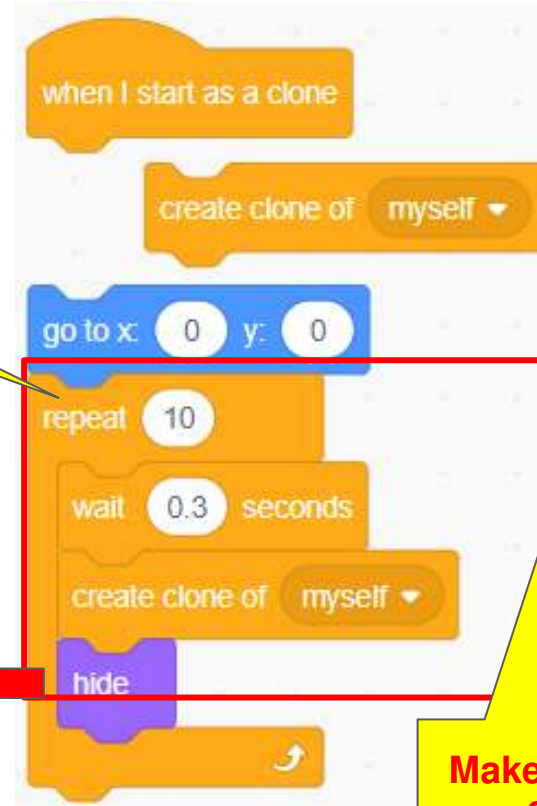
Delete all the Sharks, except
the 1st and duplicate again :-)



