

# PENCIL code

## PencilCode

Ввод/Вывод информации

Урок 2



# Вывод текста в PencilCode

The screenshot displays the PencilCode web editor interface. At the top, the user's name 'roman789' and the project name 'Hello' are visible. A navigation bar includes buttons for 'Save', 'Share', 'New', 'Log out', '?', 'Guide', and a menu icon. On the left, a 'Blocks' palette is open, showing various categories: Move, Control, Art, Text, Sound, Sprites, Operators, and Snippets. The 'Text' category is highlighted with a red underline. A 'write' block with the text 'Привет!' is being dragged from the palette into the code editor. A red arrow points from the block in the palette to the block in the code editor. The code editor shows a single line of code: `1 write 'Привет!'`. To the right of the code editor is an 'output' window, which displays the result of the code execution: 'Привет!'. A red arrow also points from the code editor to the output window. The interface is decorated with various icons and a blue background at the bottom right.

# Вывод текста в PencilCode

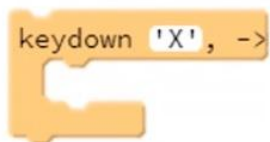
The screenshot displays the PencilCode development environment. On the left, the 'Blocks' palette is open, showing various categories like Move, Control, Art, Operators, Text, Sprites, Sound, and Snippets. A red arrow points from the 'label' block in the 'Text' category to the 'output' panel on the right. The 'output' panel shows the text 'Codologia' displayed on a grid. Below the grid, there is a text input field containing 'test panel (type help for help)'. A blue circular refresh icon is visible on the left side of the output panel.

# Команда вывода информации со ЗВУКОМ



The screenshot shows the Scratch programming environment. On the left, the 'Blocks' palette is open, with the 'Sound' category selected. A 'tone' block is being dragged from the palette to the script area. The script area contains a single 'tone' block with the code: `tone 'f', 0`. A red arrow points from the 'tone' block in the palette to the 'tone' block in the script area. Another red arrow points from the 'tone' block in the script area to a play button on the stage. The stage area is empty, with a 'test panel (type help for help)' at the bottom.

# Событие нажатия кнопки

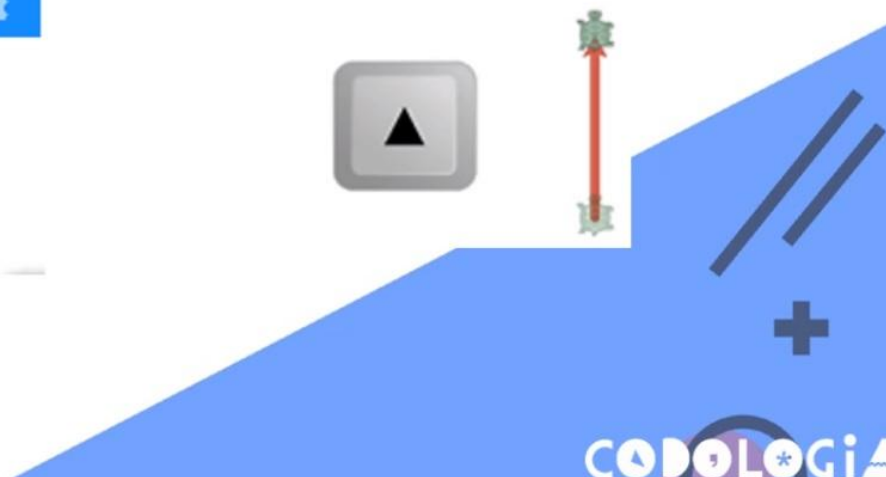


```
1 keydown 'X', ->  
2   tone 'B', 3
```

