

Scratch: Bring digital ideas to life



Flashcards



ca. 30 min.



9 Years+



Prior knowledge:
None



With the help of the flashcards you can discover Scratch on your own. You will get to know the program interface as well as the most important functions and commands.



Competences

- > Understanding of algorithmic patterns and structures
- > Basic understanding of the structure of a visual programming language

We look forward to your feedback: info@coding-for-tomorrow.de

Coding For Tomorrow is an initiative of Vodafone Foundation Germany gGmbH in cooperation with JUNGE TÜFTLER gGmbH
www.coding-for-tomorrow.de





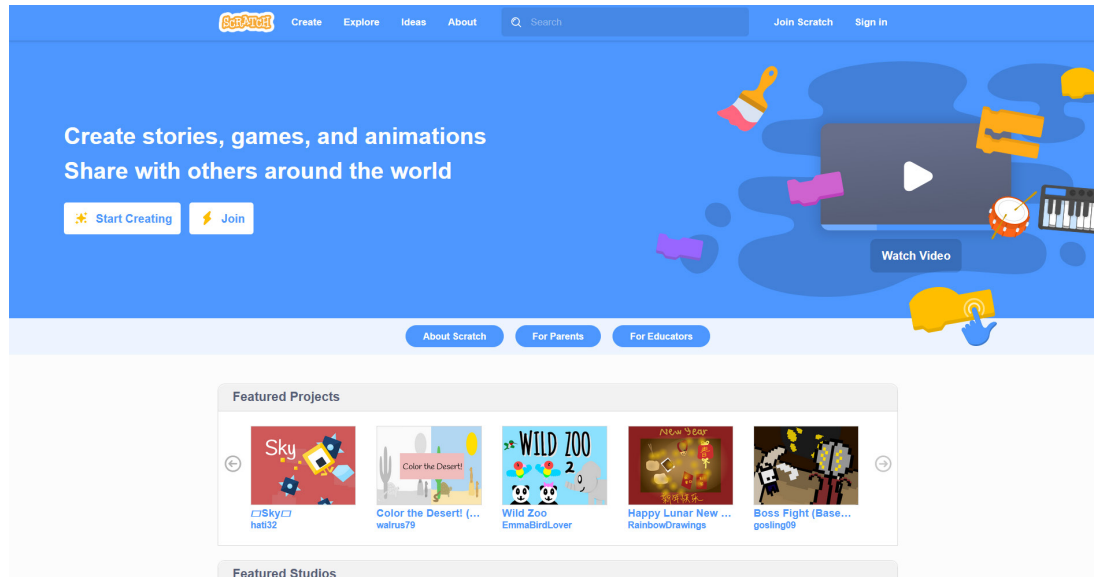
GENERAL INFORMATION ABOUT SCRATCH



1 Open Scratch via your browser: scratch.mit.edu

2 Use the button „Create“ to start the programming interface.

Create



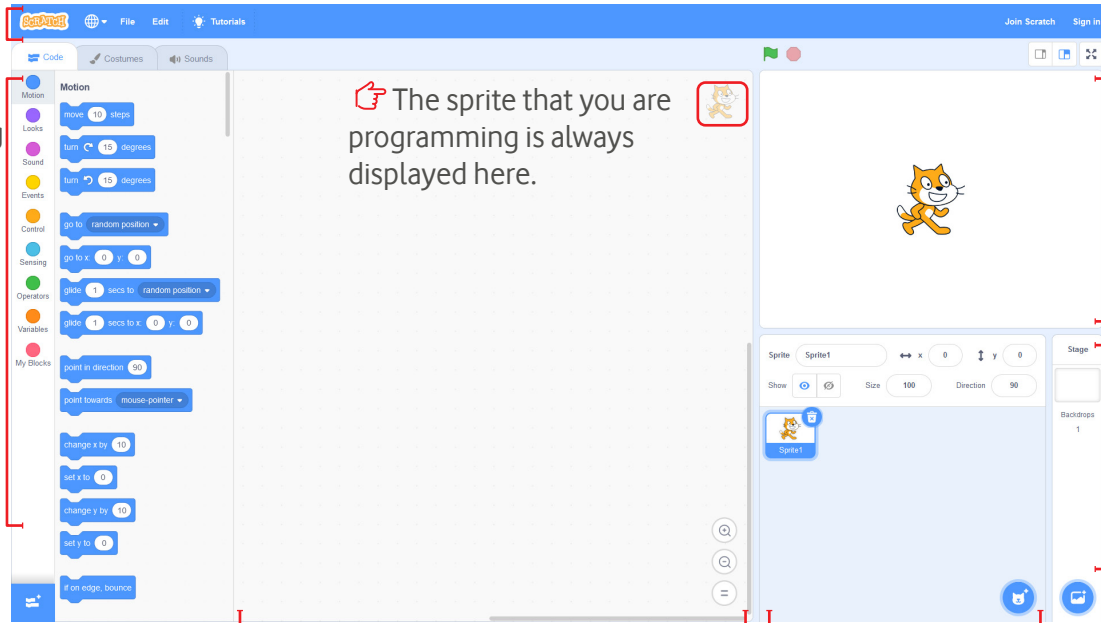


THE INTERFACE



Menu

Overview
Programming
Blocks



The Stage

Overview
Backdrops

Programming Interface

Overview Sprites



ADDING BACKDROPS

