

# Scratch Jr.

<http://cs.oregonstate.edu/~mjb/scratch>



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**Oregon State**  
University  
Computer Graphics

## What Is Scratch Jr.?

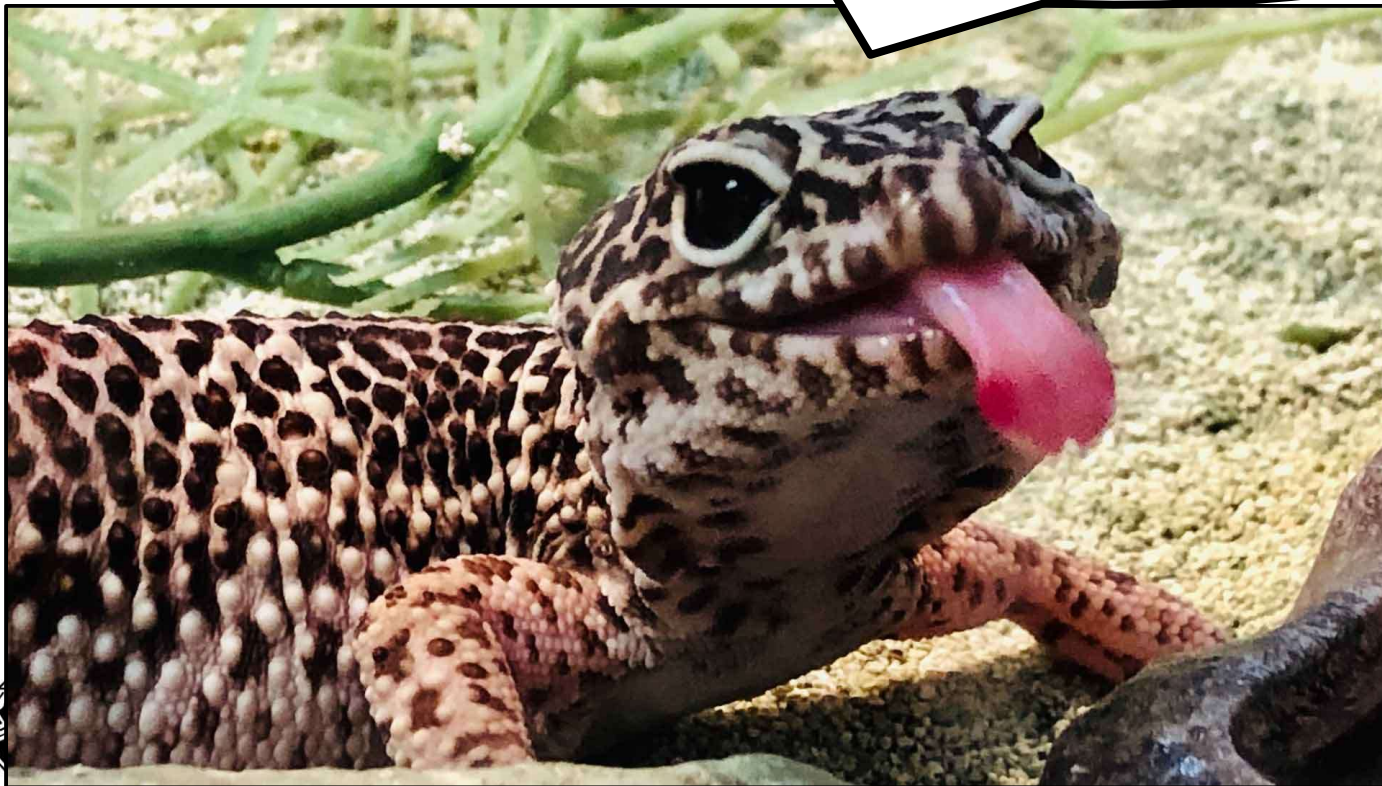


From the Scratch Jr. web page: <https://www.scratchjr.org/>

“Coding (or computer programming) is a new type of literacy. Just as writing helps you organize your thinking and express your ideas, the same is true for coding. In the past, coding was seen as too difficult for most people. But we think coding should be for everyone, just like writing.

As young children code with ScratchJr, they learn how to create and express themselves with the computer, not just to interact with it. In the process, children learn to solve problems and design projects, and they develop sequencing skills that are foundational for later academic success. They also use math and language in a meaningful and motivating context, supporting the development of early-childhood numeracy and literacy. With ScratchJr, children aren't just learning to code, they are coding to learn.”

