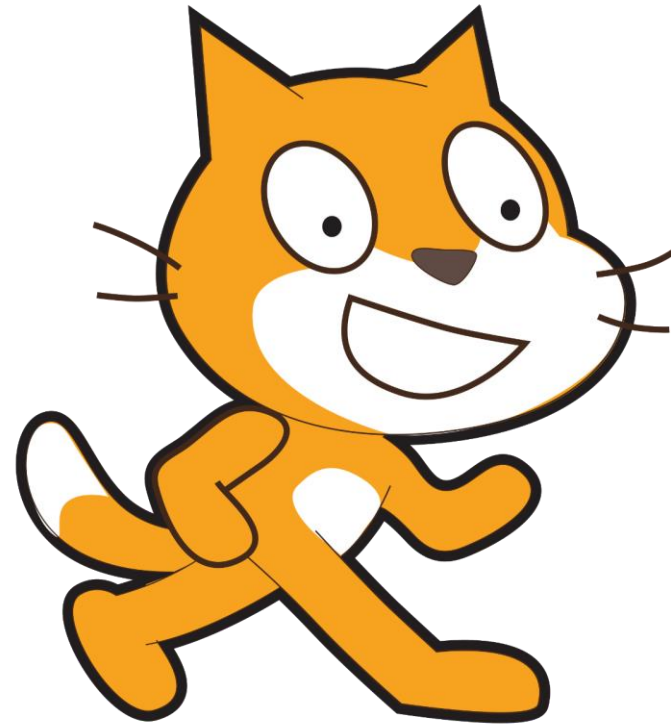


SCRATCH



AN INTRODUCTION

Rick Botero, Eagle Ridge Elementary School
Elaan Bauder, Kwayhquitlum Middle School

What is Scratch?



- Scratch is a programming language and an online community where children can program and share interactive media such as stories, games, and animation
- It was built on top of the Squeak environment developed by Alan Kay and colleagues
- First released 2003
- It has origins at Apple and Disney... it was made specifically for children
- It is object-oriented and event driven

Why do we love Scratch?

- It's easy to learn
- It makes sense / is logic-based
- Tons of resources
- Many connections to the curriculum
- Kids (and adults) enjoy it!

Online Sample Projects

Starter Projects

Try out these starter projects from the Scratch Team. Look inside to make changes and add your ideas.

[Animation](#)

[Games](#)

[Interactive Art](#)

[Music and Dance](#)

[Stories](#)

[Video Sensing](#)