TASK: Pick a backdrop for your project

Click on the button „Choose a Backdrop“. It is located next to the sprite button.

Pick a backdrop.


The image shows a screenshot of the Scratch software interface. On the left, the 'Stage' area is visible, with a vertical toolbar containing icons for 'Stage', 'Sprites', 'Costumes', and 'Backdrops'. A green callout box with the text 'Choose a Backdrop' points to the 'Backdrops' icon in the toolbar. On the right, the 'Choose a Backdrop' menu is open, displaying a grid of various backdrop images. The menu includes a search bar, a category filter (currently set to 'All'), and a grid of backdrop thumbnails with labels such as 'Arctic', 'Baseball 1', 'Baseball 2', 'Basketball 1', 'Basketball 2', 'Beach', 'Bedroom 2', 'Bedroom 3', 'Bench With...', 'Blue Sky', 'Blue Sky 2', 'Boa', 'Castle 2', 'Castle 3', 'Castle 4', 'Chalkboard', 'Circles', and 'City V'.



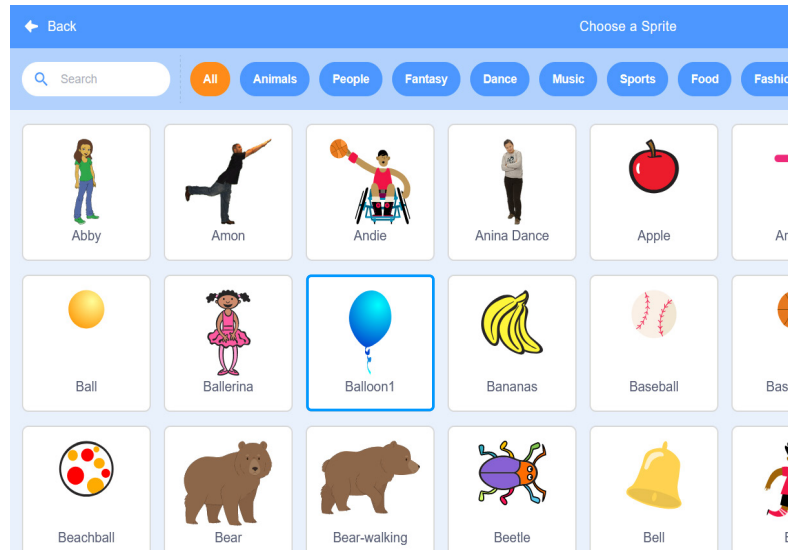
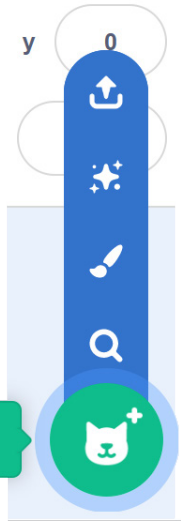
ADDING SPRITES

Task: Pick a sprite for your project.

