

[classroom.shellyfryer.com](http://classroom.shellyfryer.com/workshops/scratchjr)  
[/workshops/scratchjr](http://classroom.shellyfryer.com/workshops/scratchjr)



SCRATCH JR

29 November 2017

# Helping Students Learn Coding with Scratch Jr. and PBS Kids Scratch Jr.



By Shelly Fryer [@sfryer](https://twitter.com/sfryer)  
[www.shellyfryer.com](http://www.shellyfryer.com)



In September 2016 and September 2017, I taught Saturday Scratch Jr. Workshops for Kids through The Div @thedivorg



**Shelly Fryer** ☕

@sfryer

Passionate about helping kids love learning. Wife of @wfryer #OklaEd 3rd grade teacher @casadyschoolokc @pbslrnmedia Innovator @Seesaw Ambassador @iPadMediaCamp

📍 Oklahoma City, Oklahoma

🔗 [shellyfryer.com/about](http://shellyfryer.com/about)

📅 Joined April 2008

## 3rd Grade Teacher

In September to November 2017, I taught an 8 week after-school class for 2nd - 4th graders on coding with PBS Scratch Jr.



[classroom.shellyfryer.com/workshops/scratchjr](http://classroom.shellyfryer.com/workshops/scratchjr)

# Outline for Today:



1. Why do this?
2. Listen to the Students (explaining what they built with code and learned)
3. How: Suggestions for skill building and projects

Access these slides and  
all referenced resources!

[classroom.shellyfryer.com/workshops/scratchjr](https://classroom.shellyfryer.com/workshops/scratchjr)



# What are Scratch Jr. and PBS Scratch Jr.?

## ScratchJr

Coding for young children

Coding is the new literacy! With ScratchJr, young children (ages 5–7) can program their own interactive stories and games. In the process, they learn to solve problems, design projects, and express themselves creatively on the computer.



[www.scratchjr.org](http://www.scratchjr.org)

# What are Scratch Jr. and PBS Scratch Jr.?



## PBS KIDS ScratchJr - Learning Resources

With PBS KIDS ScratchJr, kids can create their own interactive stories and games featuring their favorite PBS KIDS characters. The storytelling possibilities are endless with this creative coding app for children ages 5-8. Below you can find resources and activities designed for educators to support the use of the app in both formal and informal learning settings.



[pbskids.org/learn/scratchjr/](https://pbskids.org/learn/scratchjr/)

# Why I love teaching students coding with Scratch Jr...

- » Student engagement
- » Self-directed creation (not “mad lib coding”)
- » More complexity
- » Introduces vocabulary
- » Explain what you’ve created







## Why I love teaching students coding with Scratch Jr...

- » Starting with zero coding experience:  
Laying the foundation with basic building blocks
- » Students are the **CREATORS!**



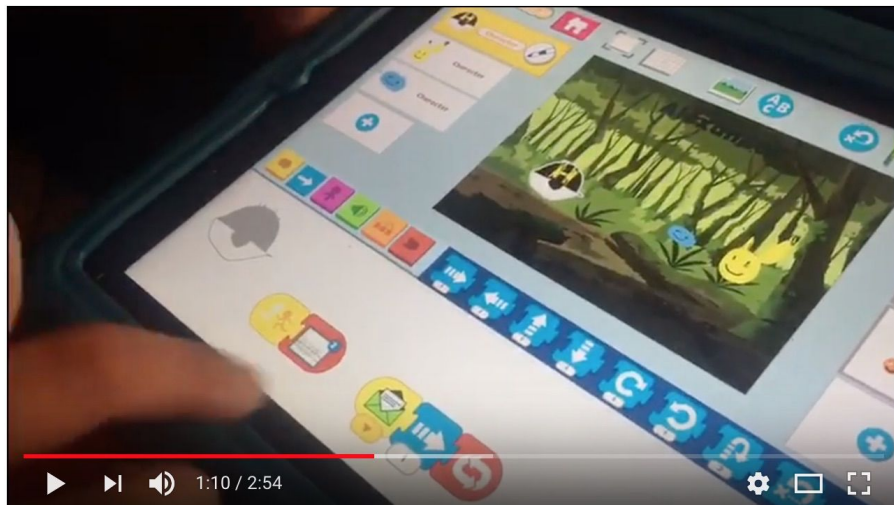


[safeYouTube.net/w/uypc](https://safeYouTube.net/w/uypc)



YouTube

Search



Alexander's Pokemon game [www.youtube.com/watch?v=78e-KG\\_IDRA](https://www.youtube.com/watch?v=78e-KG_IDRA)

No views

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Shelly Fryer

Published on Nov 27, 2017

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# Did you notice?