Animation



Dance Party



Animate the Crab

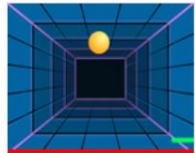


The Pico Show: Intro



Greeting Card

Games



Pong Starter



Maze Starter



Hide and Seek



Dress Up Tera

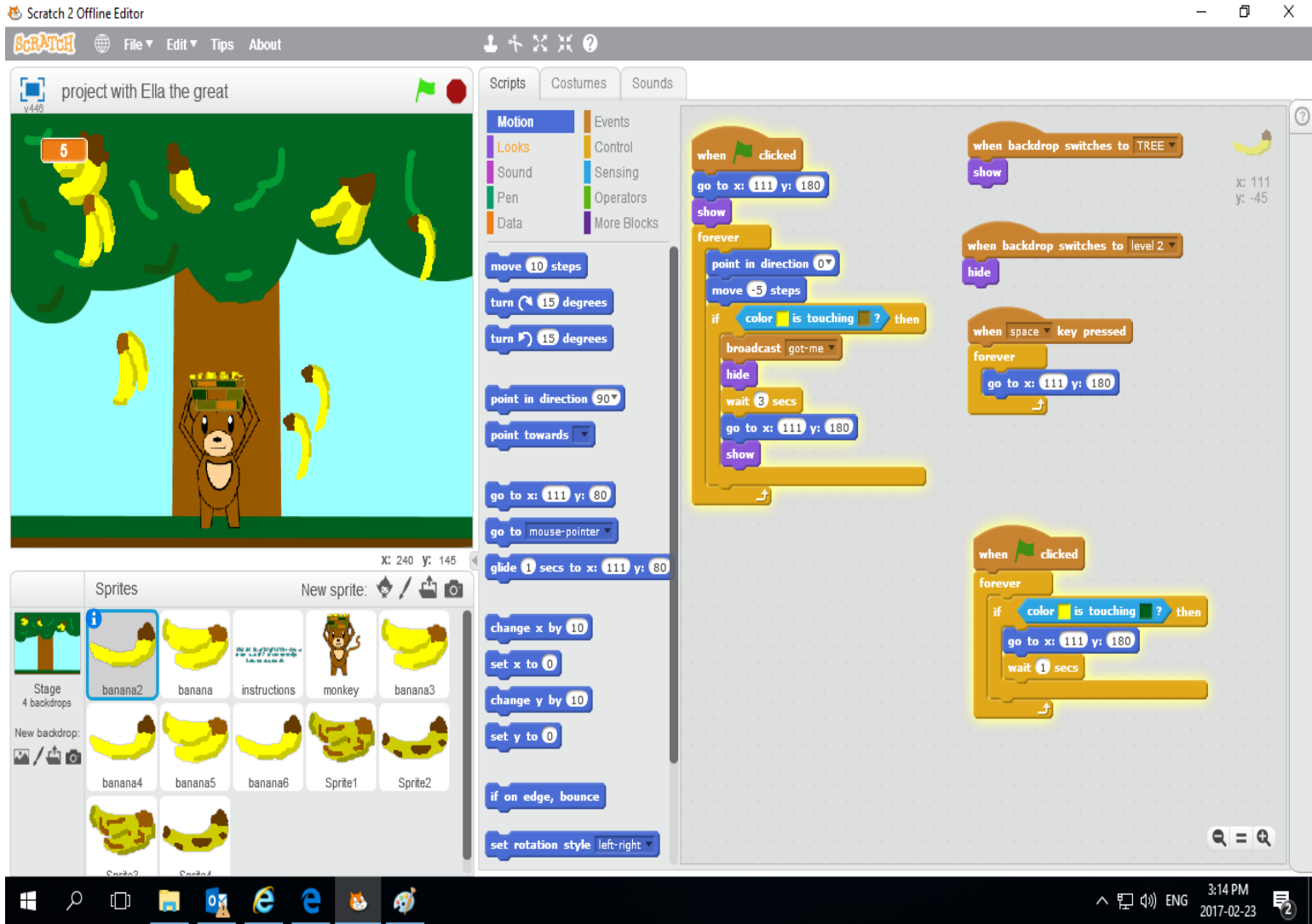
- scratch.mit.edu
- Click “See Examples”