## Событие нажатия кнопки

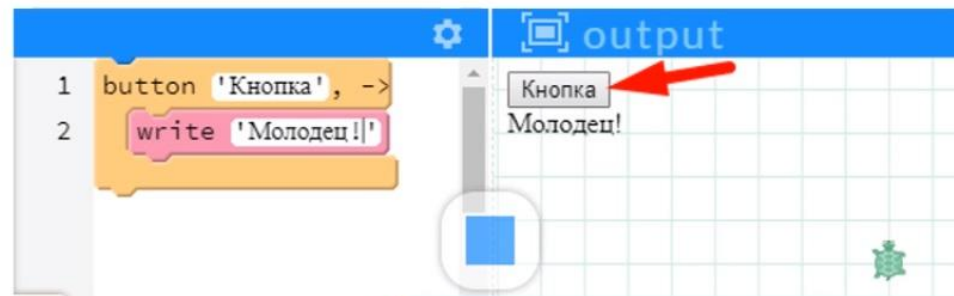
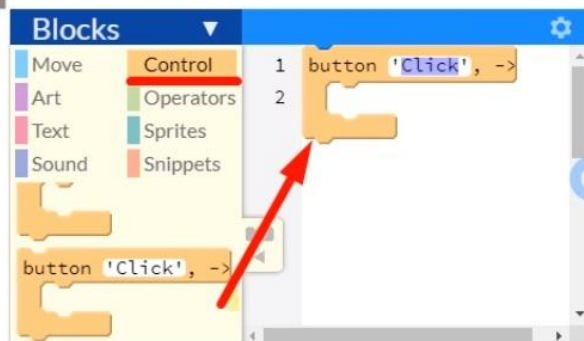
Напишем команду движения черепахи вперед при нажатии клавиши “вверх”.

```
1 keydown up, ->  
2 fd 100
```



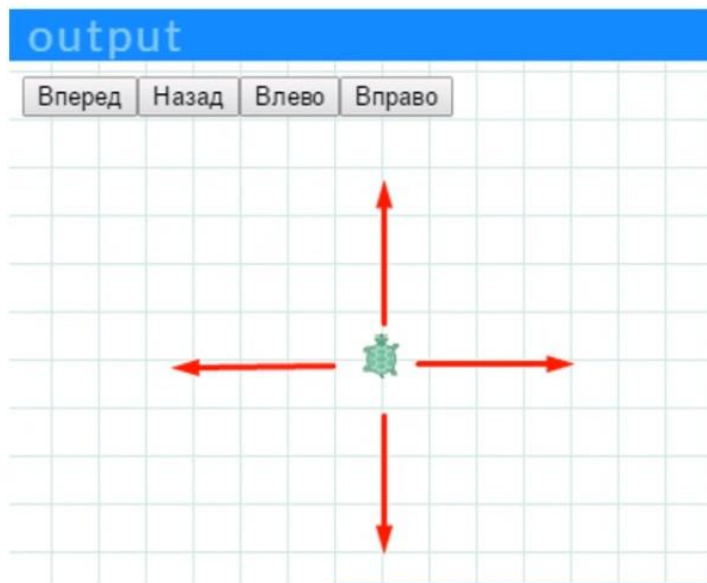
# Добавление кнопки на экран

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# Задание 1

Напишите программу для движения черепашки по нажатию кнопок.



The screenshot shows a Scratch 'output' window with a blue header labeled 'output'. Below the header are four buttons: 'Вперед', 'Назад', 'Влево', and 'Вправо'. The main area is a light blue grid with a small green turtle icon in the center. Four red arrows point outwards from the turtle, indicating movement directions: up, down, left, and right.



## Решение

```
1 button 'Вперед', ->  
2   fd 100  
3 button 'Назад', ->  
4   bk 100  
5 button 'Влево', ->  
6   lt 90  
7 button 'Вправо', ->  
8   rt 90
```

# Команды вывода информации

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The image shows a Scratch code editor interface. On the left, the 'Blocks' palette is open, showing categories like Move, Art, Text, Sound, Control, Operators, Sprites, and Snippets. A red arrow points from the 'Operators' category to a green 'x = 0' block. Another red arrow points from the 'Operators' category to a pink 'write x' block. The main workspace shows a script starting with a '1' block, followed by the 'x = 'Интересно'' block and the 'write x' block. A red arrow points from the 'write x' block to the 'output' window on the right, which displays the text 'Интересно'.