Click on the button „Choose a Sprite“ and select a sprite in the sprite library.

To delete a sprite click  on the top right of the sprite.

Choose a Sprite





USING SOUNDS IN SCRATCH

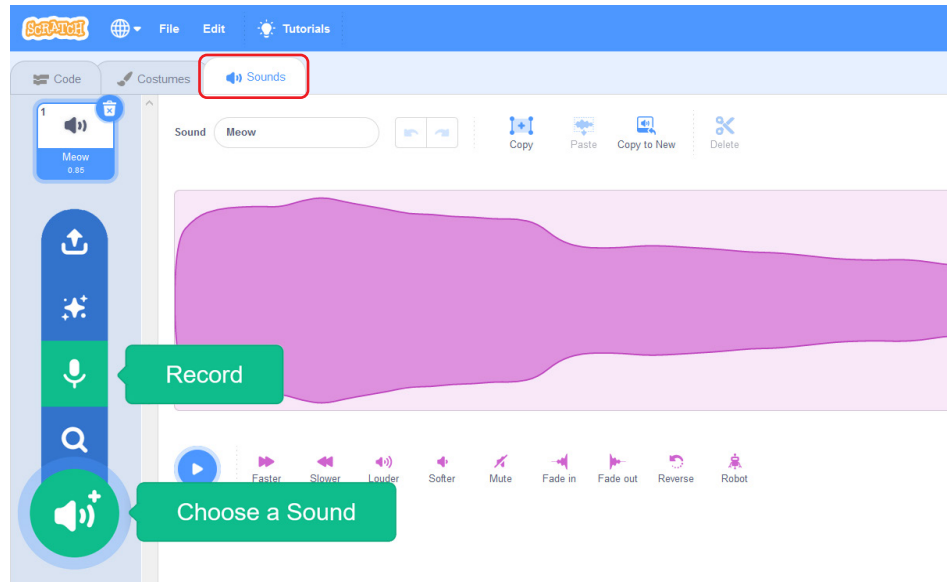
Task: Add a sound to your project or create it yourself.

To do this you first have to be in the tab „Sounds“.

To get to the sound library, press the „Choose a Sound“ button at the bottom left.

Now you can pick a sound.

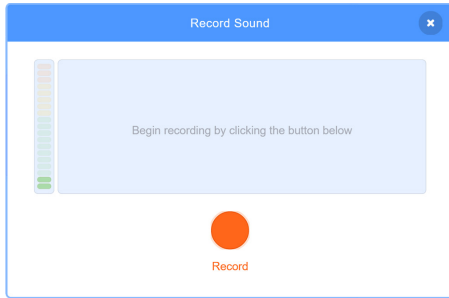
For creating your own sounds, use the „Record“ button and the following flashcard.



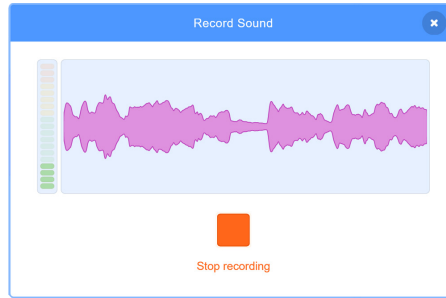


RECORDING SOUNDS IN SCRATCH

Task: Record your own sound for your project.