- Skill and ease navigating within the app (resetting code, using vocabulary)
- Originality and Creativity
- Connections to his own interests, passions, and experiences
- Ability to explain his code and how he copies code

YouTube

Search



Alexander's Pokemon game

No views

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**Mitchel Resnick**  
@mres  
Professor of Learning Research at MIT Media Lab, author of Lifelong Kindergarten, and head of the Scratch Team ([scratch.mit.edu](http://scratch.mit.edu))  
📍 Cambridge, MA  
🌐 [media.mit.edu/~mres](http://media.mit.edu/~mres)

# “Low Bar - High Ceiling”

h/t Mitch Resnik @mres

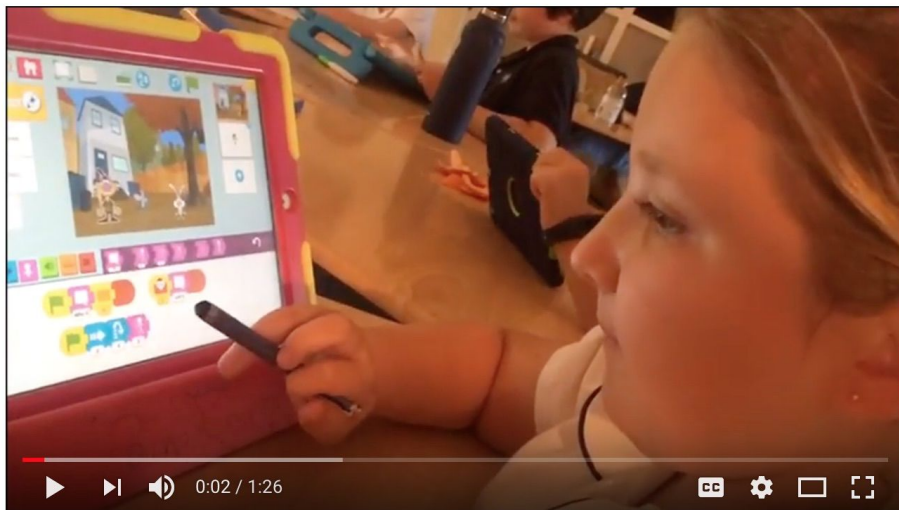


[safeYouTube.net/w/Wypc](https://safeYouTube.net/w/Wypc)



YouTube

Search



Planning Stages of Allison's Adventure

[www.youtube.com/watch?v=ECkrAfnMP7c](https://www.youtube.com/watch?v=ECkrAfnMP7c)

No views

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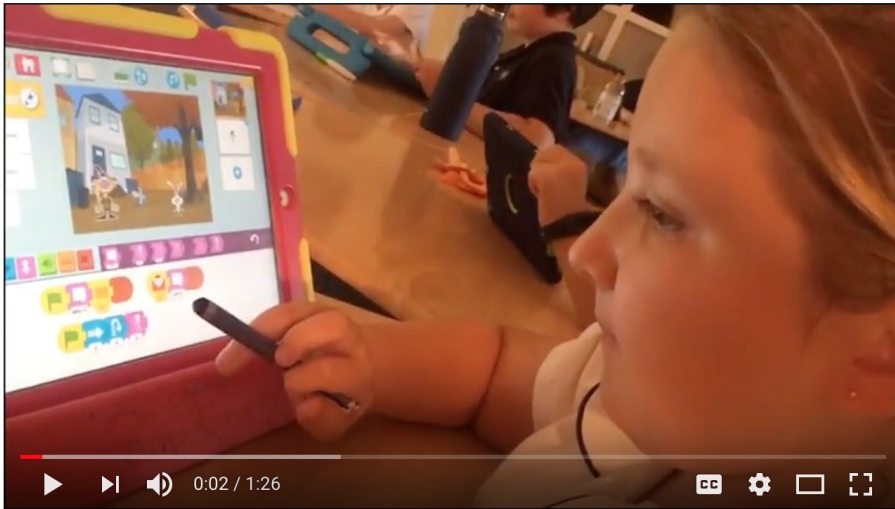