## Ввод текста в PencilCode

The screenshot displays the PencilCode environment. On the left, a 'Blocks' sidebar lists categories: Move, Art, Text (highlighted in red), and Sound. Under 'Text', there are blocks for 'read '?', (x) ->' and 'write x'. The main code editor shows two lines of code: '1 read '?', (x) ->' and '2 write x'. A red arrow points from the 'Text' block in the sidebar to the first line of code. Another red arrow points from the 'write x' block to a play button icon. To the right, the 'output' window shows a text input field with a question mark and a 'Submit' button.

## Задание 2

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output

Как тебя зовут?

Submit

 output

```
Как тебя зовут? Роман
Привет, Роман
```

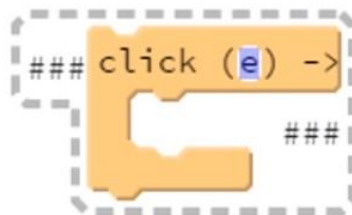
CODOLOGIA

# Решение

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The image shows a Scratch code editor interface. On the left is the 'Blocks' palette with categories: Move, Art, Text, Sound, Control, Operators, Sprites, and Snippets. The 'Operators' category is selected, showing '+' and '-' blocks. The main workspace contains a script with two blocks: a 'read' block with the text 'Как тебя зовут?' and a 'write' block with the text 'Привет, ' + x'. A play button is visible below the script. On the right is the 'output' window, which displays the text 'Как тебя зовут? Роман' on the first line and 'Привет, Роман' on the second line.

## Событие "click" в PancilCode



## Пример обработчика событий

```
1 click (e) ->
```

```
2   moveto e.x, e.y
```



# Напишем программу

Blocks

Move	Control	1	click (e) ->
Art	Operators	2	
Text	Sprites		
Sound	Snippets		

click (e) ->



Blocks

Move	Control	1	click (e) ->
Art	Operators	2	moveto 100, 50
Text	Sprites	3	
Sound	Snippets		

turnto 270

moveto 100, 50

movexy 30, 20

{ } code

```
1 click (e) ->
2   moveto 100, 50
3
```



{ } code

```
1 click (e) ->
2   moveto e.x, e.y
3
```



## Команда click

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Команда click - это функция привязки события, которая означает «слушать щелчки». Это команда, подключает обработчик событий к системе для его запуска при щелчке.

```
1 click (e) ->  
2 moveto e.x, e.y
```

## Параметр (e)

Параметр (e) является параметром объекта события. Когда происходит вход, объект события становится доступным в переменной e.

```
1 click (e) ->  
2 moveto e.x, e.y
```