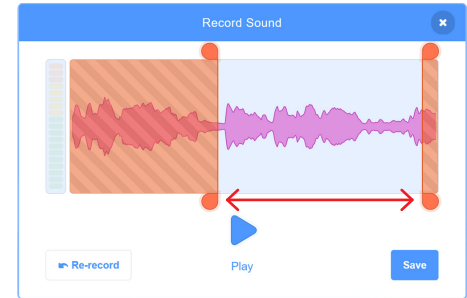


This is the home screen for the Scratch recording tool. Clicking on the red circle starts your recording.




Clicking on the red square ends your recording.

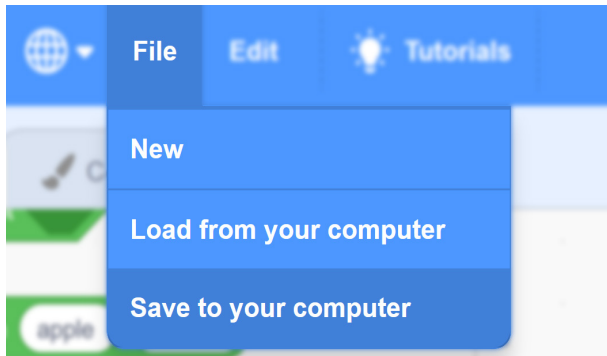
👉 Make sure to work in a quiet environment and speak slowly and clearly.



Before you save your recording, you can trim it to the right length. To do this, move the red sliders to the correct position.




 **Task:** Save your project on your laptop.




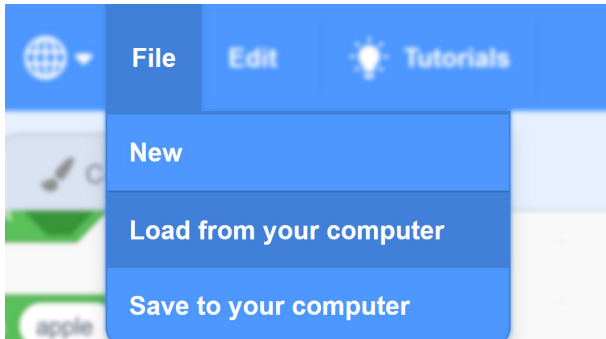
Find the „File“ button top left.

Select the sub-item in the menu
„Save to your computer“.

 If you have an online account,
your programs will be saved auto-
matically (using AutoSave).




 **Task:** Open a saved project from your laptop.



Look for the „File“ button again.

Select the sub-item in the menu
„Load from your computer“.

 With an online account,
you can access your project
via the folder symbol in the
top right corner.

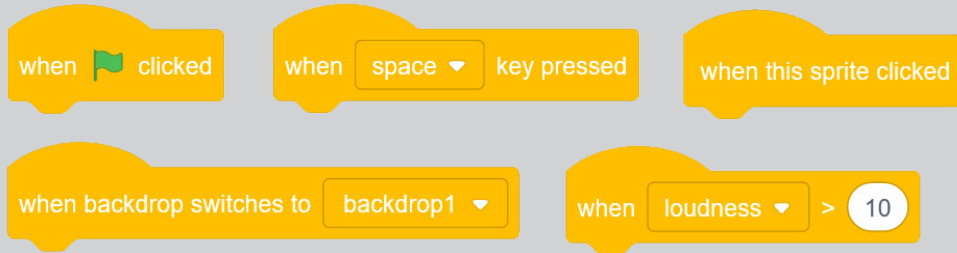




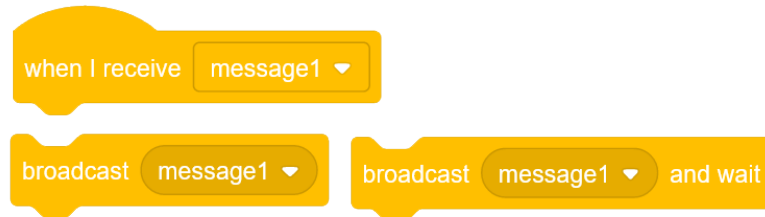
COMMAND BLOCKS IN SCRATCH

Task: Think about what the commands mean. Combine them with other commands and see what happens.