Cloning Sprites



New starting conditions



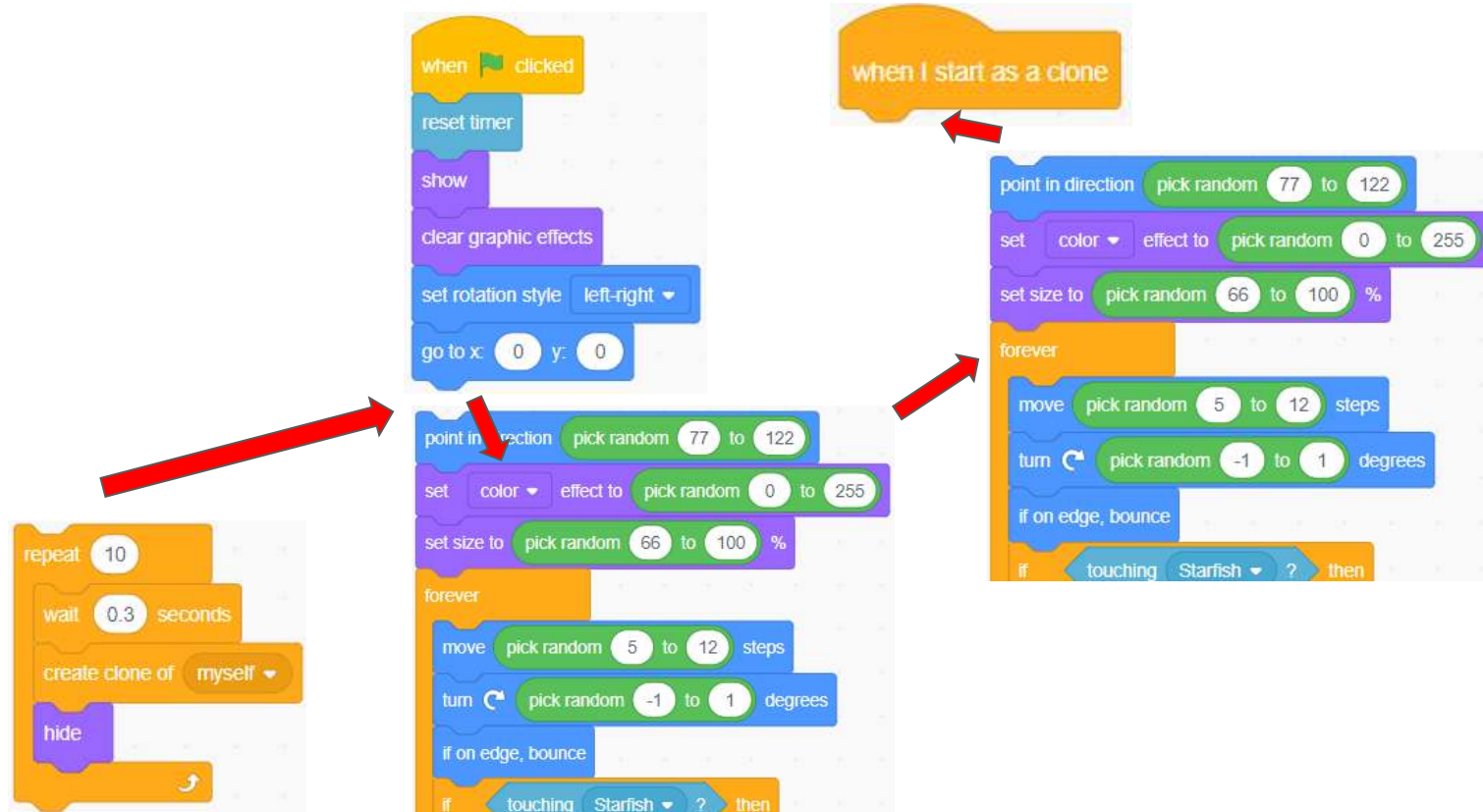
Makes 10 sharks in 3 seconds



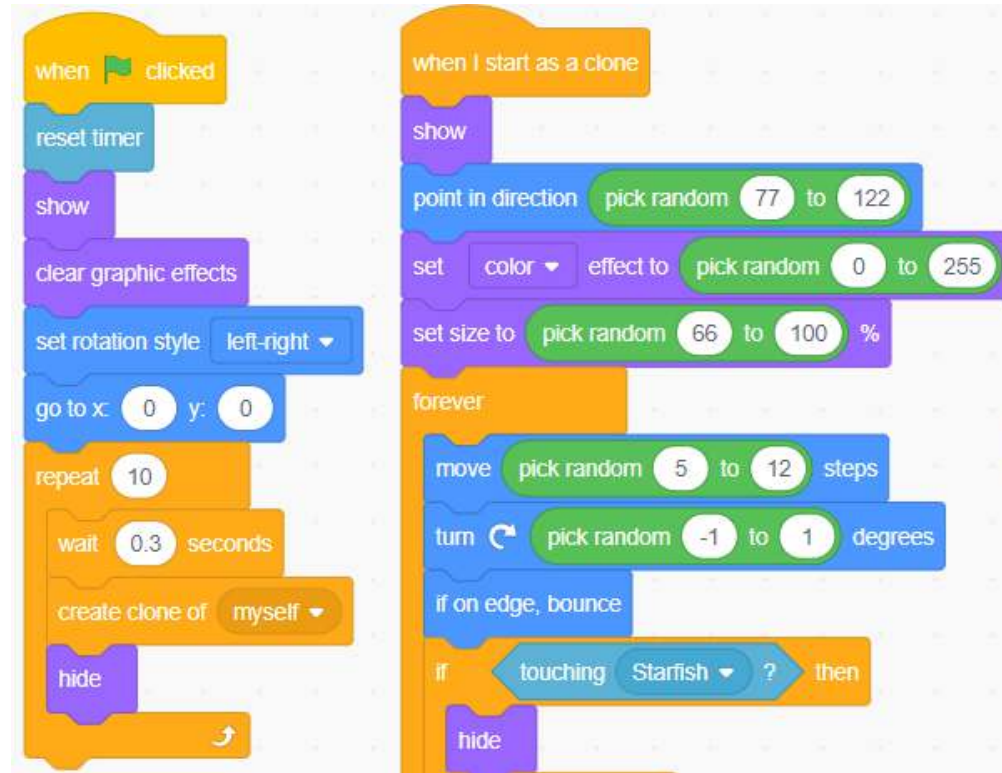
Hide-Show



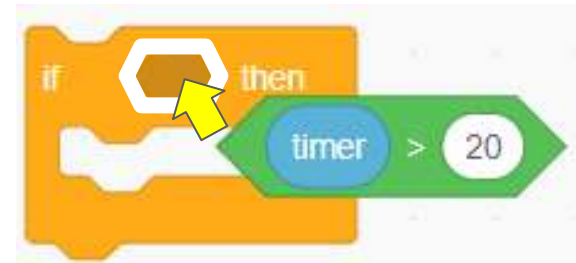
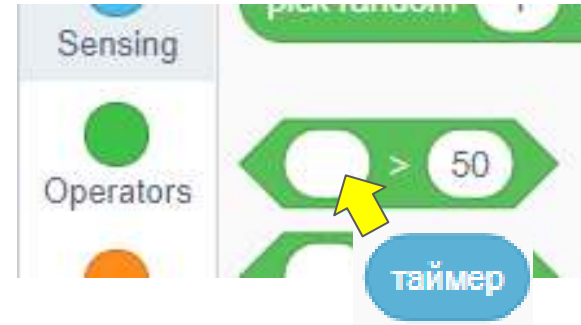
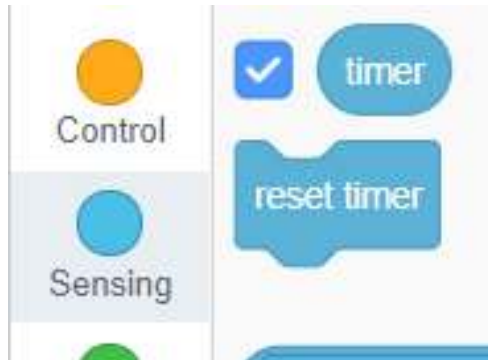
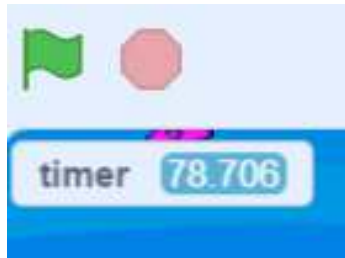
Castling