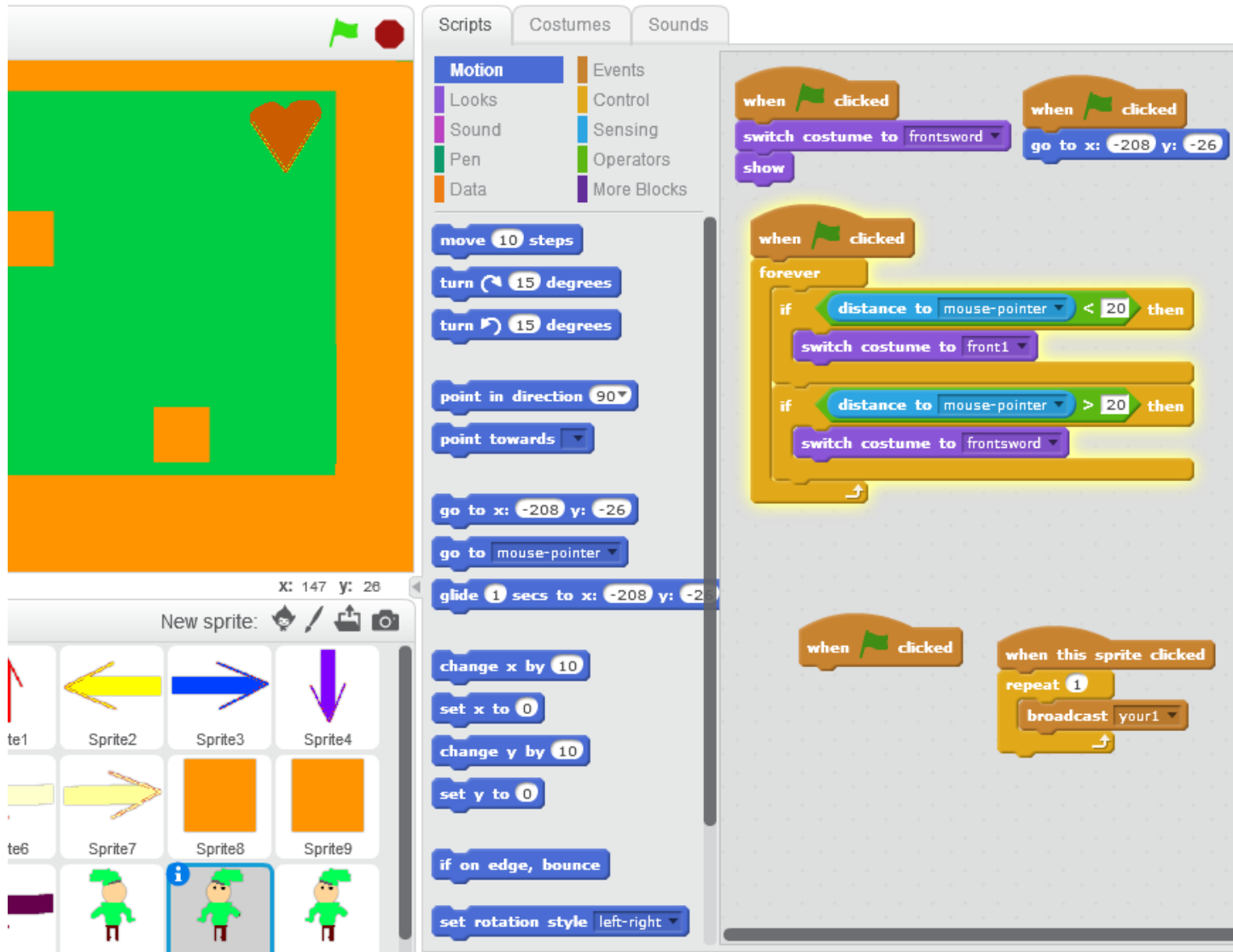
Sample Game – Fish Chomp

- Grade 4/5
- Rick's creation, adapted from various Scratch community projects
- Interactive game without a score or a way to "lose"



Sample Game – Banana Catch

- Grade 6/7
- Interactive game with a score and/or timer
- A way to “win” and a way to “lose”



Sample Story – Quest

- Grade 6/7
- Interactive story with choices and different consequences
- Like a “choose your own adventure” story with more action

Versions

Online version

- scratch.mit.edu
- save by
 - (a) Creating a free account, or
 - (b) Downloading / uploading files to your computer

Offline version

- needs 2 programs installed
 - Adobe Air
 - Scratch 2 Offline Editor (<https://scratch.mit.edu/scratch2download/>)
- save by
 - Save a local copy to your network folder or hard drive

* Both the online version and the offline version (Scratch 2) are exactly the same and files are interchangeable. The only difference is in how the user saves their files.