*I hate  
mornings!*



# What Kind of People Need to Tell the Computer How to Move Things Around?

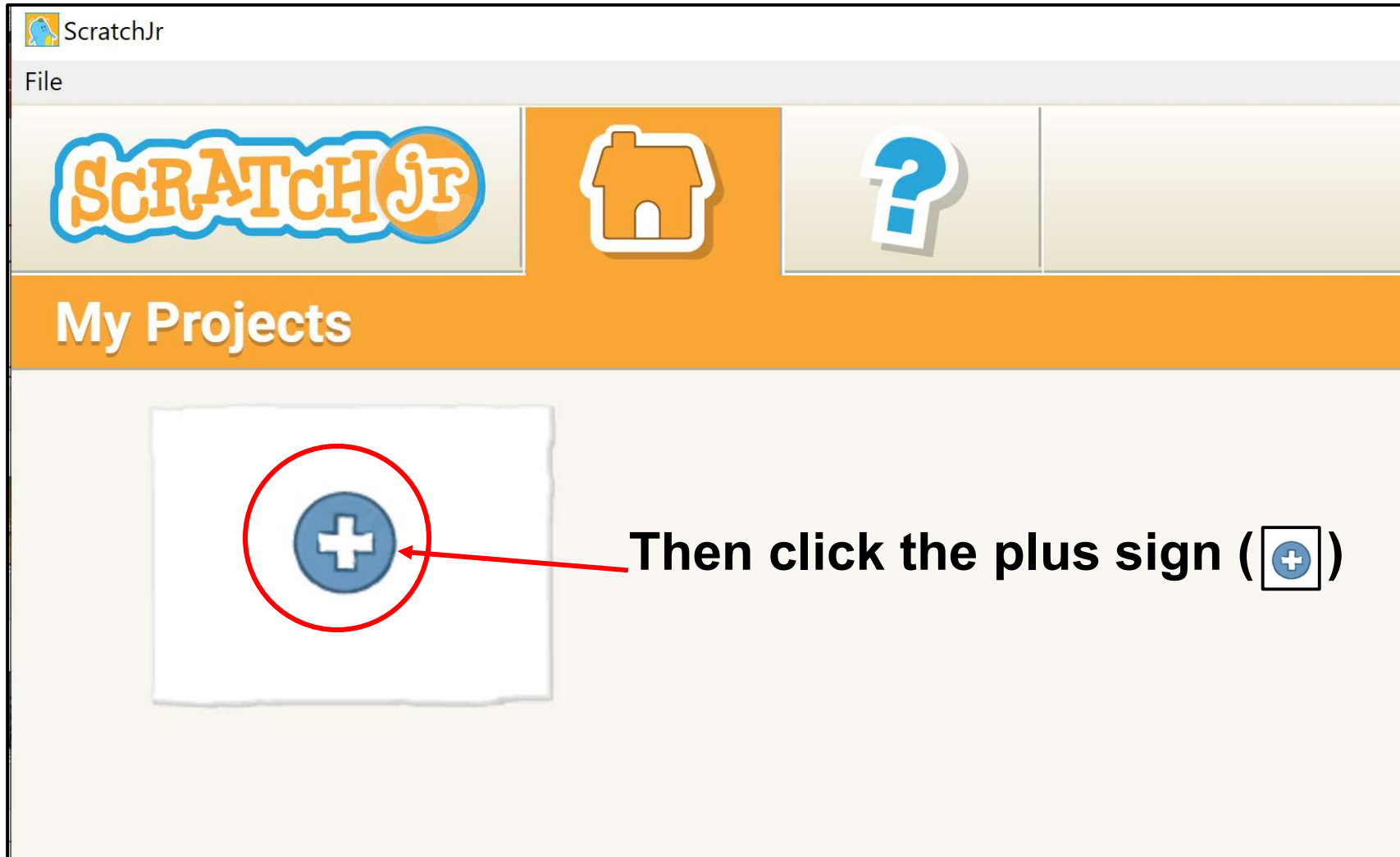




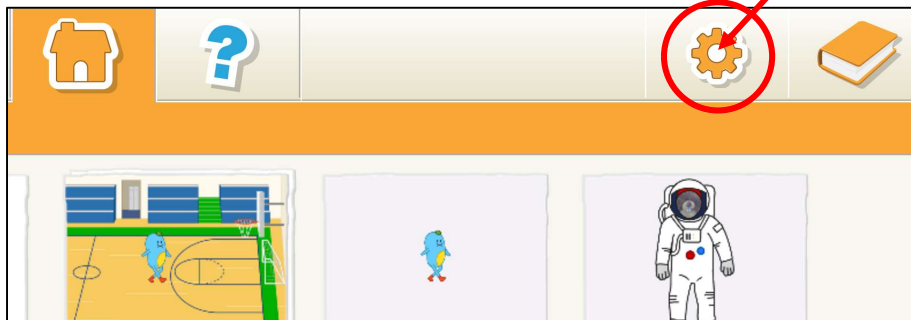


**Start by clicking the House**

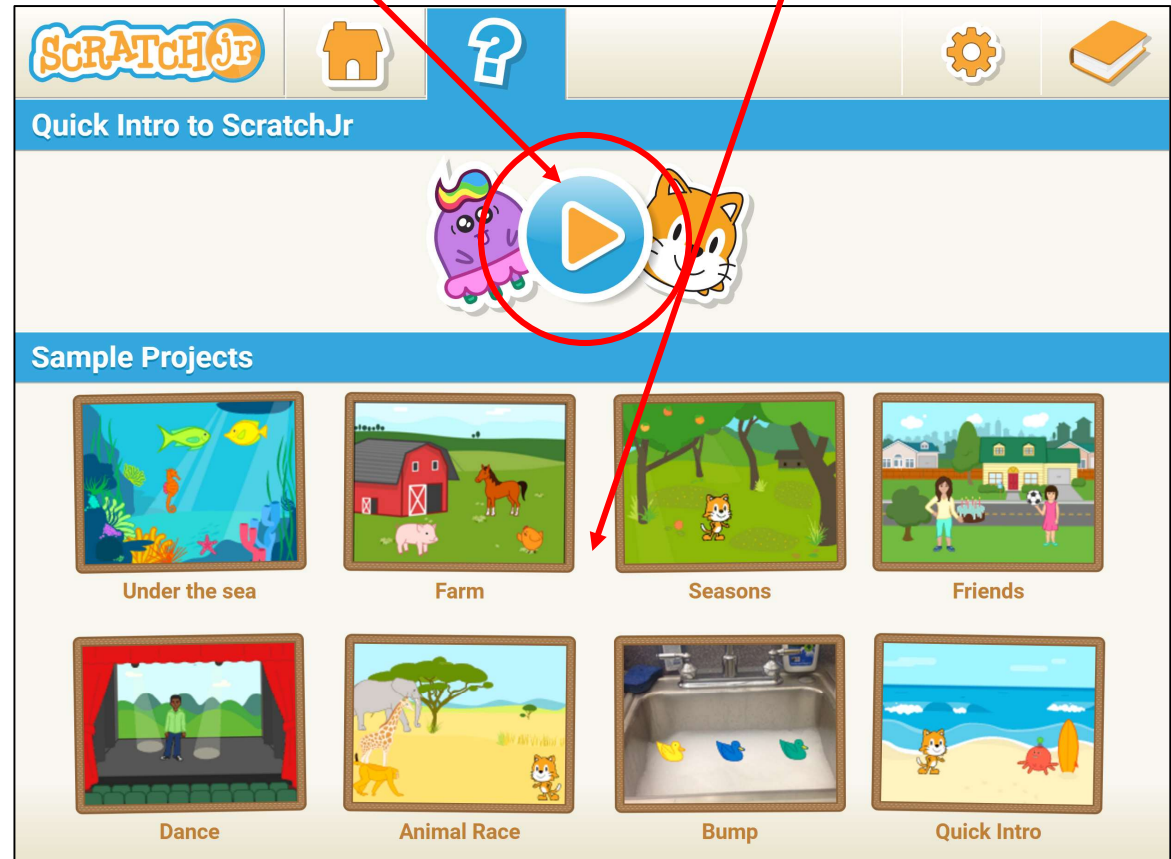
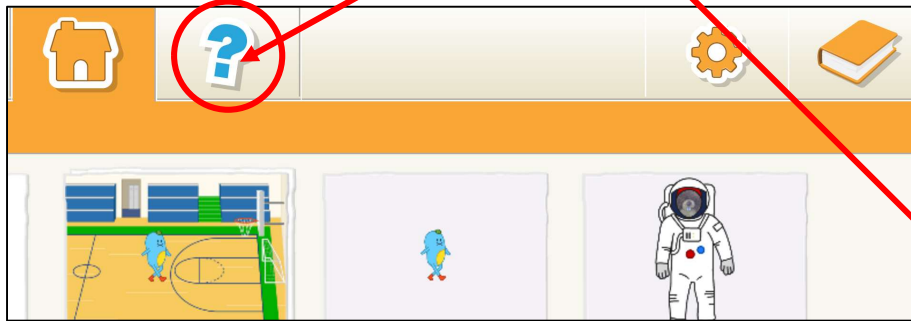