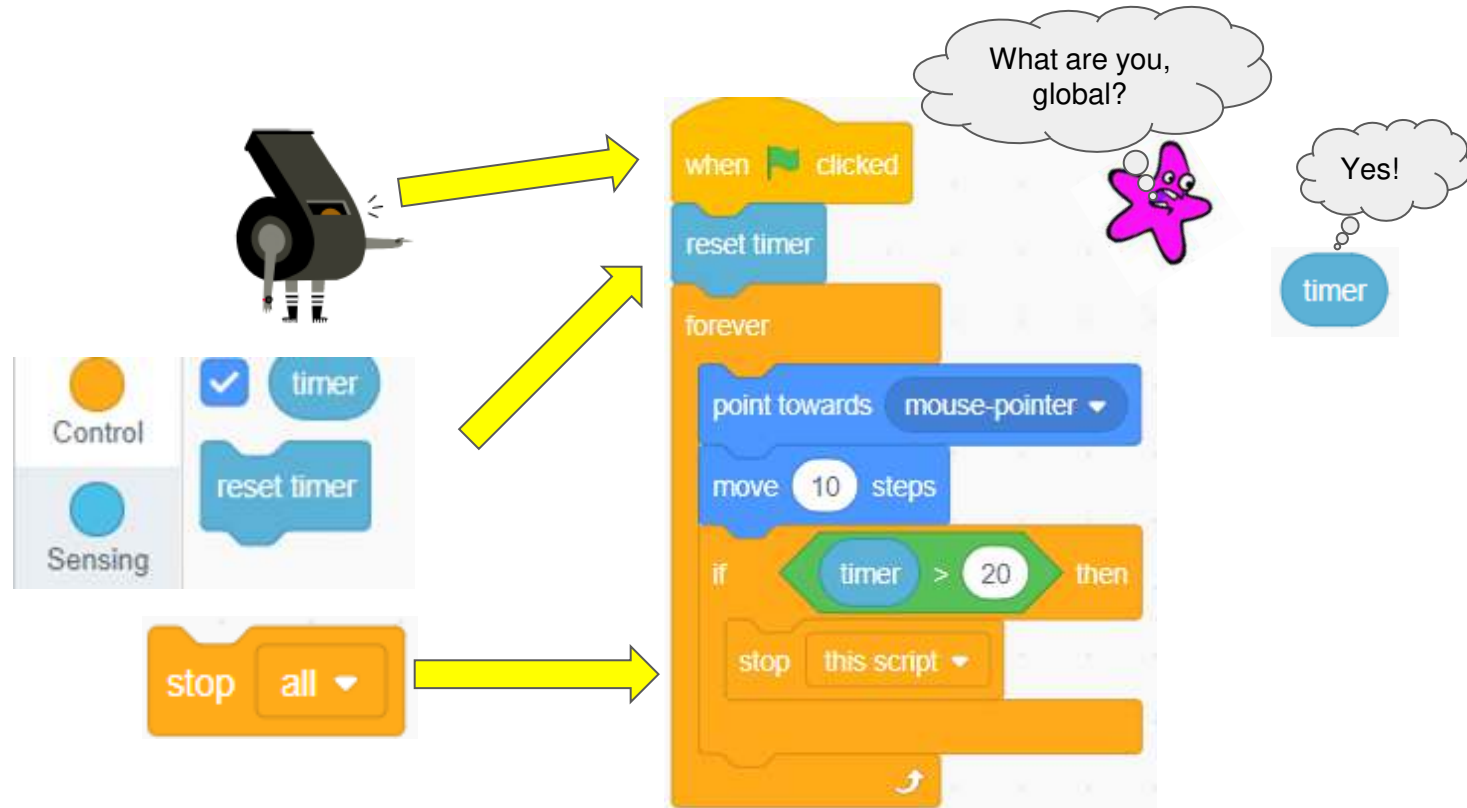
1 sprite has replaced 10



Sensors. Timer



Starfish script in the 20 second game



Variables



Working with a Variable

The image shows the Scratch 'Variables' panel on the left and the 'New Variable' dialog on the right. In the 'Variables' panel, the 'Make a Variable' button is highlighted with a hand icon and the text 'Click!'. Below it, the 'points' variable is listed with a checked box. The 'set points to 0' block is visible. The 'change points by 1' block is highlighted with a red rectangle. The 'show variable points' and 'hide variable points' blocks are also visible. In the 'New Variable' dialog, the 'New variable name:' field contains 'Points'. The 'For all sprites' radio button is selected and highlighted with a red rectangle, with a yellow arrow pointing from the 'Make a Variable' button to it. The 'For this sprite only' radio button is unselected. The 'Global' label is shown in an orange box below the 'For all sprites' option. The 'Cancel' and 'OK' buttons are at the bottom right of the dialog.