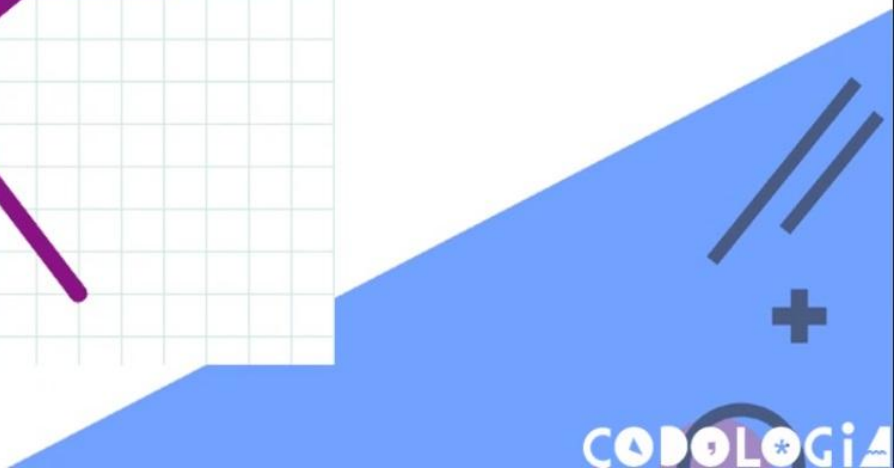
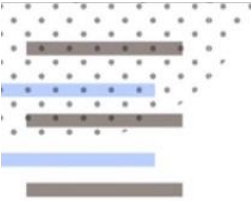
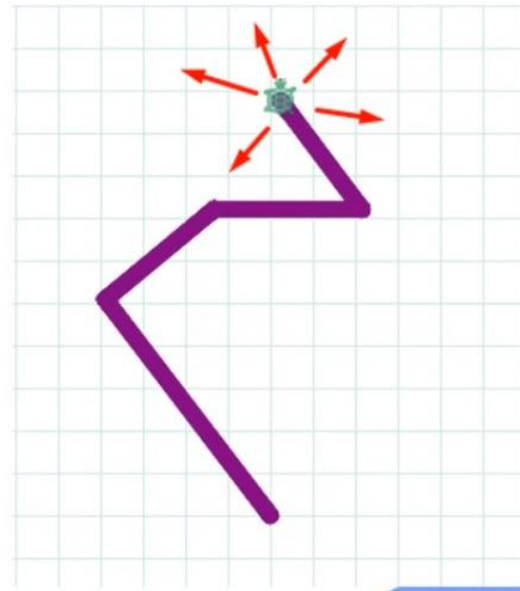
## Функция обработчика события

Все вместе, (e) -> moveto e.x, e.y - это функция обработчика события, которая является кодом для запуска, когда событие случается.

```
1 click (e) ->
```

```
2   moveto e.x, e.y
```

# Задание 3



# Решение

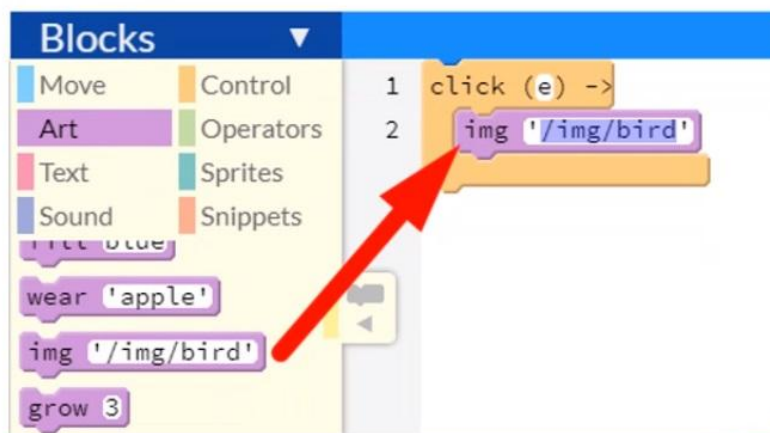
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```
1 pen ▼ purple, 10
```

```
2 click (e) ->
```

```
3   moveto e.x, e.y
```

## Сочетание ввода и вывода



The image shows a Scratch code editor interface. On the left, the 'Blocks' palette is visible, containing categories like Move, Art, Text, Sound, Control, Operators, Sprites, and Snippets. The 'Art' category is expanded, showing blocks such as 'fill blue', 'wear 'apple'', 'img '/img/bird'', and 'grow 3'. In the script area, a 'click (e) ->' block is selected, and an 'img '/img/bird'' block is attached to it. A red arrow points from the 'img' block in the palette to the 'img' block in the script area.