* Both Rick and Eiaan prefer to use the offline version with students

Core Competency “I Can” Statements

Communication:

- I can work with others to achieve a common goal; I do my share
- I can take on roles and responsibilities in a group
- I give, receive, and act on feedback

Critical Thinking:

- I can explore materials and actions
- I can consider more than one way to proceed in an investigation
- I can experiment with different ways of doing things
- I can monitor my progress and adjust my actions to make sure I achieve what I want
- I can make choices that will help me create my intended impact on an audience or situation

Creative Thinking:

- I can get new ideas or build on other people’s ideas, to create new things within the constraints of a form, a problem, or materials
- I can build on others’ ideas and add new ideas of my own, or combine other people’s ideas in new ways to create new things or solve straightforward problems
- I can make my ideas work or I change what I am doing
- I can build the skills that I need to make my ideas work, and usually succeed, even if it takes a few tries
- I can use my experiences with various steps and attempts to direct my future learning
- I can persevere (over years if necessary) to develop my ideas. I expect ambiguity, failure, and setbacks, and use them to advance my thinking

ADST Curriculum Connections - Samples

ADST Website:

<https://curriculum.gov.bc.ca/curriculum/applied-design-skills-and-technologies/introduction>

K – Competency – Ideating – add to others' ideas

K – Competency – Making – Make a product using known procedures or through modelling of others

K – Competency – Making – Use trial and error to make changes, solve problems, or incorporate new ideas from self or others

K – Competency – Ideating – add to others' ideas

K – Competency – Making – Make a product using known procedures or through modelling of others

K – Competency – Making – Use trial and error to make changes, solve problems, or incorporate new ideas from self or others

Grade 1 – Big Idea – Skills can be developed through play

Grade 1 – Competency – Develop skills and add new ones through play and collaborative work

Grade 3 – Competency – Sharing – Reflect on ability to work effectively both as individuals and collaboratively in a group

Grade 4 – Big Idea – Skills are developed through practice, effort, and action

Grade 4 – Big Idea – Designs can be improved with prototyping and testing

Grade 4 – Competency – Testing – Make changes and test again, repeating until satisfied with the product

Grade 4 – Competency – Prototyping – Outline a general plan, identifying tools and materials

Grade 4 – Competency – Prototyping – Construct a first version of the product, making changes to tools, materials, and procedures as needed