Variables

Make a Variable

points

set points to 0

change points by 1

show variable points

hide variable points

New Variable

New variable name:

Points

☒ For all sprites ☐ For this sprite only

Global

Cancel OK



Back and Forth

Make 2 variables

The Variables palette is shown with the 'Make a Variable' button at the top. Below it, two variables are listed: 'here' and 'there', both with checkboxes that are checked. At the bottom of the palette, there are buttons for 'set', 'change', 'show variable', and 'hide variable' for the selected variable.

Write a script

The script starts with a 'when this sprite clicked' block. It then has a 'repeat' block with a count of 5. Inside this loop, there are two 'repeat' blocks, each with a count of 30. The first 'repeat' block contains a 'move 10 steps' block. The second 'repeat' block contains a 'move -10 steps' block. The two 'repeat' blocks are highlighted with red boxes.

Add variables to the script

Two 'set' blocks are shown. The first block sets the variable 'there' to 0. The second block sets the variable 'here' to 0.

300 steps forth

A 'change' block is shown, which changes the variable 'here' by 1.

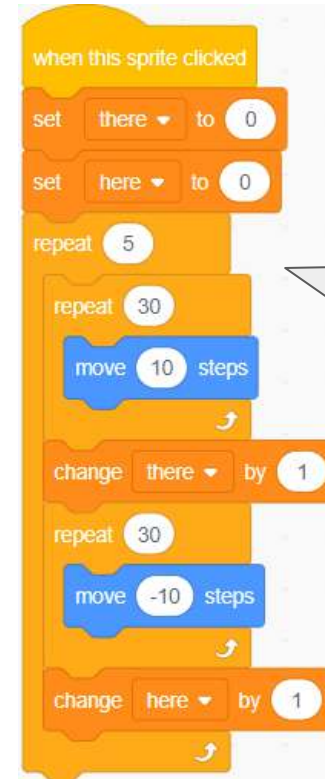
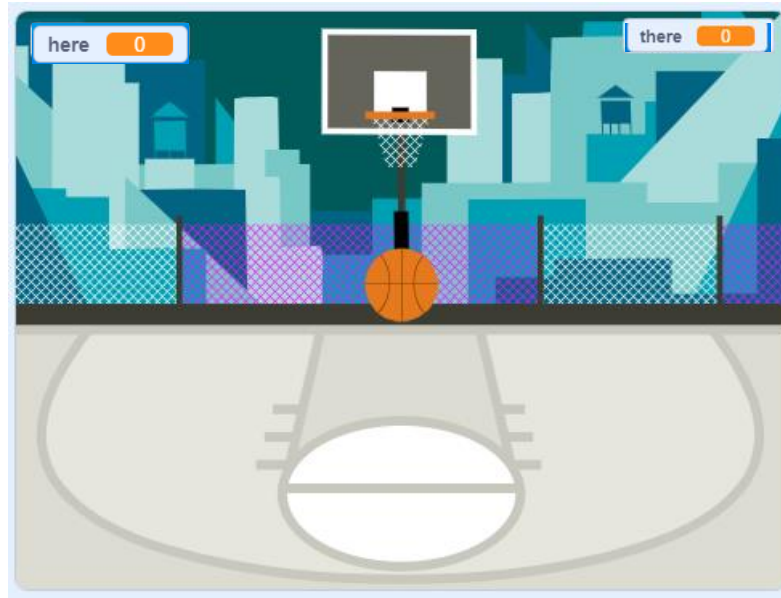
300 steps back

A 'change' block is shown, which changes the variable 'there' by 1.