```
1 click (e) ->  
2   img '/img/bird'
```

## Пример 1

```
1 click (e) ->  
2   w = (img '/img/bird')  
3   w.moveto e.x, e.y  
4
```

```
{ } code
```

```
1 click (e) ->  
2   w = (img '/img/bird')  
3   w.moveto (e.x), e.y  
4
```



## Пример 2

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```
1 w = (img '/img/bird')
2 click (e) ->
3   w.moveto e.x, e.y
4
```





# Супер задание 1

Напишите программу рисования нескольких геометрических фигур по нажатию кнопок.

output

Круг | Квадрат | Треугольник

# Решение

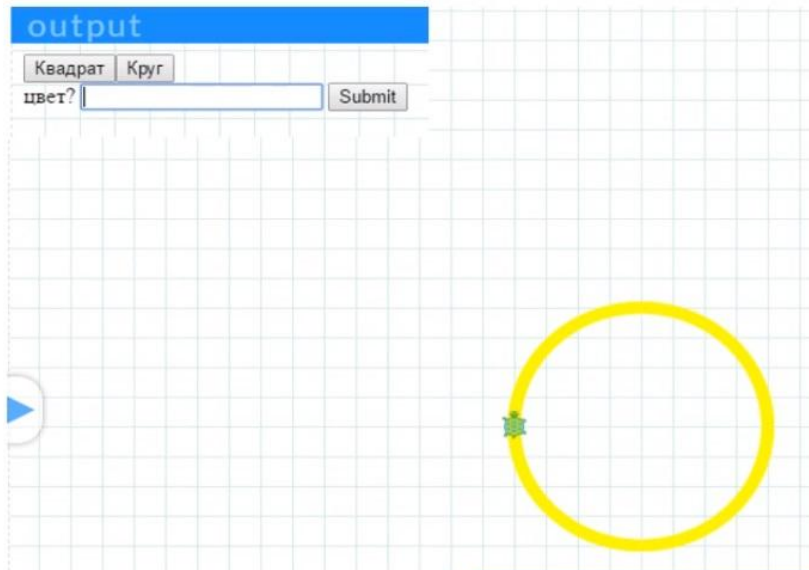
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```
1 button 'Круг', ->
2   pen ▼ purple, 10
3   rt ▼ 360, 100
4 button 'Квадрат', ->
5   pen ▼ red, 10
6   fd ▼ 100
7   rt ▼ 90
8   fd ▼ 100
9   rt ▼ 90
10  fd ▼ 100
11  rt ▼ 90
12  fd ▼ 100
```

```
13 button 'Треугольник', ->
14  pen ▼ purple, 10
15  rt ▼ 90
16  fd ▼ 100
17  rt ▼ 90
18  fd ▼ 100
19  rt ▼ 90
20  fd ▼ 100
```

## Супер задание 2

Напишите программу рисования геометрических фигур по нажатию кнопок с выбором цвета для каждой фигуры.



## Решение

```
1 button 'Квадрат', ->  
2   read 'цвет?', (x) ->  
3     box ▼ x, ▼ 50  
4 button 'Круг', ->  
5   read 'цвет?', (x) ->  
6     pen ▼ x, 10  
7     rt ▼ 360, 100
```

## Домашнее задание

Напишите программу, в которой будут кнопки с названиями геометрических фигур. Должно быть минимум 5 кнопок с фигурами на Ваш выбор. При нажатии на нужную кнопку должен задаваться вопрос “какой длины должна быть сторона фигуры” или “какой радиус”, если это круг. Затем, должен задаваться вопрос какого цвета должна быть эта фигура. После этого, черепашка должна нарисовать фигуру по введенным параметрам.



The screenshot shows a user interface for a programming task. On the left, there is a blue header labeled "output" with a small icon. Below it are three buttons: "Треугольник", "Квадрат", and "Круг". The "Треугольник" button is selected. Below the buttons, there are two text input fields: "Какая длина сторон? 100" and "Какого цвета? Yellow". A "Submit" button is located to the right of the second input field. On the right side of the interface, there is a drawing area with a grid background. A yellow triangle is drawn on the grid, with a small green turtle cursor at its bottom-left vertex.

Молодцы!