# Did you notice?

- Builds “coding a conversation” skills
- Sending and receiving messages
- Great language arts activity: Learning about beginning, middle & end of a story

YouTube

Search



Planning Stages of Allison's Adventure

No views

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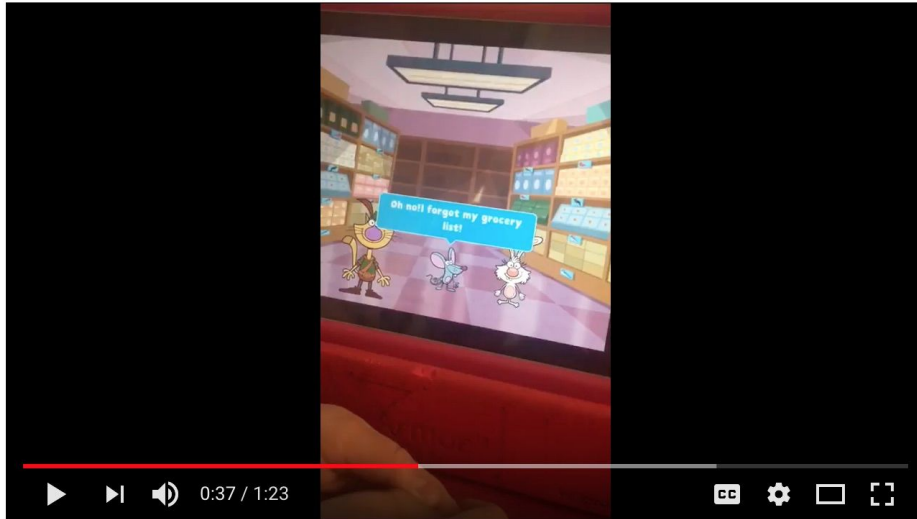
**“Integrating  
coding across the  
curriculum”**

[safeYouTube.net/w/rzpc](https://safeYouTube.net/w/rzpc)



YouTube

Search



Allison's Adventure

No views

[www.youtube.com/watch?v=wwArKbWDDs](https://www.youtube.com/watch?v=wwArKbWDDs)

U | 0 | 0 | SHARE | ...



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# Did you notice?

- Movement, multiple backgrounds, conversation
- Story has beginning, middle and an end
- How she went beyond the basic lesson
- “Hard fun”

YouTube

Search



Allison's Adventure

No views

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Asking students to “read their code” and explain their thinking is essential!



# How: Skill Building & Projects

## Scratch: Imagine, Program, Share

  
Search this site

### ▼ Scratch Camp

April 2016  
July 2012  
June 2012  
March 2013  
May 2016  
May 2017  
Scratch Resources  
September 2016

### September 2017

### Sitemap

### Div Jr

[Learn more about The Div!](#)

Our Scratch Camp is

[sites.google.com/site/divjrscratch/home/september-2017](https://sites.google.com/site/divjrscratch/home/september-2017)  
[Scratch Camp](#) >

## September 2017

These are resources for the [September 16, 2017 PBS Scratch Jr Code Camp](#) in Edmond, Oklahoma, sponsored by [The Div Jr \(@thedivorg\)](#) and led by [Shelly Fryer \(@sfryer\)](#).

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- [6 More Scratch Jr. Resources](#)





# SCRATCH JR



**START**

**▶ HOW TO**

Check out  
“How To”  
on the  
startup  
screen



SCRATCH JR



# The “Blocks Guide” explains different types of blocks

## TRIGGERING BLOCKS

### Start on Green Flag



Starts the script when the Green Flag is tapped.

### Start on Tap



Starts the script when you tap on the character.

### Start on Touch



Starts the script when the character is touched by another character.

### Start on Message



Starts the script whenever a message of the specified color is sent.

### Send Message



Sends a message of the specified color.