Back and Forth 2

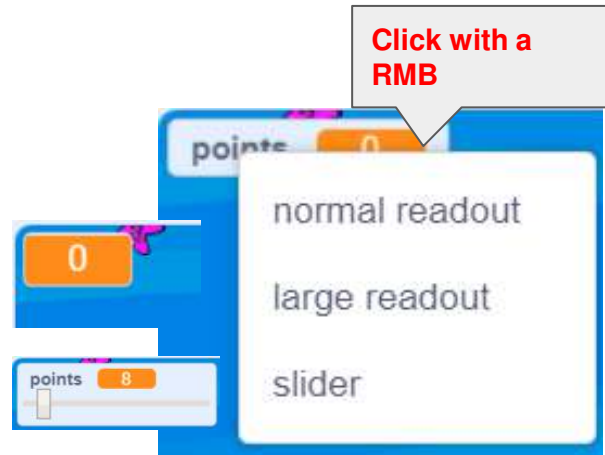
Background and tables of variables



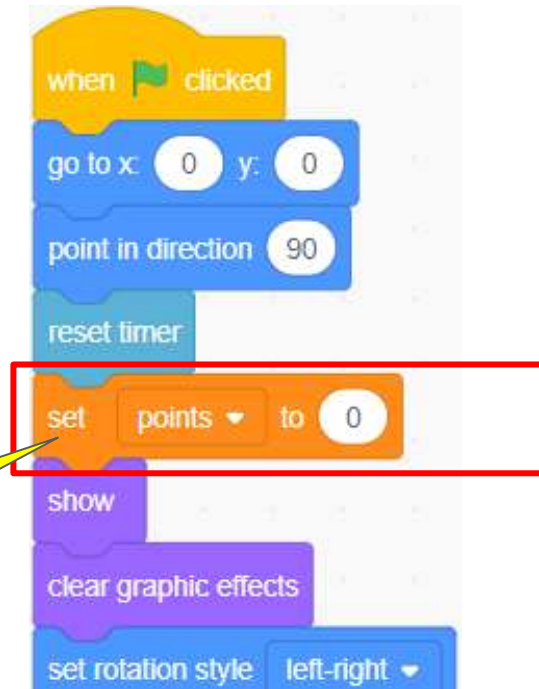
How the full script looks



Working with a Variable 2



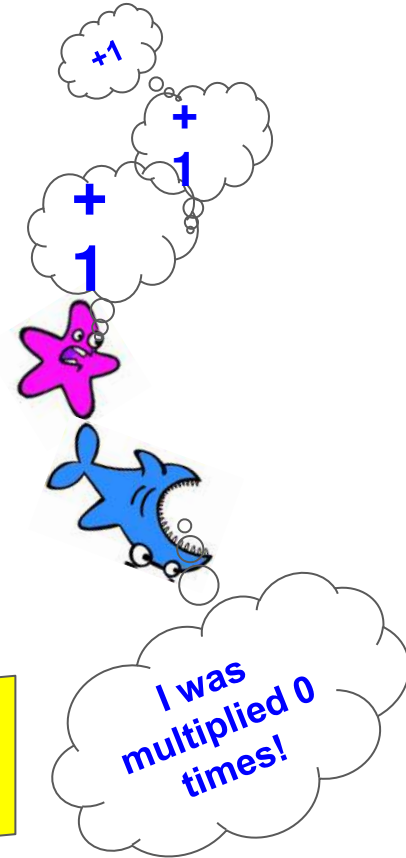
Initialization of the Variable



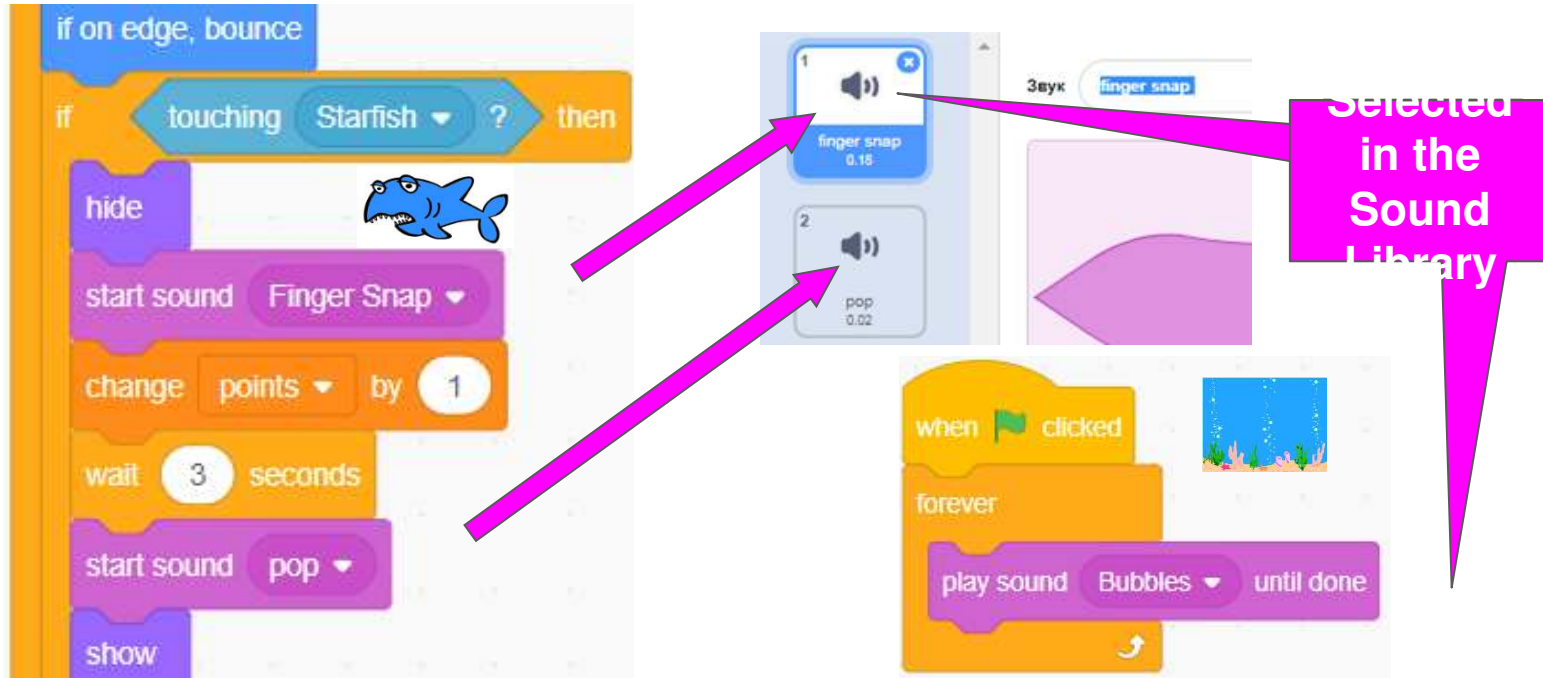
Working with a Variable 3



At each touch of the Shark and the Starfish the Point variable increases by 1



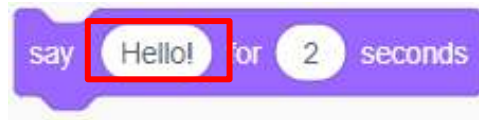
Sounds and Their Commands



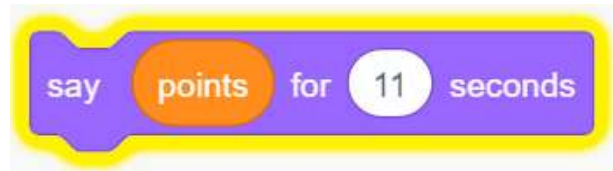
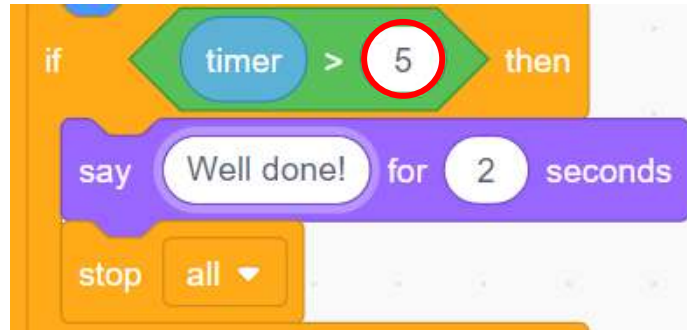
The image displays Scratch code blocks and the sound library interface. On the left, a code block titled "if on edge, bounce" contains an "if touching Starfish ? then" block. Inside the "then" block, the sequence of actions is: "hide" (with a starfish icon), "start sound Finger Snap", "change points by 1", "wait 3 seconds", "start sound pop", and "show". Two pink arrows point from the "start sound" blocks in the code to the sound library. The library shows two selected sounds: "finger snap" (0.15) and "pop" (0.02). A pink callout box with the text "Selected in the Sound Library" points to the "finger snap" sound. Below the library, another code block is shown: "when clicked" followed by a "forever" loop containing "play sound Bubbles until done".