## Clicking on the Settings Gear Will Let You Change the Language

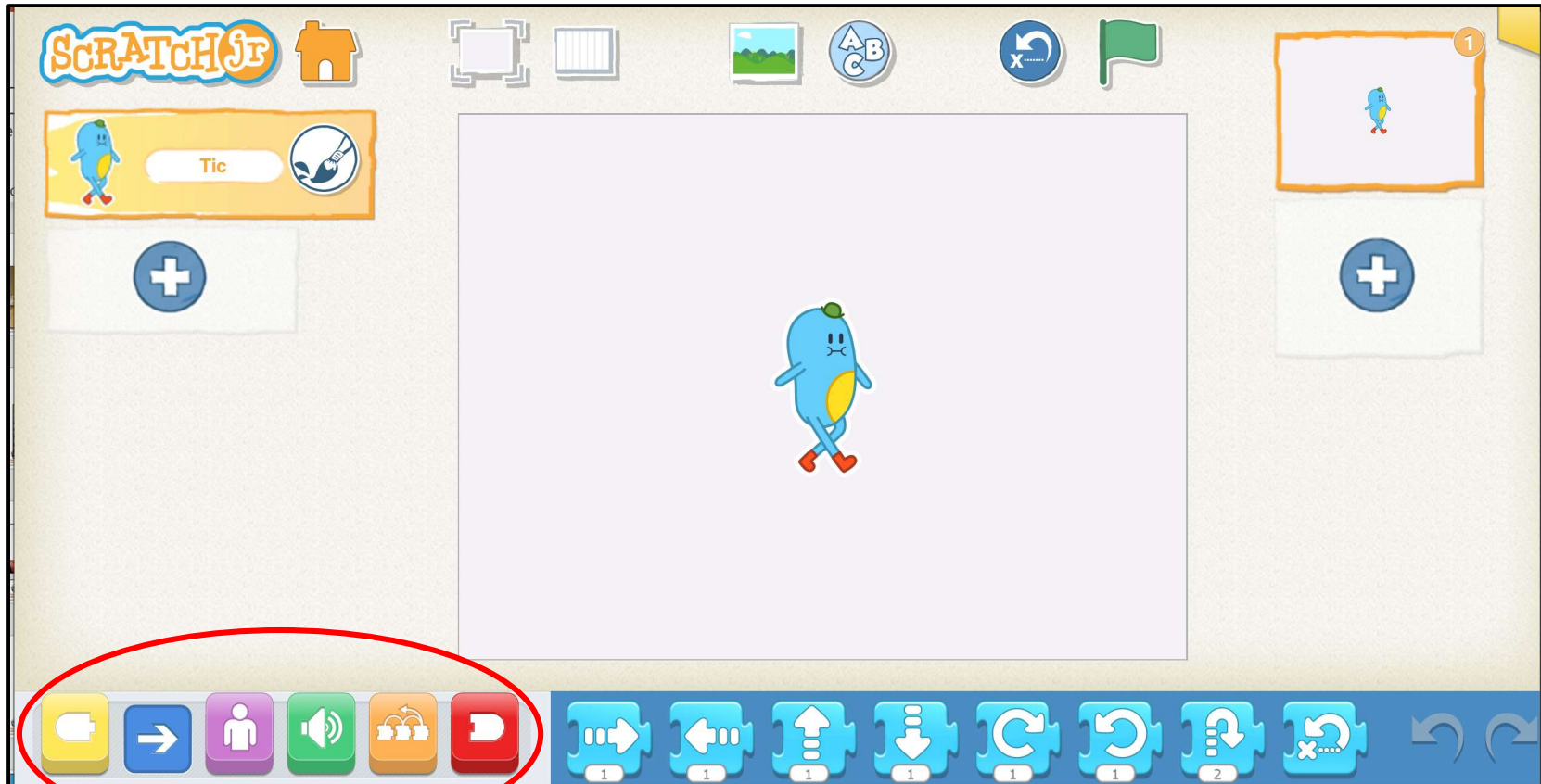


**Clicking on the Question Mark Will Allow You To Play an Introductory Video (3:28) and Try Some Sample Programs**





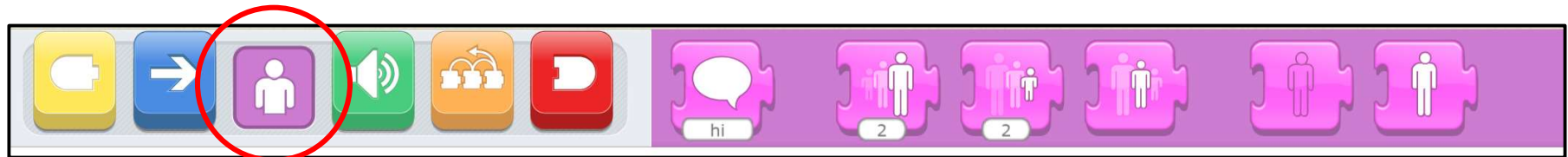
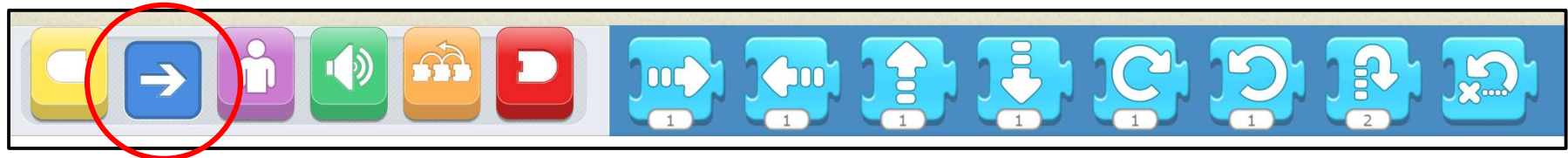
## The Scratch Jr. Screen Layout



These 6 buttons are ***super-important!***  
They help you find the puzzle pieces to  
make your character act in your movie.

# What is Hiding Behind the Six Buttons?

10



## Drag Puzzle Pieces Out and Click the Green Flag



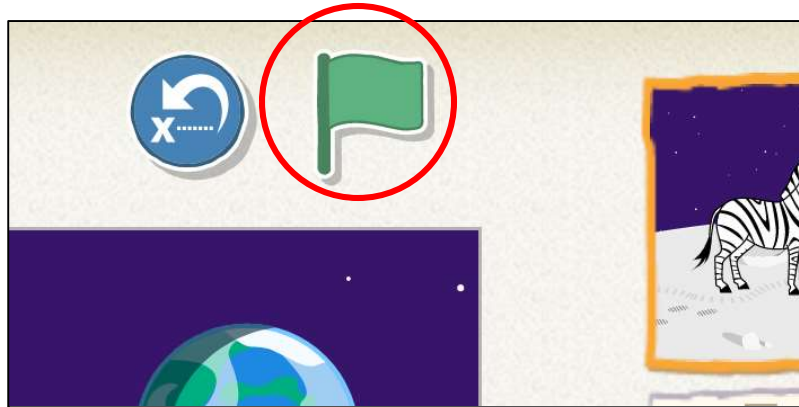


# When the Green Flag Gets Waved at a Car Race, What Happens?

12

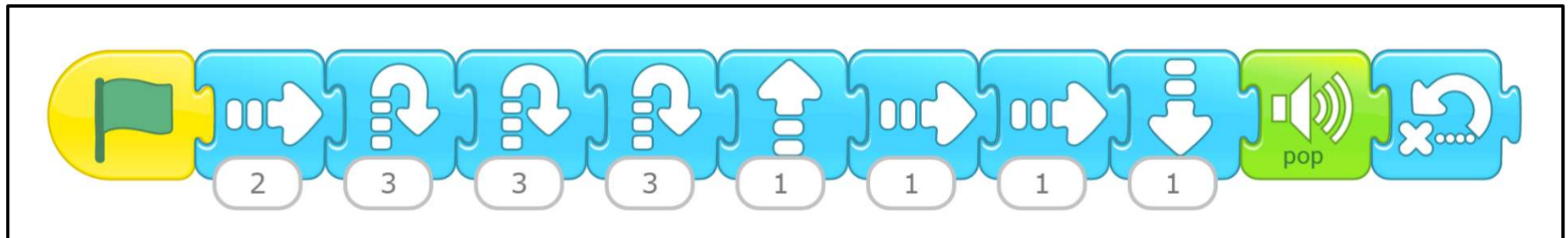


## So, When the Scratch Jr. Green Flag Gets Clicked (Waved), Your Programs Start





## Whatever Your Puzzle Pieces Say, That's What Your Character Will Do



## The Yellow Button – When to Start This Program

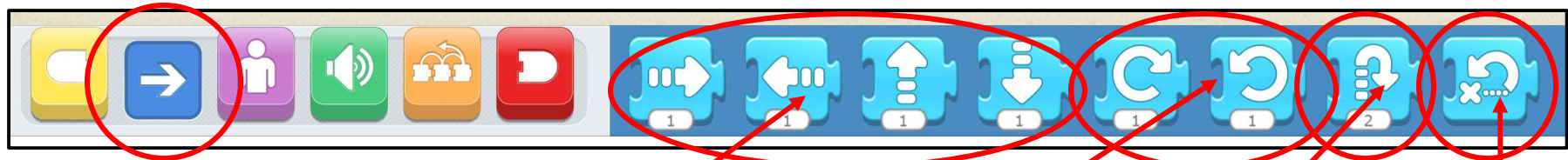


Start all programs that have  
a Green Flag Puzzle Piece

Start this program when I  
touch this character with  
my mouse or finger

Start this program when  
another character  
touches this character

# The Blue Button – Making Your Character Move



Move the character to the right, left, up, and down

Rotate the character

Make the character hop

Make the character go back to where it started from




Clicking on the number will bring up a calculator to get your character to take longer steps, more rotations, or higher hops