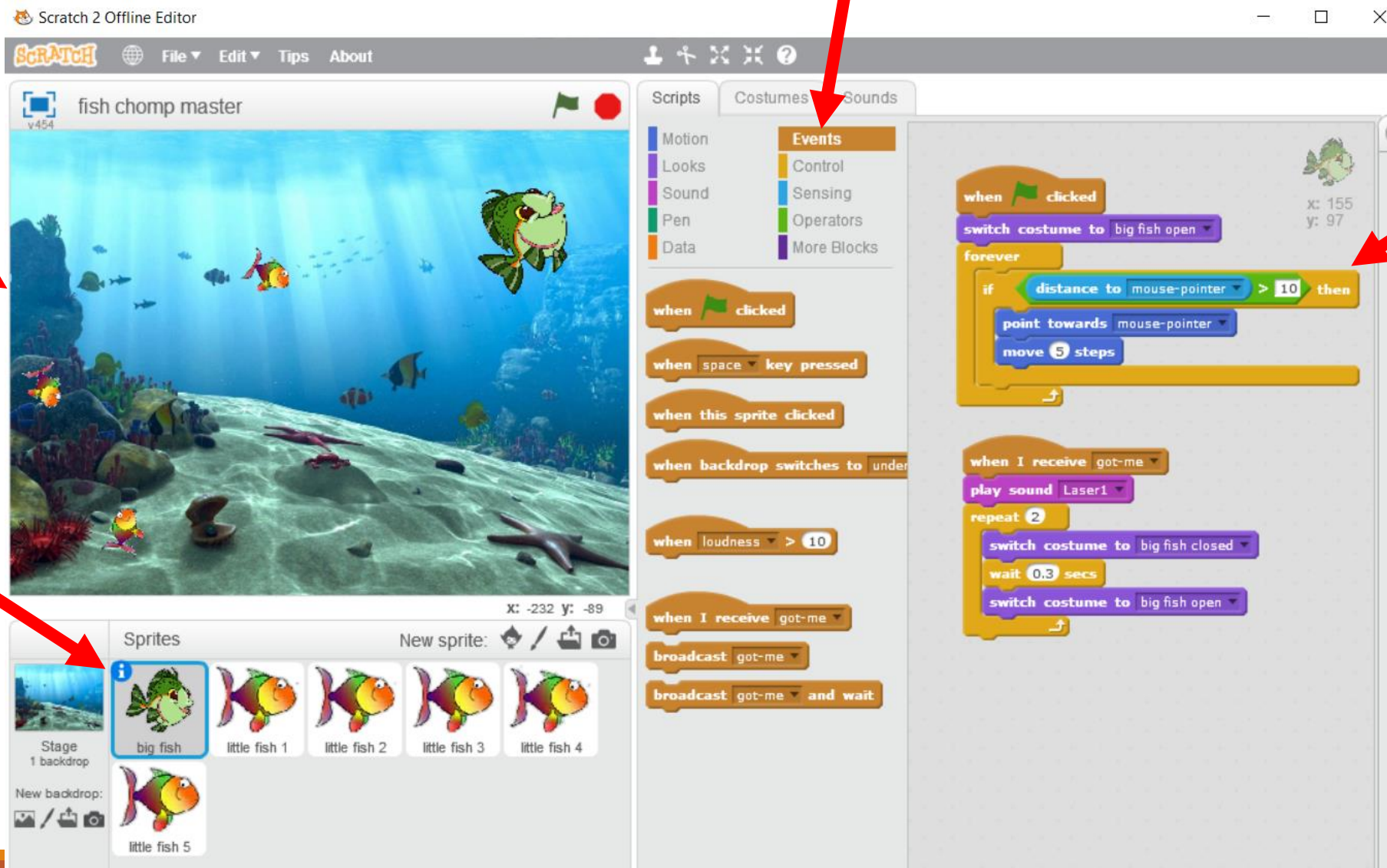
Screen Layout

Block Palette

Stage

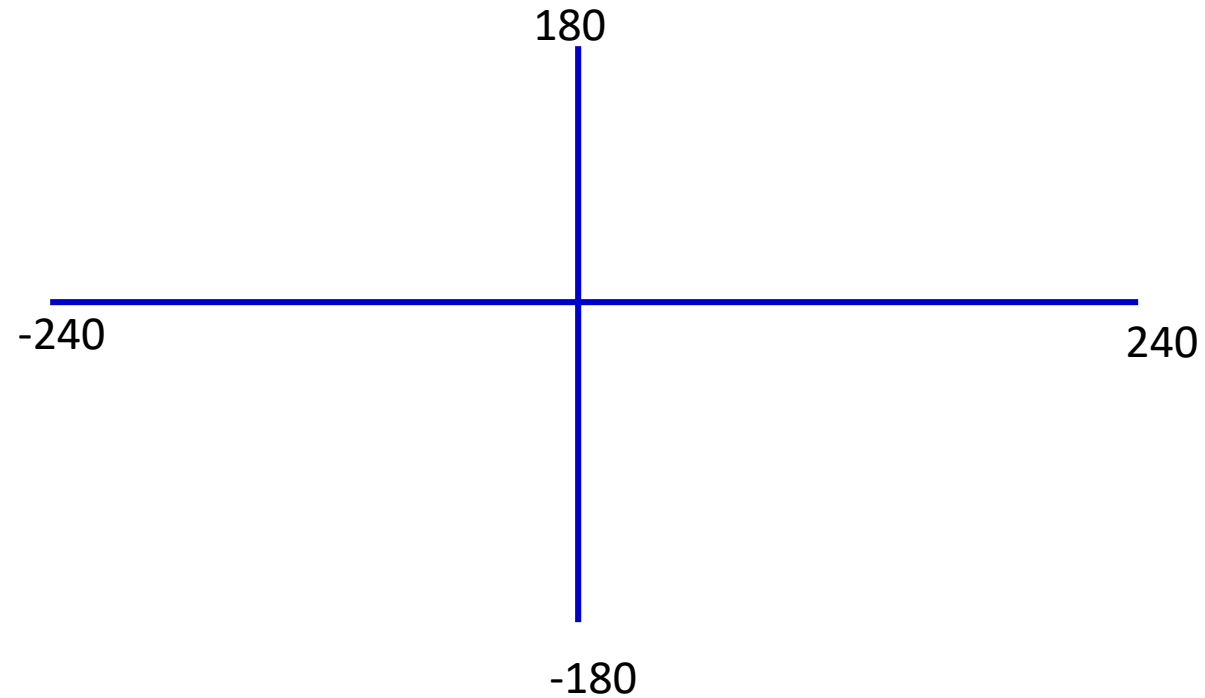