About PBS KIDS  
Scratch Jr



Interface Guide



Paint Editor Guide



Blocks Guide



SCRATCH JR



### MOTION BLOCKS

#### Move Right



Moves the character a specified number of grid squares to the right.

#### Move Left



Moves the character a specified number of grid squares to the left.

#### Move Up



Moves the character a specified number of grid squares up.

#### Move Down



Moves the character a specified number of grid squares down.

#### Turn Right



Rotates the character clockwise a specified amount. Turn 12 for a full rotation.

#### Turn Left



Rotates the character counterclockwise a specified amount. Turn 12 for a full rotation.

#### Hop



Moves the character up a

#### Go Home



Resets the character's location

# Motion Blocks



About PBS KIDS Scratch Jr



Interface Guide



Paint Editor Guide



Blocks Guide



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# Looks Blocks

## LOOKS BLOCKS

### Say



Shows a specified message in a speech bubble above the character.

### Grow



Increases the character's size.

### Shrink



Decreases the character's size.

### Reset Size



Returns the character to its default size.

### Hide



Fades out the character until it is invisible.

### Show



Fades in the character until it is fully visible.



About PBS KIDS Scratch Jr



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Blocks Guide





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# Sound Blocks

## Hide



Fades out the character until it is invisible.

## Show



Fades in the character until it is fully visible.

## SOUND BLOCKS

### Pop



Plays a "Pop" Sound

### Play Recorded Sound



Plays a sound recorded by the user.



About PBS KIDS Scratch Jr



Interface Guide



Paint Editor Guide



Blocks Guide



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# Control Blocks

## CONTROL BLOCKS

### Wait



Pauses the script for a specified amount of time (in tenths of seconds).

### Stop



Stops all the characters' scripts.

### Set Speed



Changes the rate at which certain blocks are run.

### Repeat



Runs the blocks inside a specified number of times.



About PBS KIDS Scratch Jr



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# End Blocks

## END BLOCKS

### End



Indicates the end of the script (but does not affect the script in any way).

### Repeat Forever



Runs the script over and over.

### Go to Page



Changes to the specified page of the project.



About PBS KIDS Scratch Jr



Interface Guide



Paint Editor Guide



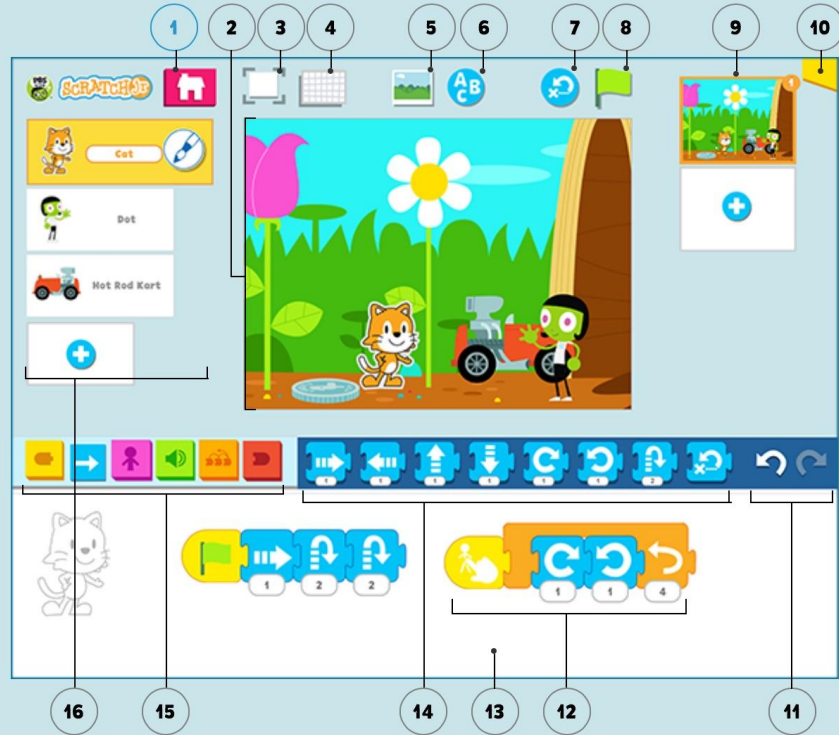
Blocks Guide



SCRATCHJR



Build vocabulary: characters, stage, green flag, pages, blocks, etc.