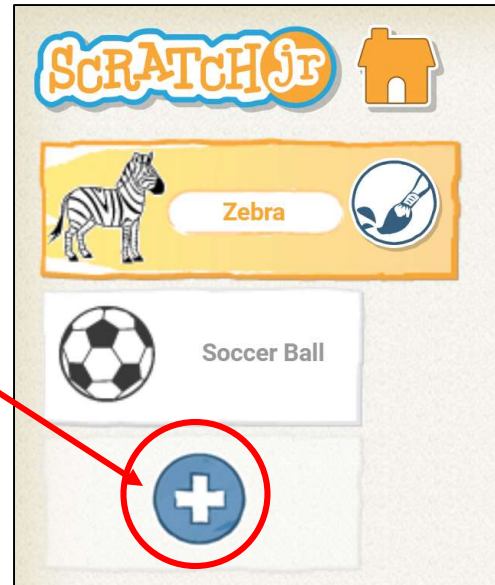


**Hint #1:** the biggest number you can enter is **99**

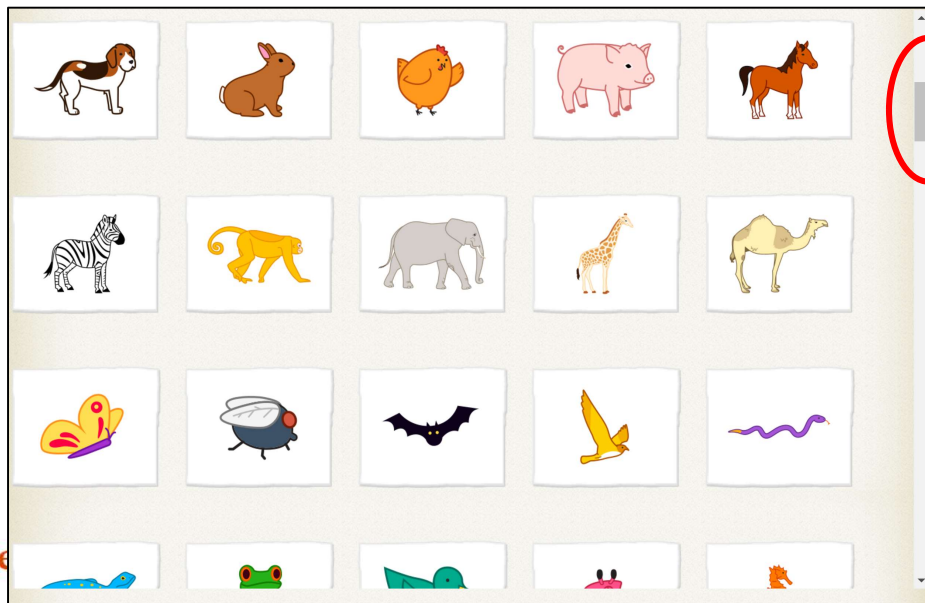
**Hint #2:** entering a number of **12** for a rotation gives a full turn

## Adding More Characters

Click on this plus sign (  ) to select a new character from the big list

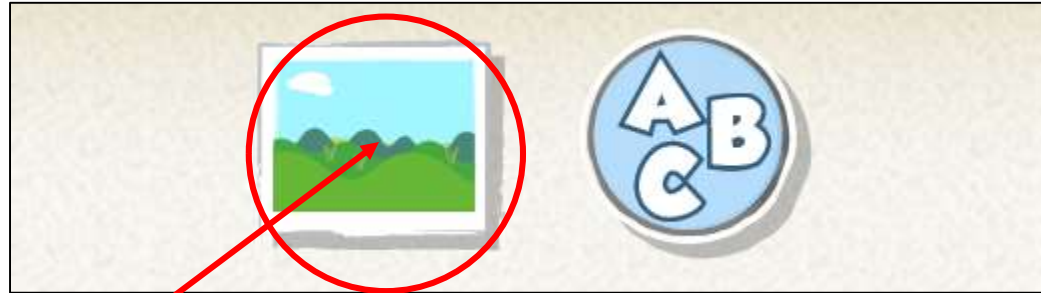


Keep scrolling – there are lots more!

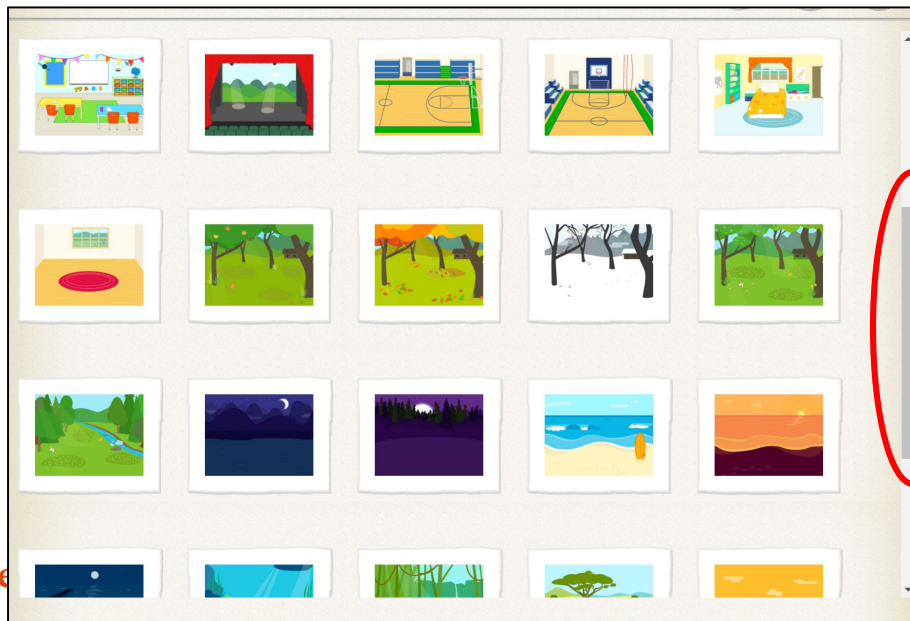


**Hint:** to make this new character move, they need to have a program written for them too.

## Adding a Background



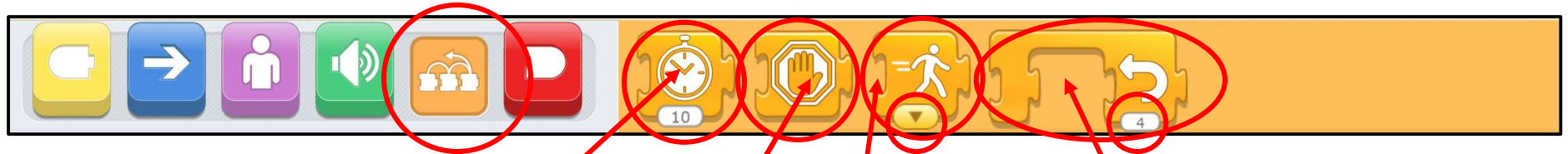
Click this photograph to select a background from the big list



Keep scrolling – there are lots more!



# The Orange Button -- Control

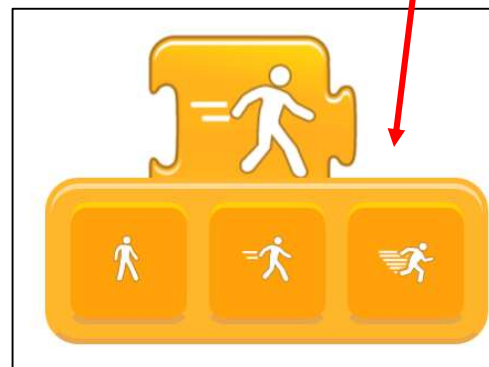


Wait some amount of time  
(the number is in  $\frac{1}{10}$ ths of  
a second)

Stop the  
character

Set the  
character's  
speed  
(there will be 3  
choices when  
you click the  
down-facing  
triangle)

Whatever puzzle  
pieces you put in  
here will get  
repeated as many  
times as the number



# The Purple Button – Changing Your Character's Appearance

20



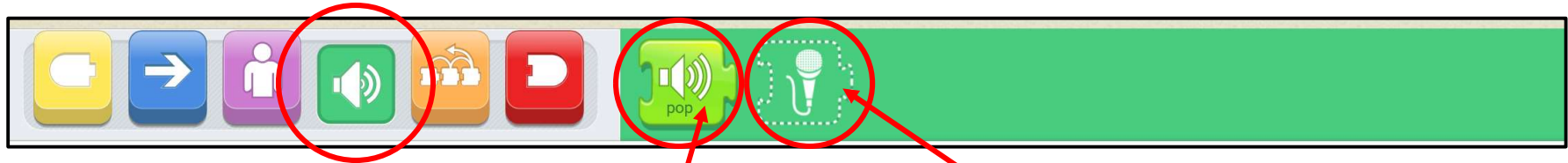
Give the character  
a thought bubble  
(click **hi** to enter  
new text)

Make the character  
bigger or smaller

Make the character  
its original size

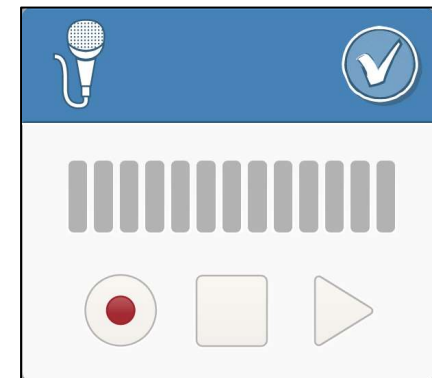
Make the  
character vanish  
or re-appear