Sprites

Scripts

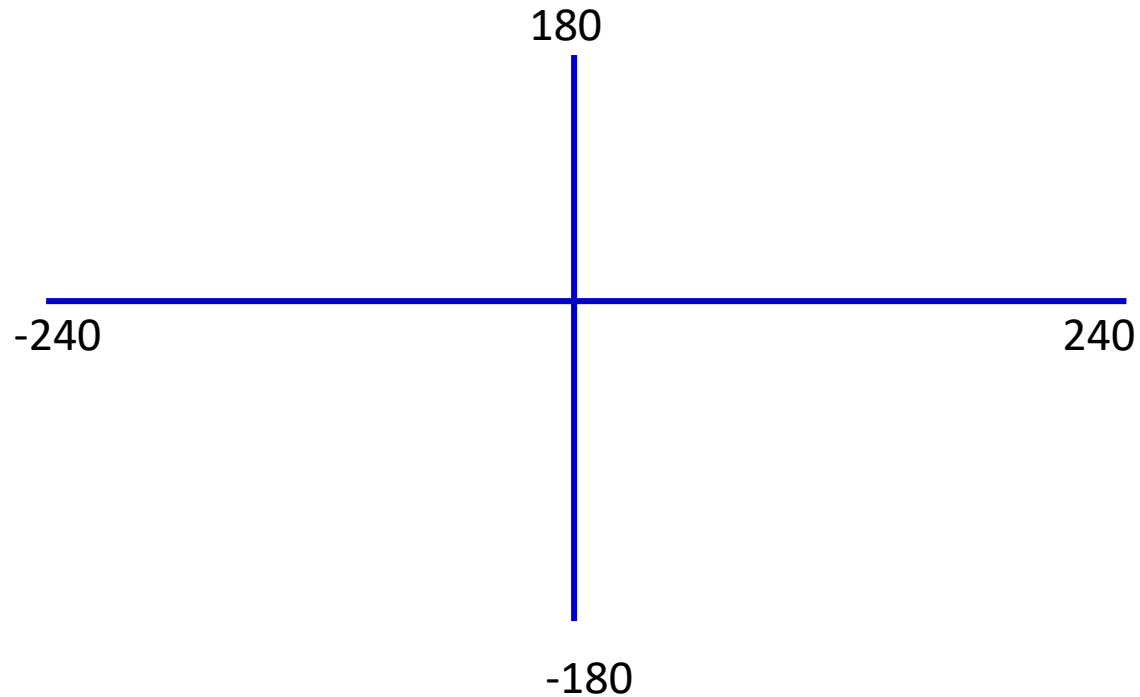


Stage

The Scratch stage is 480 pixels wide and 360 pixels high.