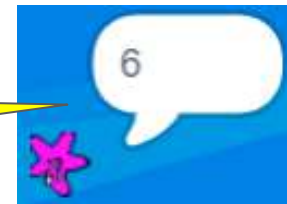
Announcement of Results



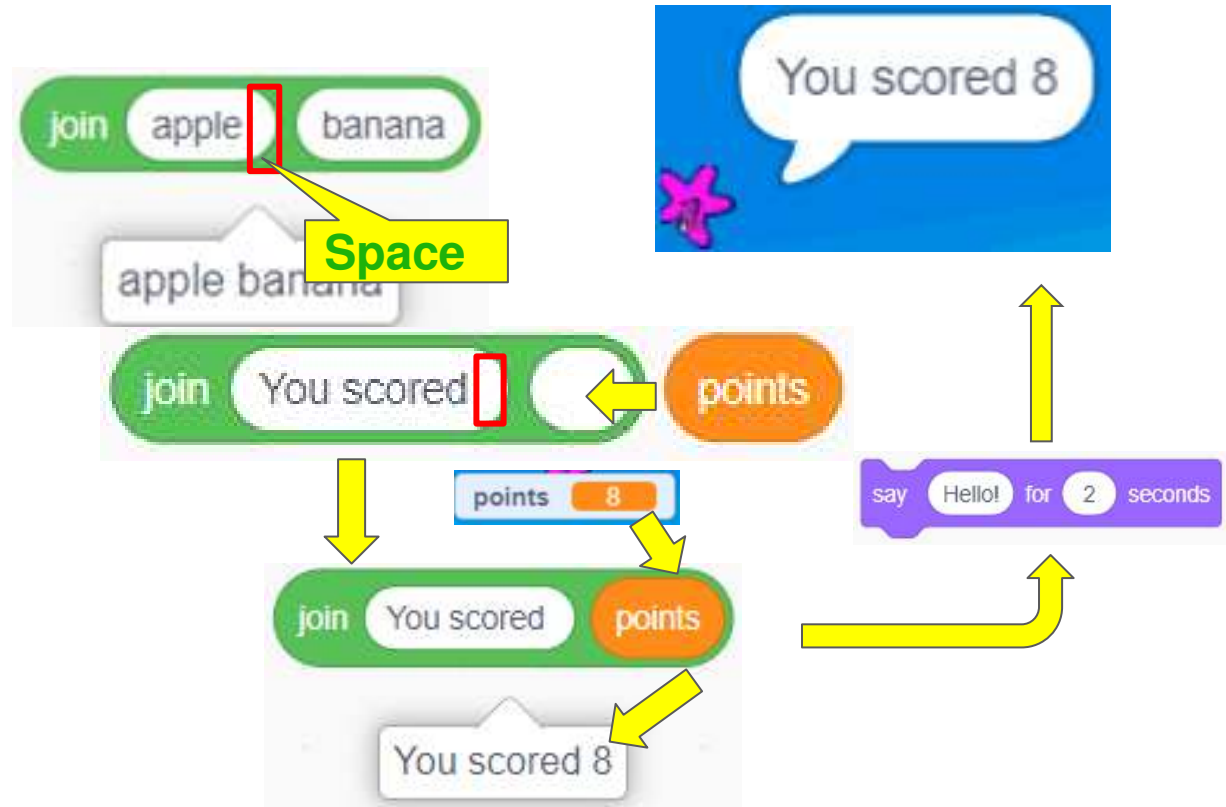
How good?



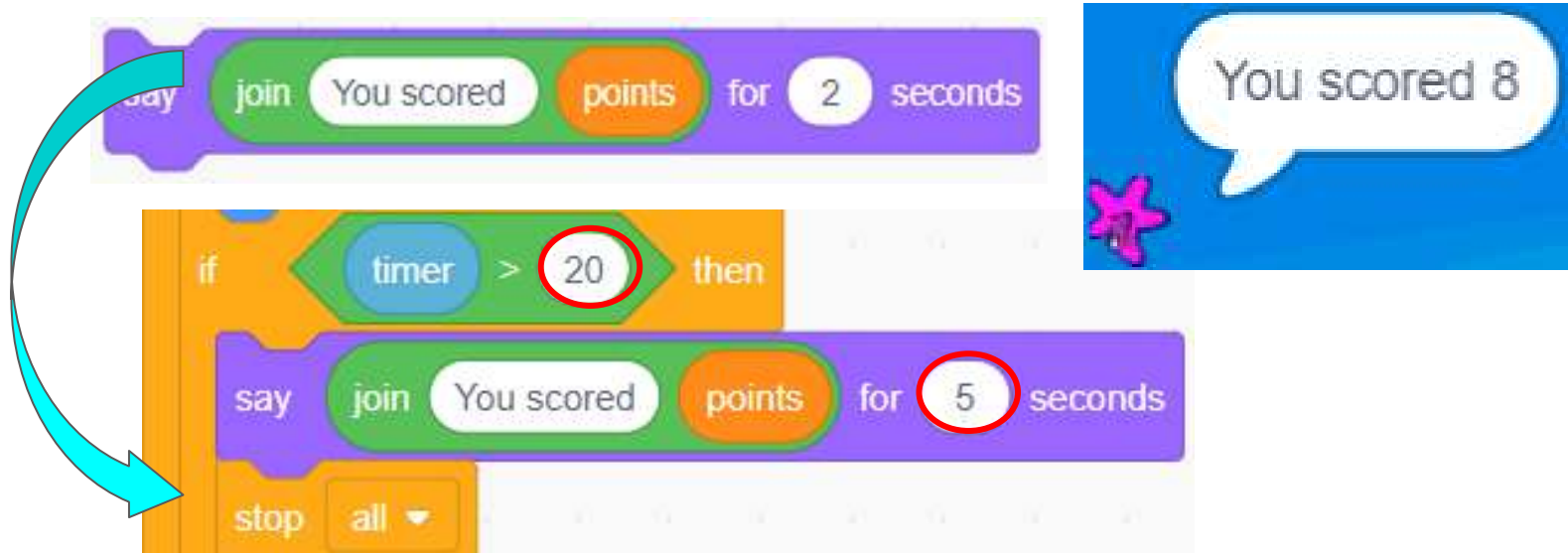
What is 6?