## The Green Button – Sounds!



Using this puzzle piece in your program will play a popping sound

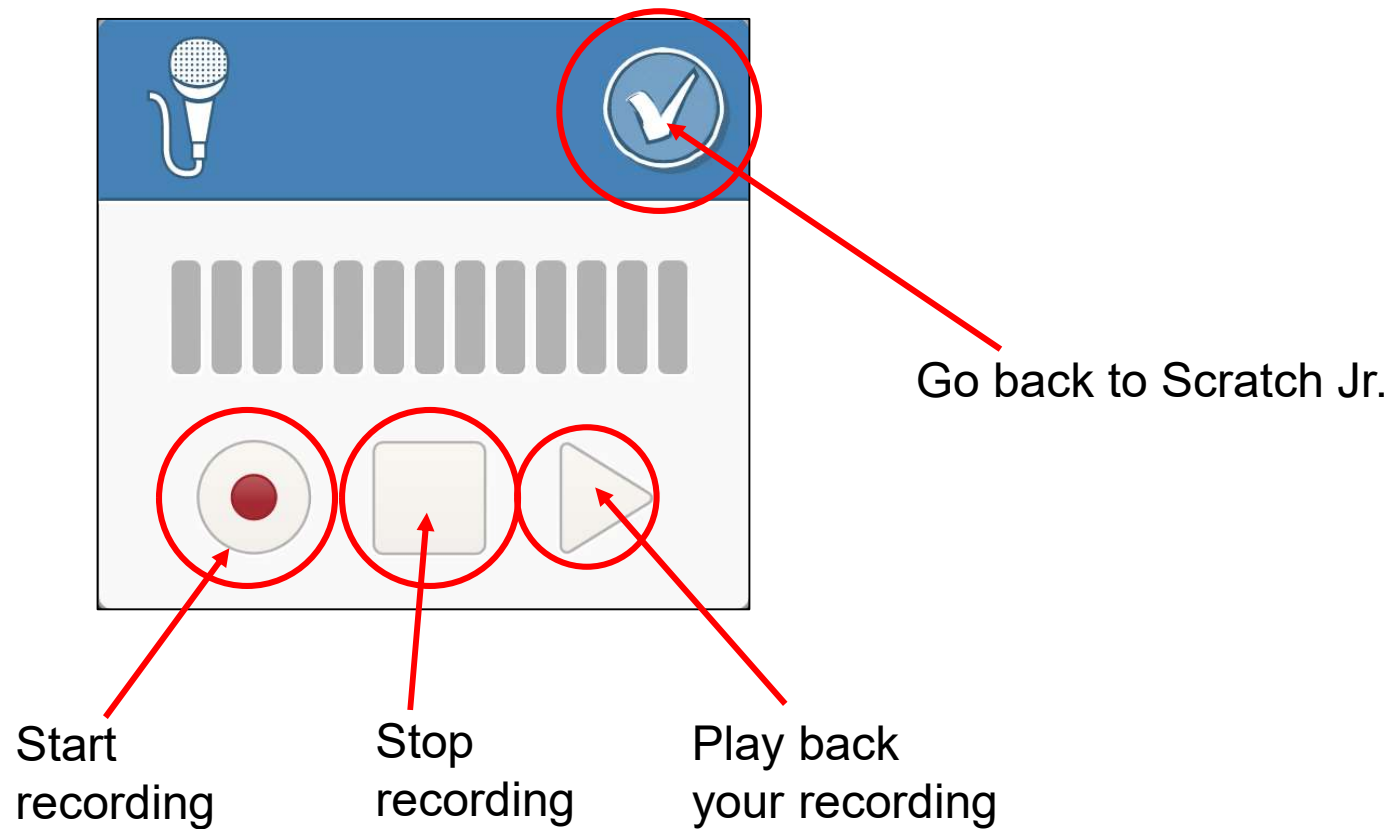
This isn't a puzzle piece. It is a command to let you record your own sound.



If you are on an iPad, you might have to make the microphone work by going to:

**Settings → Scratch Jr → Microphone slide**

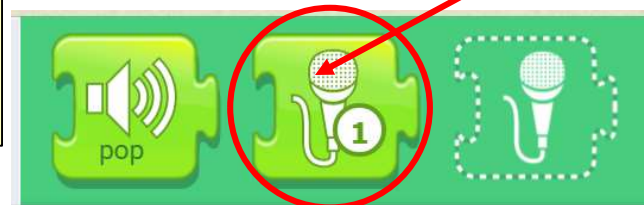
## Sounds !



You will now have a new puzzle piece to play the recording you just made

If you are on an iPad, you might have to make the microphone work by going to:

**Settings → Scratch Jr → Microphone slide**



# The Red Button – Stopping, Looping, and Jumping to a New Room



Stop the  
program

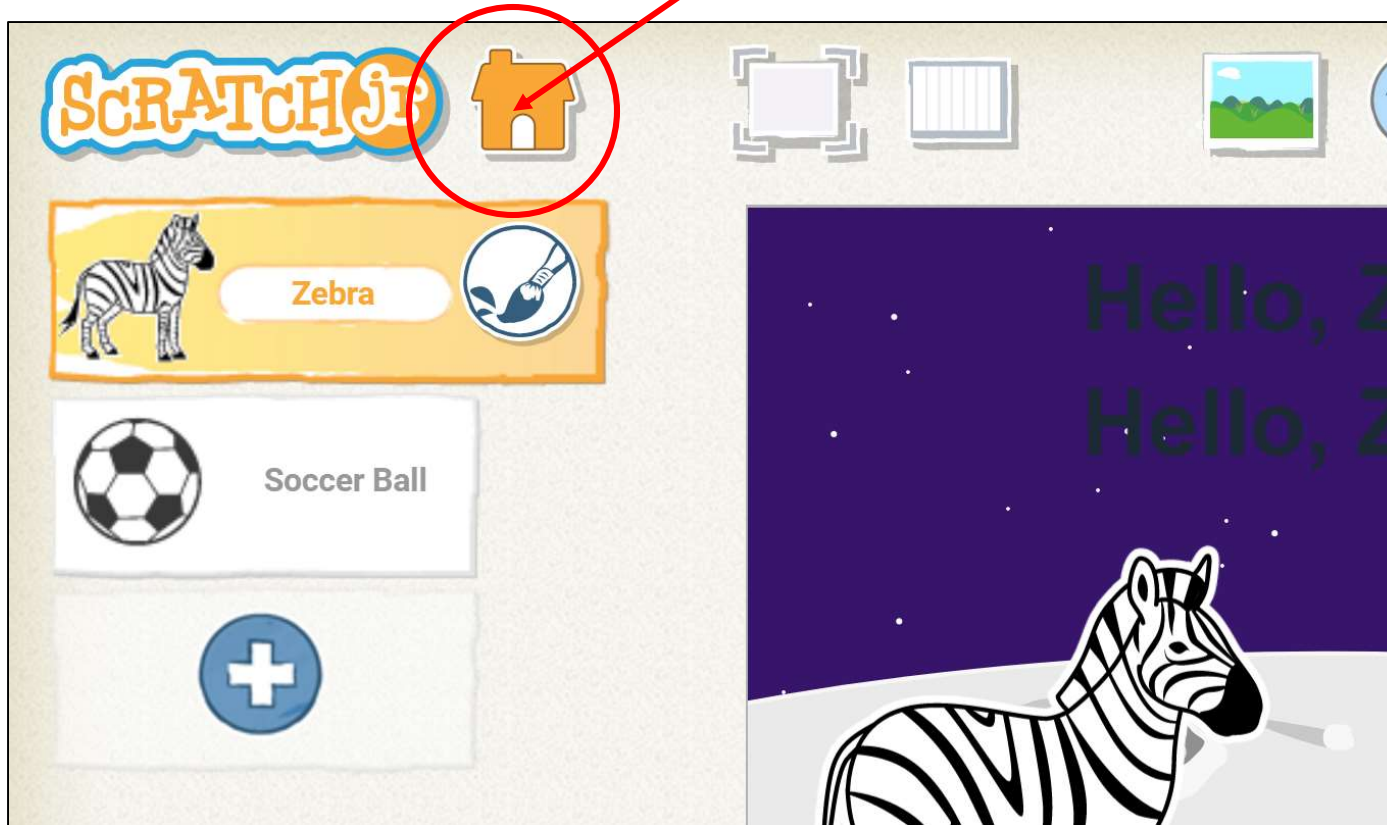
Re-run the  
program  
forever

If you have more than  
one room, you can also  
use this puzzle piece to  
jump to another room