Here you will find some of the most important command blocks from the „Events“ section.



Events are command blocks with which your program or just certain parts of it can be started.



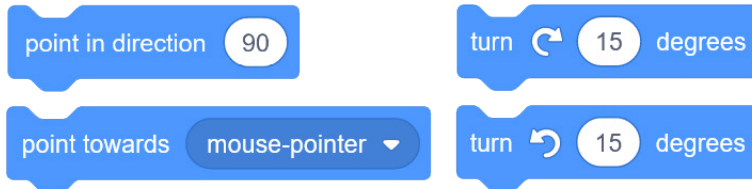
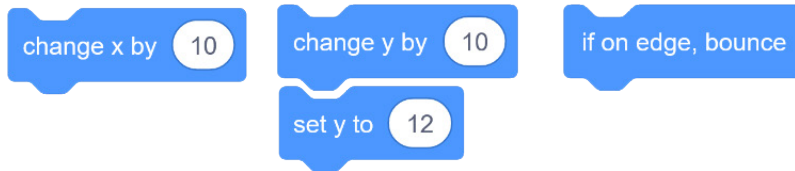
You can use the message blocks to connect sprites from your program with one another. One character can thus control the action of another.



COMMAND BLOCKS IN SCRATCH

Task: Think about what the commands mean. Combine them with event commands and see what happens.

Here you will find some of the most important command blocks from the „Motion“ section.



With these commands sprites can

... move on the stage.

... be placed on the stage.

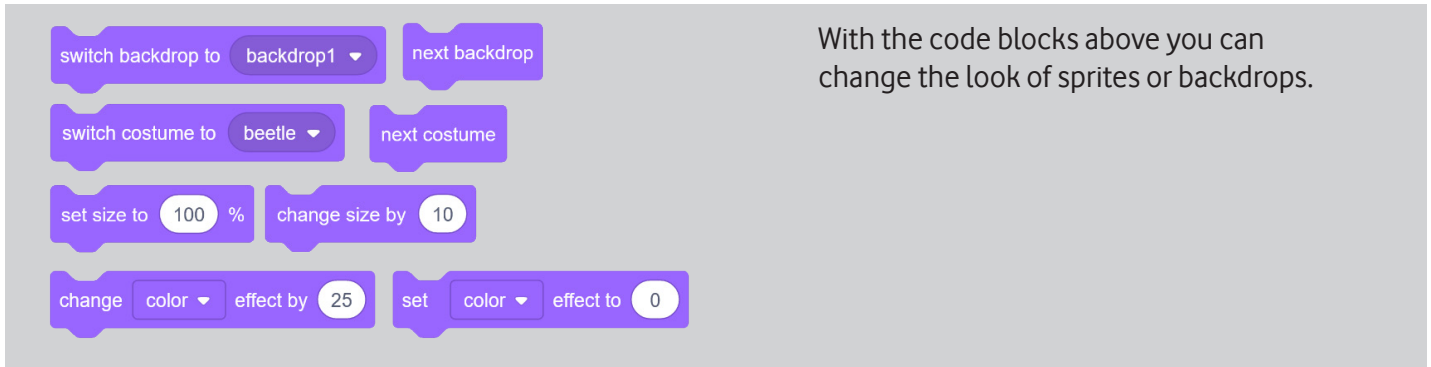
... turn into a direction.



COMMAND BLOCKS IN SCRATCH

Task: Think about what the commands mean. Combine them with event commands and see what happens.

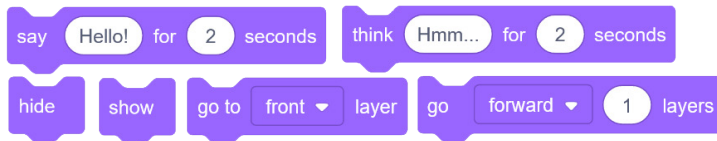
Here you find some of the most important command blocks from the „Look“ section.