1 | Save  
Save the current project and exit to the Home page.

[www.scratchjr.org/learn/interface](http://www.scratchjr.org/learn/interface)



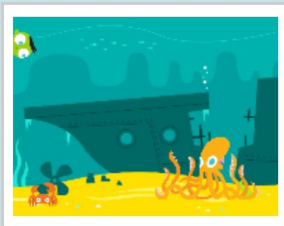
SCRATCHJR



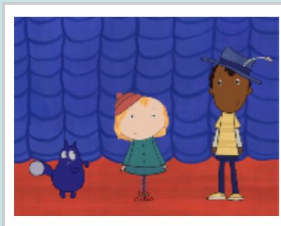
## Quick Intro to PBS KIDS ScratchJr



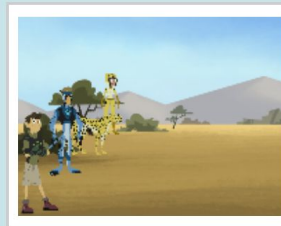
### Story Starters



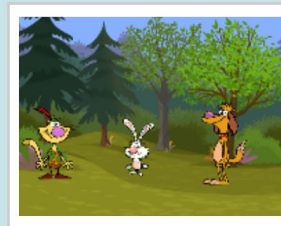
**Under the Sea**



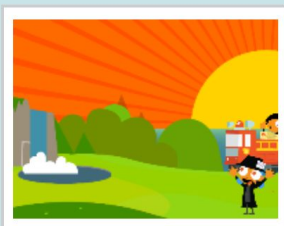
**Showtime!**



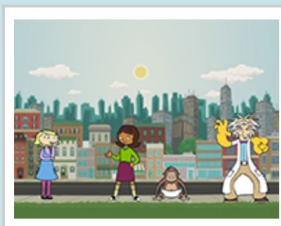
**Cheetah Race**



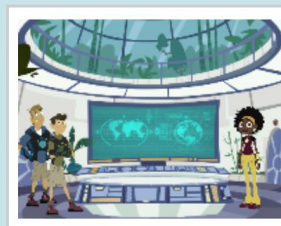
**Tag!**



**Polar Bear Quest**



**Becky's Dilemma**



**Creature Rescue**



**Nature Adventure**

Tap the  
“light  
bulb” for  
Story  
Starters