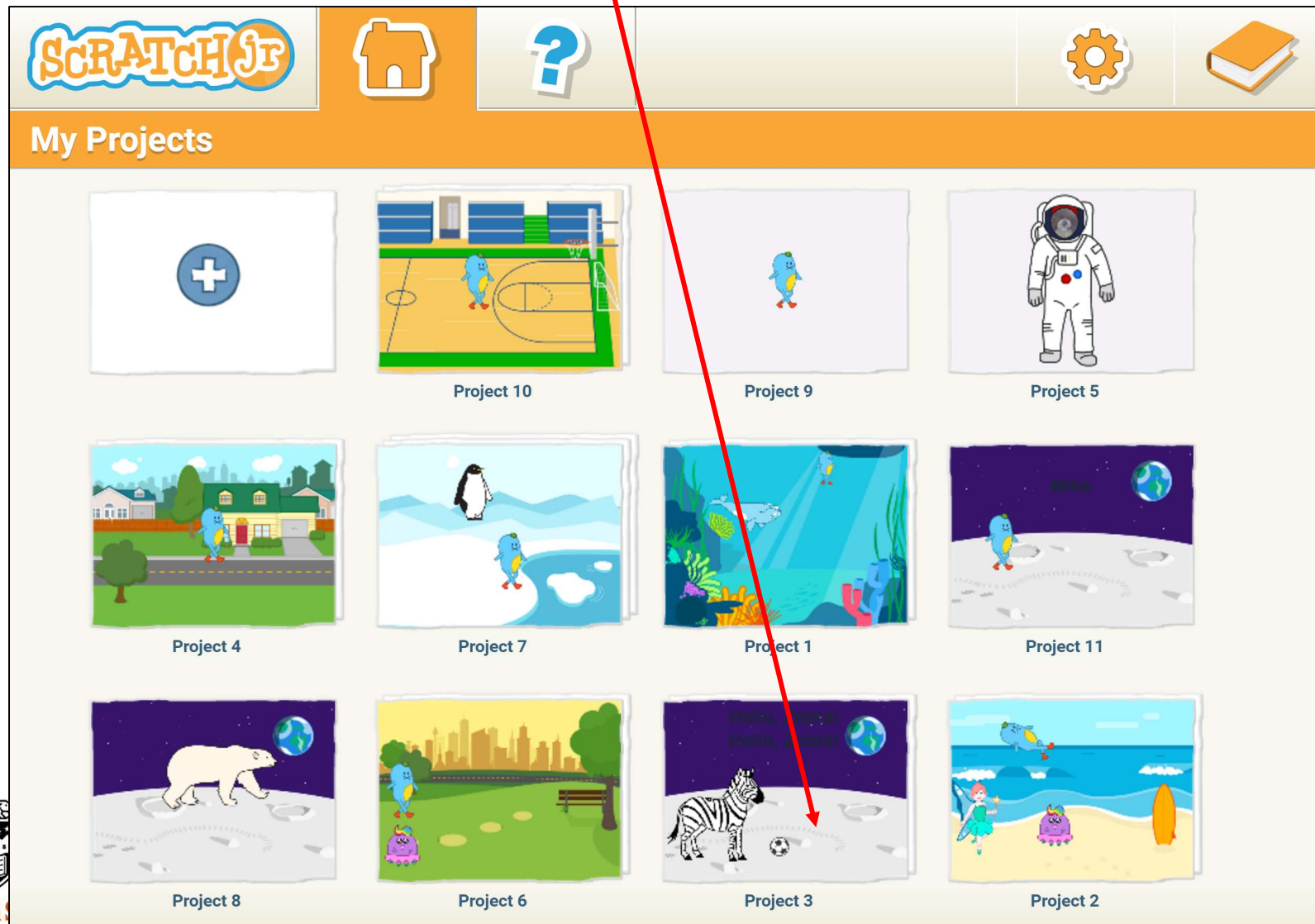




## Warning! Scratch Jr. Doesn't Save Your Movie Program Until You Hit the Home on Your Screen



**And, When You Do Hit the Home on Your Screen, Scratch Jr. Will Show You *All* Your Movies – Just Click on One to Get Back Into It**

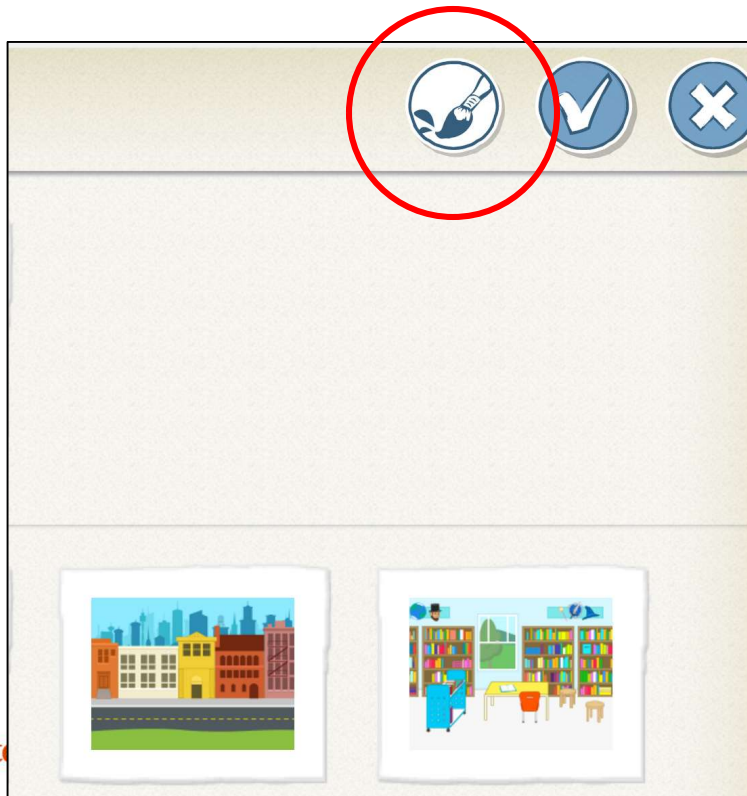


# Painting !

There are times when Scratch Jr. will let you paint! Look for this icon:



When selecting a character.



When selecting a background.

# Painting !

Clicking on



takes you here to the Scratch Jr. paint screen:

The image shows the Scratch Jr. paint screen with a central grid. On the left side, there are tools for drawing shapes (squiggle, oval, rectangle, triangle), selecting line thickness, and selecting line or fill color. On the right side, there are tools for selecting, rotating, duplicating, cutting, and taking a photo. At the bottom, there is a color palette.

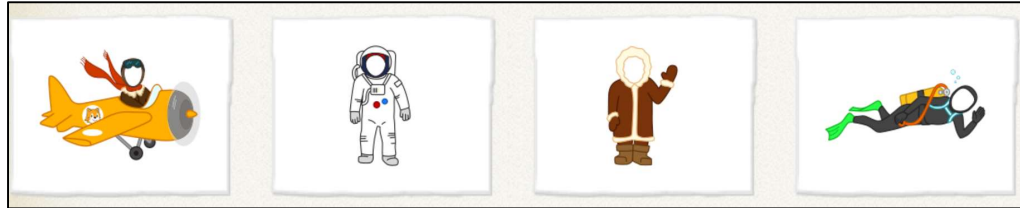
Annotations with red arrows pointing to the tools:

- Draw a squiggle, oval, rectangle, or triangle
- Select a line thickness
- Select a line or fill color
- Select something you've already drawn
- Rotate the thing you've selected
- Duplicate the thing you've selected
- Cut (delete) the thing you've selected
- Take a photo (maybe of yourself!)
- Fill with paint