String operator



Announcement of Results 2

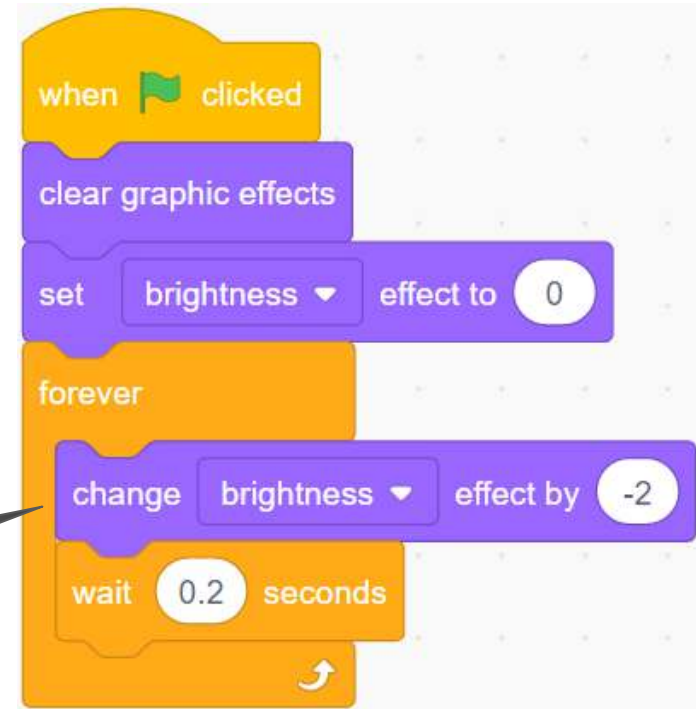


Clean-up of the Game

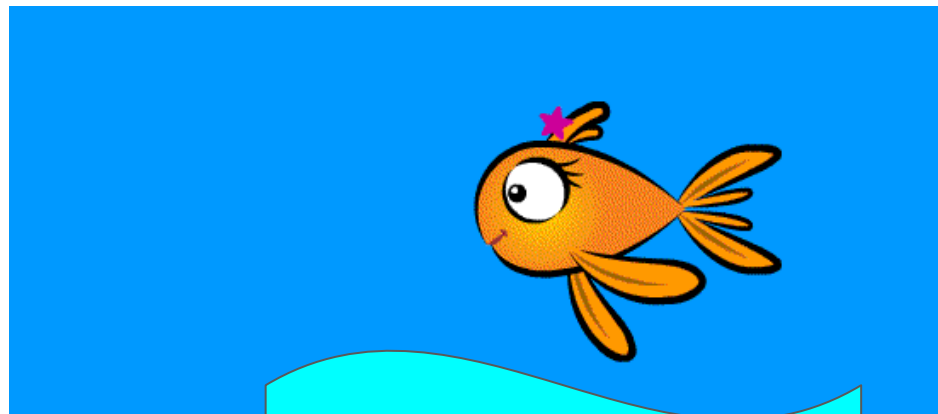
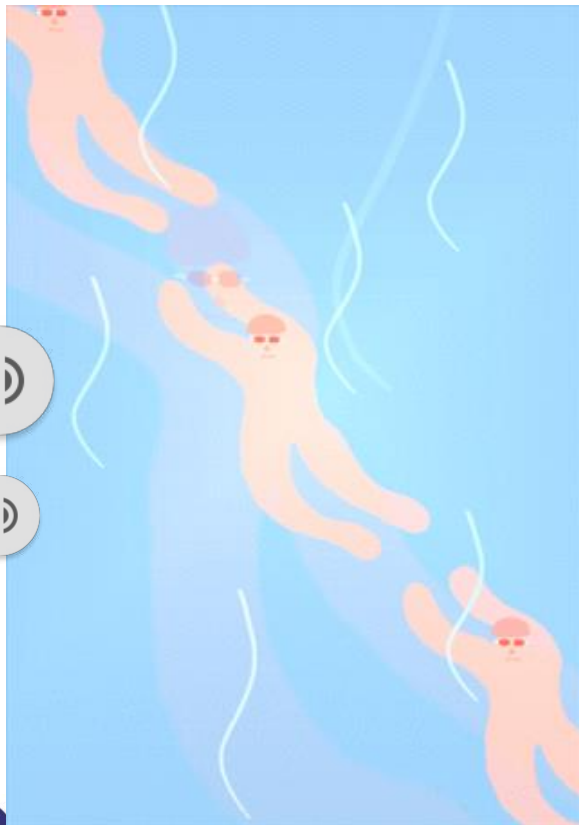
Will stop its sprite only



It darkens gradually



Physical Activity Breaks



**There is a great strength
in water**