With the code blocks above you can change the look of sprites or backdrops.

The screenshot shows the following command blocks in the 'Look' section:

- switch backdrop to backdrop1 (dropdown)
- next backdrop
- switch costume to beetle (dropdown)
- next costume
- set size to 100 %
- change size by 10
- change color effect by 25
- set color effect to 0



With the code blocks below you can write texts, or rather organize or hide and show sprites.

The screenshot shows the following command blocks in the 'Say' and 'Think' sections:

- say Hello! for 2 seconds
- think Hmm... for 2 seconds
- hide
- show
- go to front layer
- go forward 1 layers



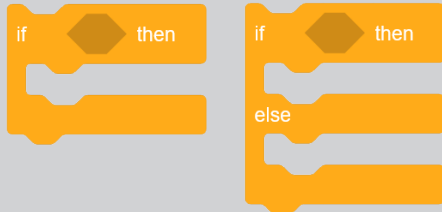
COMMAND BLOCKS IN SCRATCH

Task: Think about what the commands mean. Combine them with event commands and see what happens.

Here you will find some of the most important command blocks from the „Control“ section.

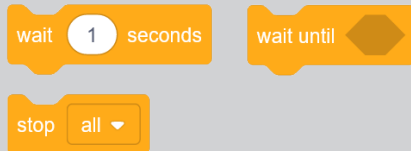


You can use these code blocks to repeat actions. They are called loops.



You can use these code blocks to influence the flow of your program.

Especially with the commands “if - then” your sprites can do different things.

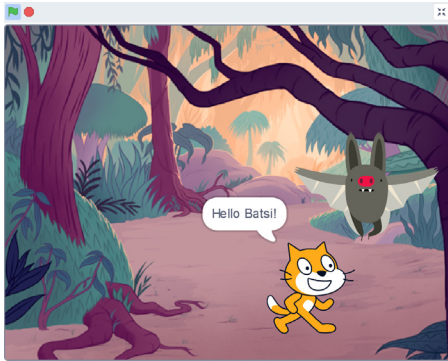




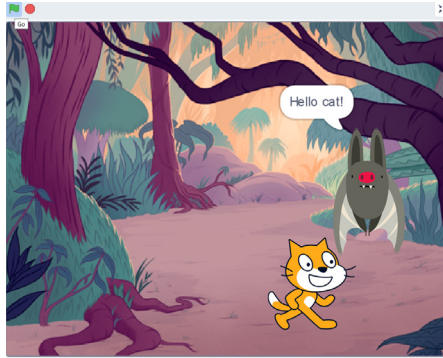
BROADCASTING MESSAGES IN SCRATCH



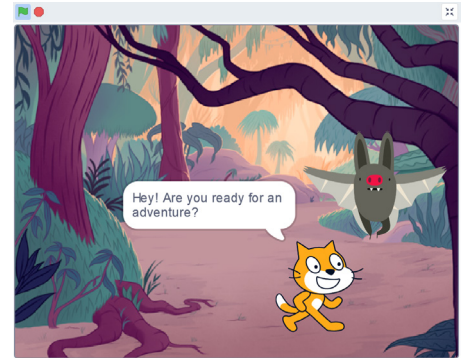
Task: Program a conversation between two characters (dialogue).



```
when green flag clicked
say Hello Bats! for 2 seconds
broadcast message1
```



```
when I receive message1
say Hello cat! for 2 seconds
broadcast message2
```



```
when I receive message2
say Hey! Are you ready for an adventure? for 4 seconds
stop all
```