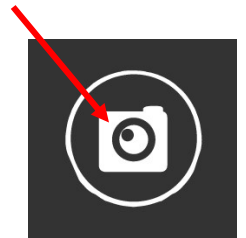
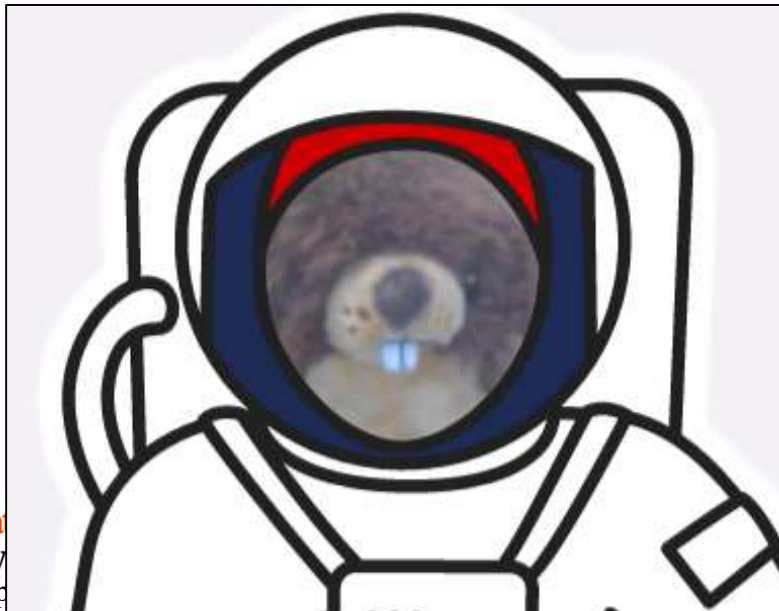


## Using the Camera

You can use the camera to add photos to the background or a character. You might have already noticed that some of the characters have empty faces:



If you click the paintbrush that is with one of these characters, then click on the camera, then click on the face area of the character, then click on the snapshot icon, whatever your camera sees will be on the character's face.





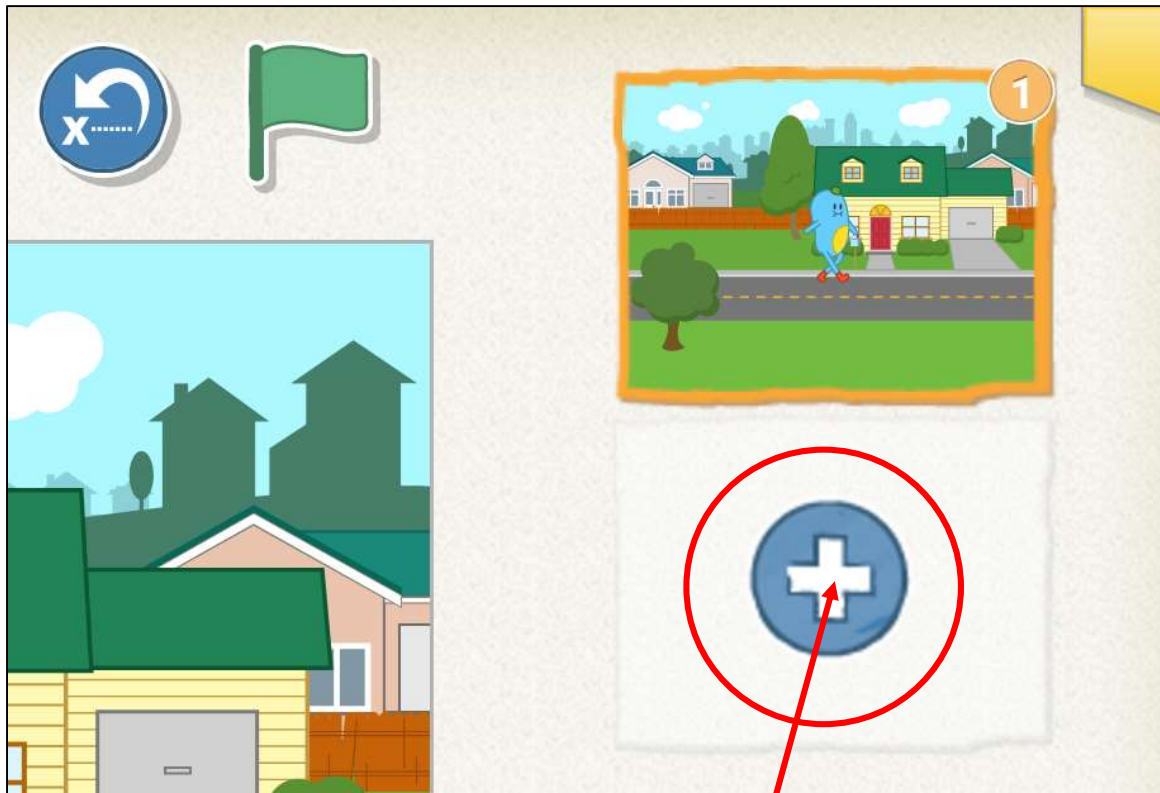
## Adding a Title




Click on the **ABC**  
then type your title



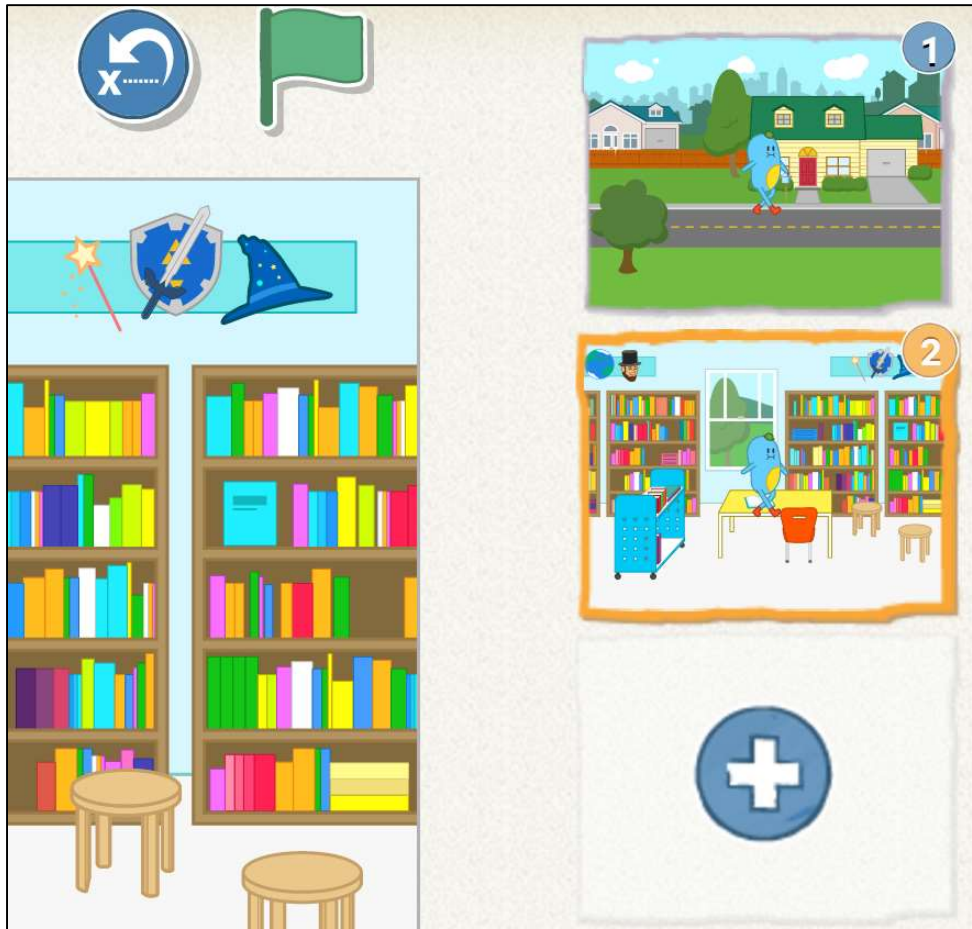
## Adding another Room



Click on this plus sign () to add another room. A room is a whole separate scene where you can add new characters, add a new background, and write new programs for your characters to act out.