# Recommended Skill Progression and Project Sequence





# Introduction to PBS Scratch Jr.

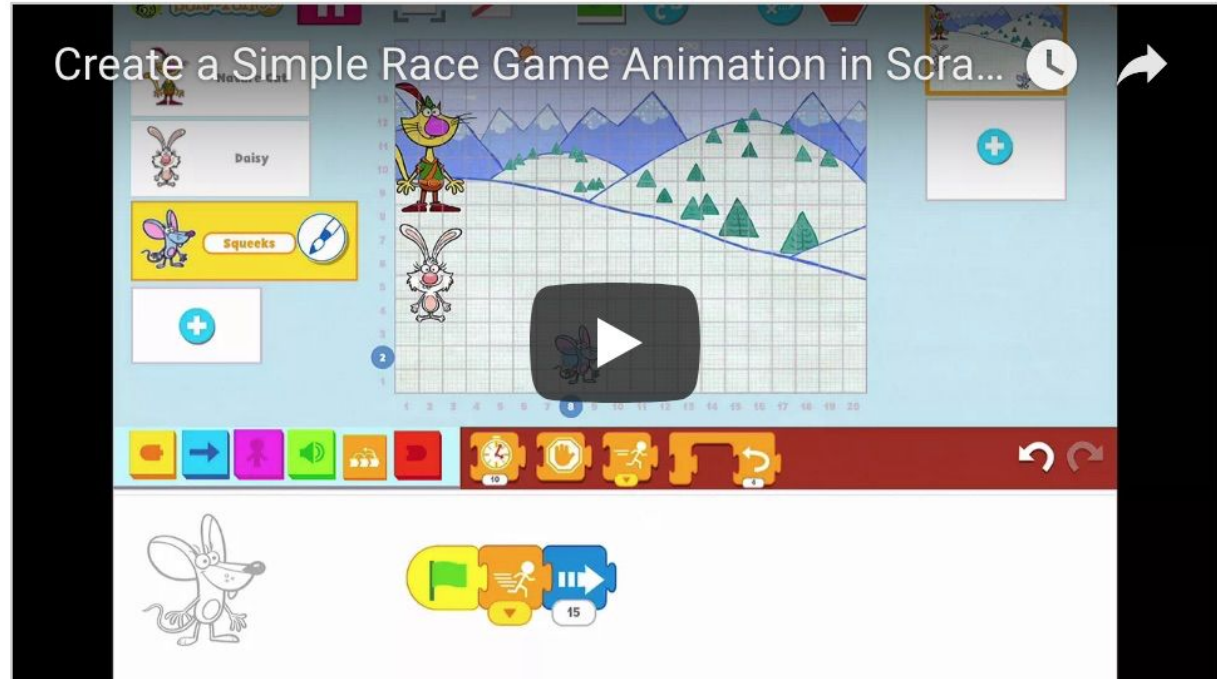


[An introduction video for the "regular" Scratch Jr app is also available.](#)



# Activity 1: Simple Animation

## [Race Game Animation](#)



[Learn to create an animated math flashcard in Scratch Jr.](#)

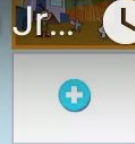
## Activity 2: [Moving Game](#)

Download [a finished example of this "Moving Game" to your tablet](#) and open it in the PBS Scratch Jr. app. Then show it to students FIRST before showing the videos.



## Activity 3: Story Project

Creating a Conversation in the PBS Scratch Jr...



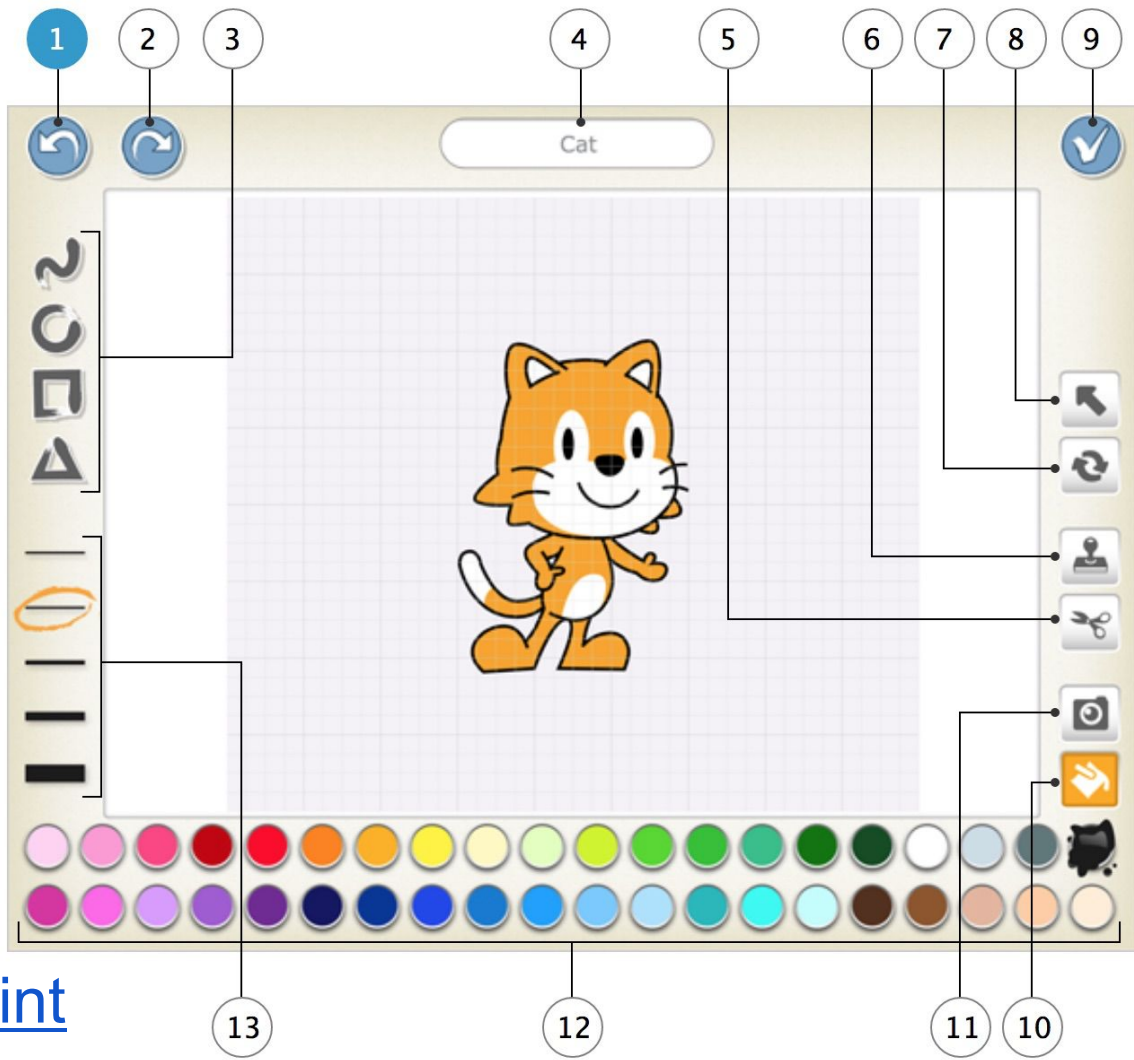
Additional Video Tutorials are:

1. [Coding: Creating a Conversation \(Scratch Jr\)](#)
2. [Building a Dialog in Scratch Jr](#)

[Conversation Project: Make Your Characters Talk! \(PDF\)](#)



**Provide time for students to explore and create in the Scratch Jr. "Paint Editor"**



[www.scratchjr.org/learn/paint](http://www.scratchjr.org/learn/paint)

# Activity 4: Maze Game







PBS ScratchJr Passion Project (4th grade) [www.youtube.com/watch?v=uXAA9AZtcK0](https://www.youtube.com/watch?v=uXAA9AZtcK0)

154 views

👍 1    💬 0    ➦ SHARE    ≡    ⋮



**Mrsfryer**  
Published on Jun 25, 2016

SUBSCRIBED 37





# Did you notice?



PBS ScratchJr Passion Project (4th grade)

154 views



Mrsfryer  
Published on Jun 25, 2016

SUBSCRIBED 37



- How he read his code like reading a paragraph
- How proud he was of the complexity of his code
- This project took time!
- His coding skills translate to other apps



# Lots of Additional Resources!



The screenshot shows the Scratch Jr website's navigation menu with the following items: About, Learn, Teach (selected), Outreach, and Donate. Below the menu are three main resource categories: Activities (with a flag icon), Curricula (with a book icon), and Assessments (with a clipboard icon). The 'Activities' section is expanded, showing a list of activities. The first activity is 'Introduction', which includes a video thumbnail with the Scratch Jr logo and a question mark icon, and a description: 'Watch this video for a brief introduction to Scratch Jr's interface... [See more](#)'. Below this are two more activity thumbnails: '1 Drive Across the City' (showing a city skyline) and '2 Run a Race' (showing a pig in a field).

[www.scratchjr.org/teach/activities](http://www.scratchjr.org/teach/activities)

# Lots of Additional Resources!

## ACTIVITIES

### Tree Problem

Help rescue PEG + CAT from a tree

### Creature Powers

Animate animal traits with the WILD KRATTS

### Something Odd

Solve odd problems with coding and creativity

### Space Exploration

Create an adventure with READY JET GO!

### How Plants Grow

Grow a digital garden with NATURE CAT

### Becky's Choice

Explore cause and effect with WORDGIRL

### Story Mash-up

Create a mash-up with PBS KIDS characters

[pbskids.org/learn/scratchjr/](https://pbskids.org/learn/scratchjr/)





**You can do  
this!  
Your  
students  
will help &  
will LOVE  
coding with**



[classroom.shellyfryer.com](http://classroom.shellyfryer.com/workshops/scratchjr)  
[/workshops/scratchjr](http://classroom.shellyfryer.com/workshops/scratchjr)



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