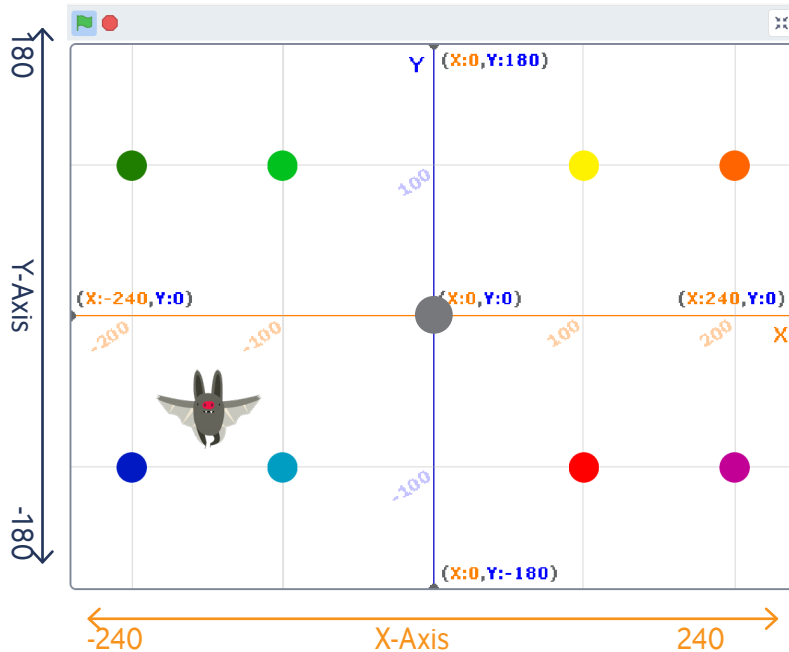


The code block „stop“ ends your program. You have to be careful if and where you insert it.

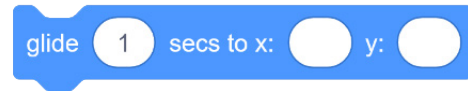


COORDINATE SYSTEM IN SCRATCH

Task: Bring the bat to the colored dots. Which values / numbers do you have to provide?



Scratch uses a coordinate system with two orientations.



The **X-axis** is used for all horizontal movements (**right / left**).

The **Y-axis** is vertical for all Movements (**up / down**) used..

👉 The center (**X: 0 / Y: 0**) is in the center of the stage.

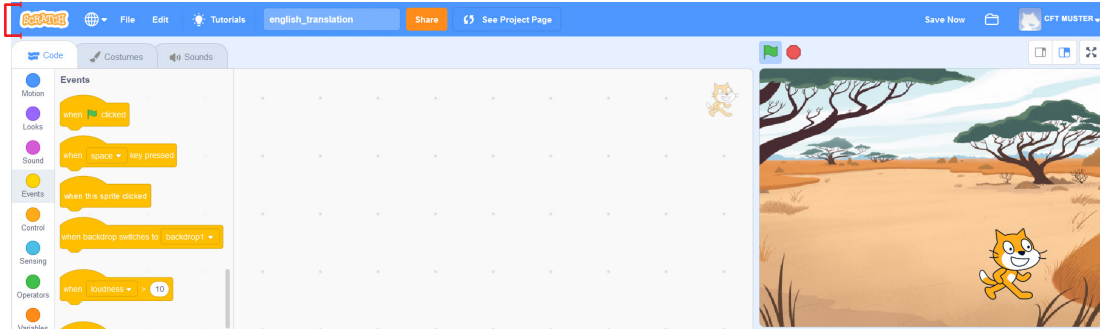
👉 When you move a sprite across the stage, Scratch automatically adjusts the new values in the motion blocks.



CHANGED MENU BAR FOR ACCOUNTS



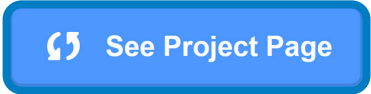
Menu Bar



Here you can give your project a project name.



Here you can share projects with others.



Here you can edit the page on which your project is shown.

You need an overview of your projects or information about your account? Then use these two buttons.