## Adding another Room



If you have more than one room, you can also use this puzzle piece to jump to another room

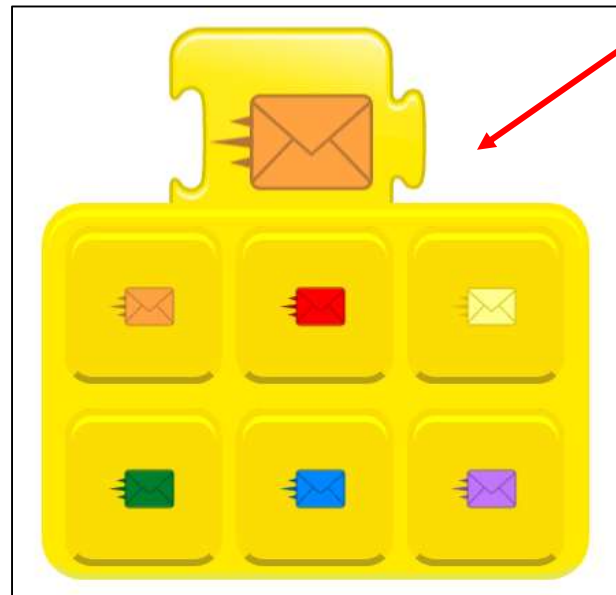


## The Yellow Button – Advanced

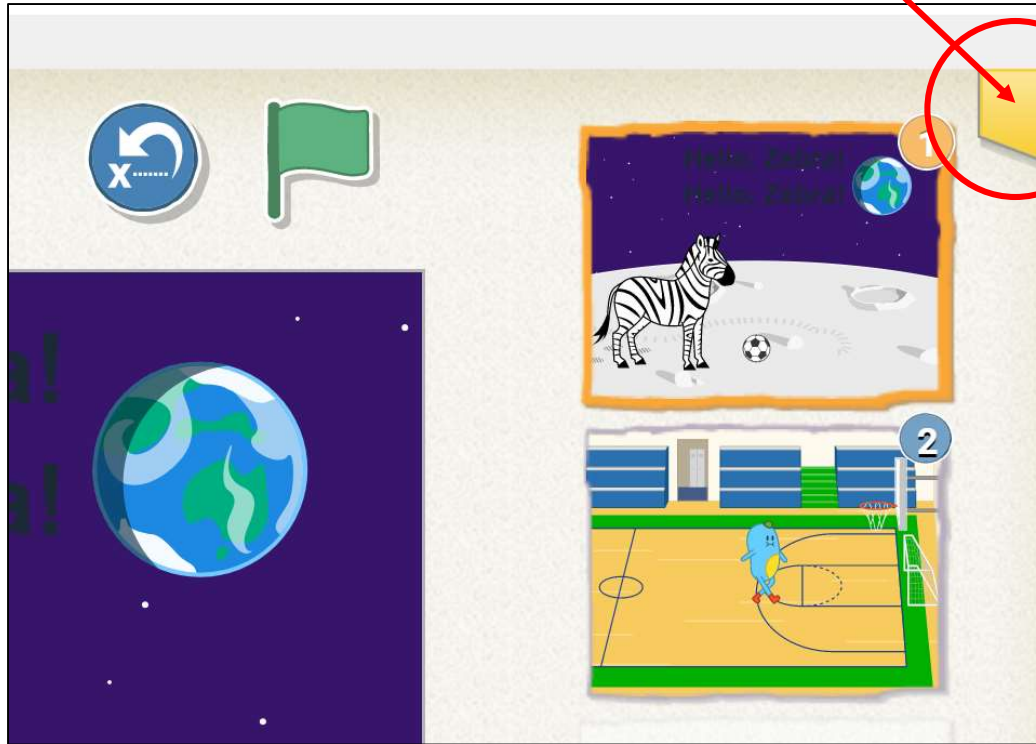


Start this program when  
another character  
shouts a color name

Shout the name of a color!  
The down-facing triangle  
lets you pick the color  
name to shout.

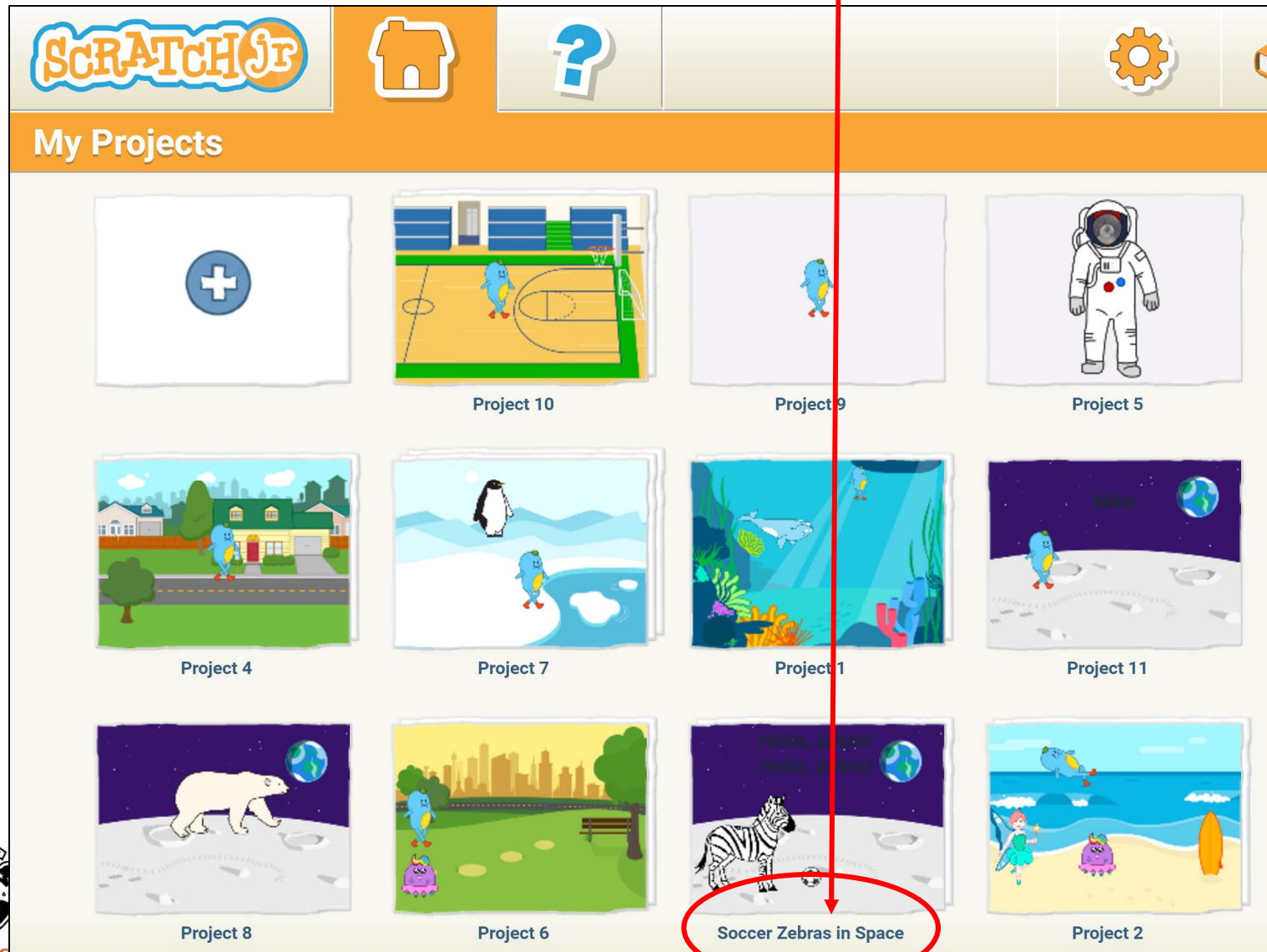


**Clicking on This Little Yellow Tab in the Upper-Right Corner  
Will Allow You to Give Your Program a Title**





# So That Your Home Gallery Has Better Titles than “Project N”



## A Good Scratch Jr. Book

I like this book. It is an easy read and has lots of color pictures of Scratch Jr. examples.

Marina Umaschi Bers and Mitchel Resnick, *The Official Scratch Jr. Book*, No Starch Press, 2016.

Available on Amazon: [https://www.amazon.com/Official-ScratchJr-Book-Help-Learn/dp/1593276710/ref=sr\\_1\\_1?dchild=1&keywords=Official+Scratch+Jr+Book&qid=1621204396&s=books&sr=1-1](https://www.amazon.com/Official-ScratchJr-Book-Help-Learn/dp/1593276710/ref=sr_1_1?dchild=1&keywords=Official+Scratch+Jr+Book&qid=1621204396&s=books&sr=1-1)

Kindle: \$10, Paperback \$20.