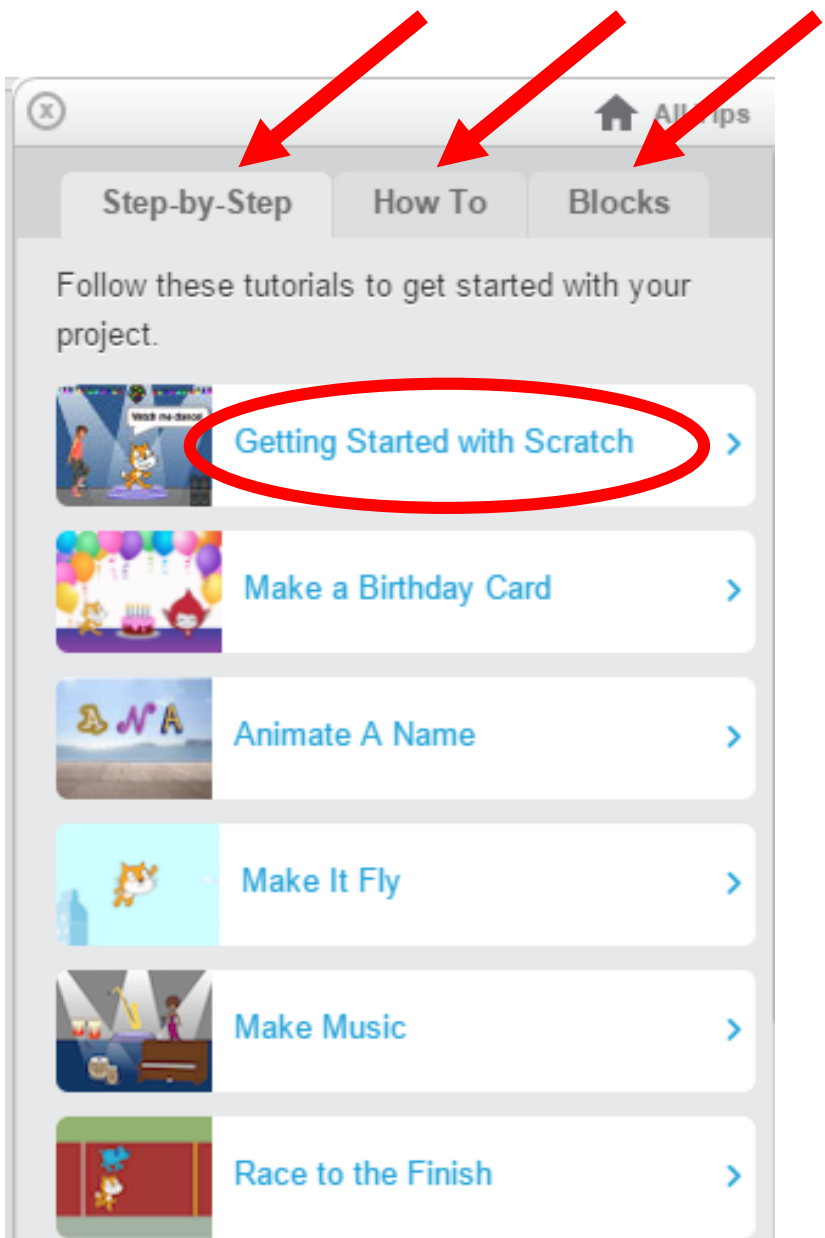


Stage



Lots of connections to Math:

- Integers
- Graphing
- X and Y co-ordinates
- Number lines
- Estimating
- Etc.



Scratch Tutorials

- Online / Offline
- Look for the ?
 - Step-by-Step Tutorials
 - How To
 - Blocks
- Tutorial #1: Getting Started with Scratch

Sources

<http://logos.wikia.com/wiki/Scratch>

[https://en.wikipedia.org/wiki/Scratch \(programming language\)](https://en.wikipedia.org/wiki/Scratch)

<http://coweb.cc.gatech.edu%2Fice-gt%2Fuploads%2F446%2FIntroScratch-short.ppt>

Michelle Venables Foster