

SCRATCH



AN INTRODUCTION

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What is Scratch?

Scratch is a free programmable toolkit that enables kids to:

- create their own games, animated stories, and interactive art
- share their creations with one another over the Internet

What is Scratch?

- It is a programming language 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.

What is Scratch?

- Scratch is now being developed by the [Lifelong Kindergarten](#) research group at the [MIT Media Lab](#), in collaboration with [KIDS research group](#) at the UCLA Graduate School of Education & Information Studies.

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
 - (

* 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 Elaan prefer to use the offline version with students

Online Sample Projects

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



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

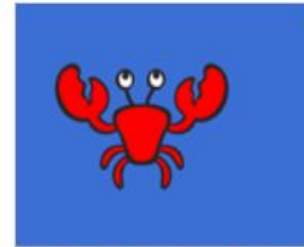
Stories

Video Sens

Animation



Dance Party



Animate the Crab

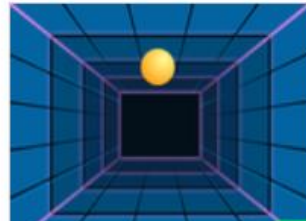


The Pico Show: Intro



Greeting Card

Games



Sample – Fish Chomp

- Eagle Ridge Gr4/5
- Rick's creation, adapted from various Scratch community projects



Sample – Interactive Game

The screenshot displays the Scratch development environment for a game titled "save_evryone". The stage features a green field with orange obstacles and a red heart. Two characters are visible on the left. The script editor shows several scripts for a green flag clicked event:

- Script 1: switch costume to frontsword, show
- Script 2: go to x: -208 y: -26
- Script 3: A "forever" loop containing:
 - if distance to mouse-pointer < 20 then: switch costume to front1
 - if distance to mouse-pointer > 20 then: switch costume to frontsword
- Script 4: when this sprite clicked: repeat 1: broadcast your1

The "Motion" category in the script editor includes blocks such as: move 10 steps, turn 15 degrees, point in direction 90, point towards, go to x: -208 y: -26, go to mouse-pointer, glide 1 secs to x: -208 y: -26, change x by 10, set x to 0, change y by 10, set y to 0, if on edge, bounce, and set rotation style left-right.

- Kway Gr6/7

Sample – Interactive Story

- Kway Gr6/7

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

Social Responsibility:

- With some support, I can be part of a group. I am kind to others, can work or play cooperatively, and can build relationships
- I can identify when others need support and provide it

Personal Awareness and Responsibility:

- I can show a sense of accomplishment and joy
- I celebrate my efforts and accomplishments
- I can persevere with challenging tasks
- I can implement, monitor, and adjust a plan and assess the results

ADST Curriculum Connections

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

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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

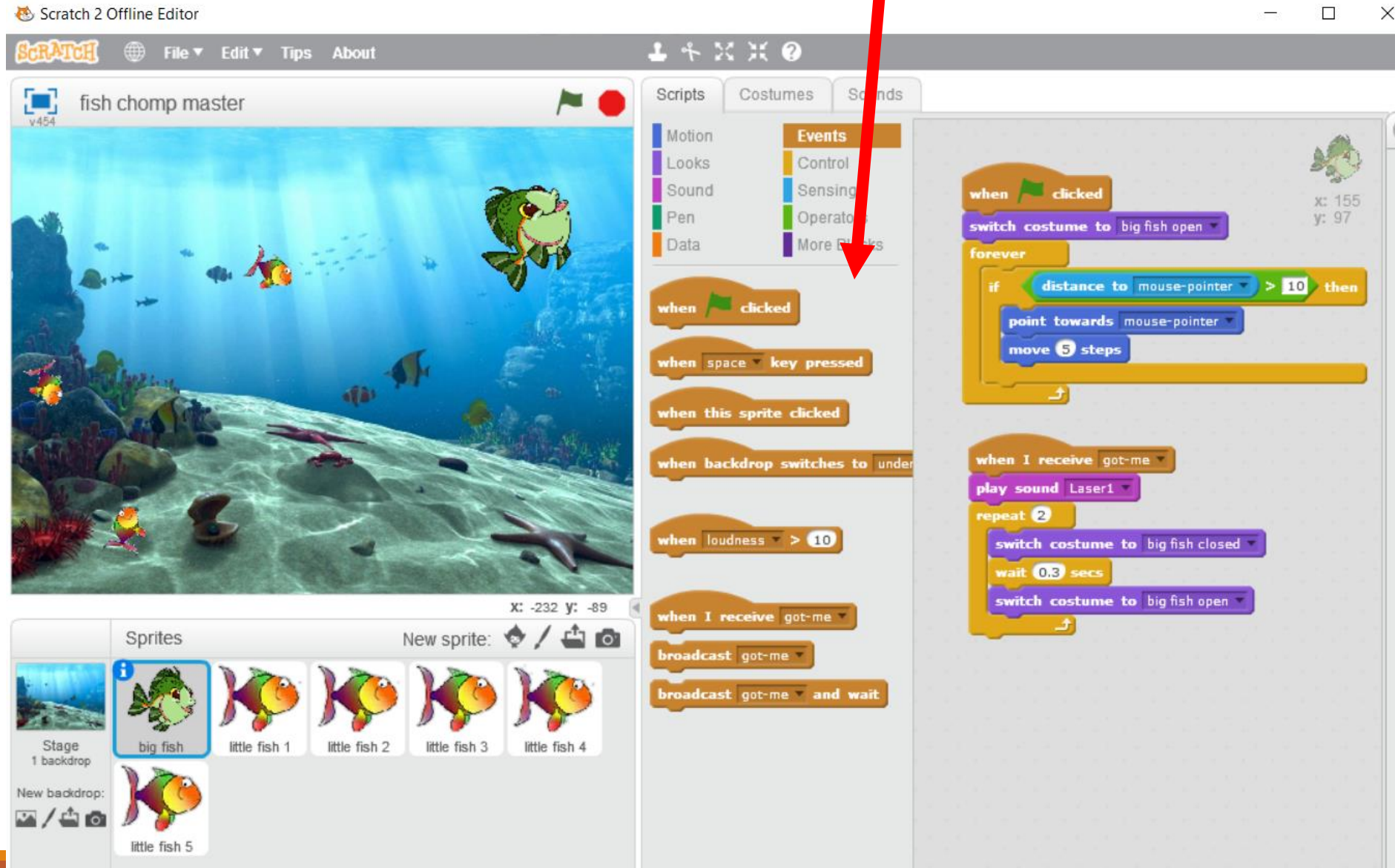
Screen Layout

Block Palette

Stage

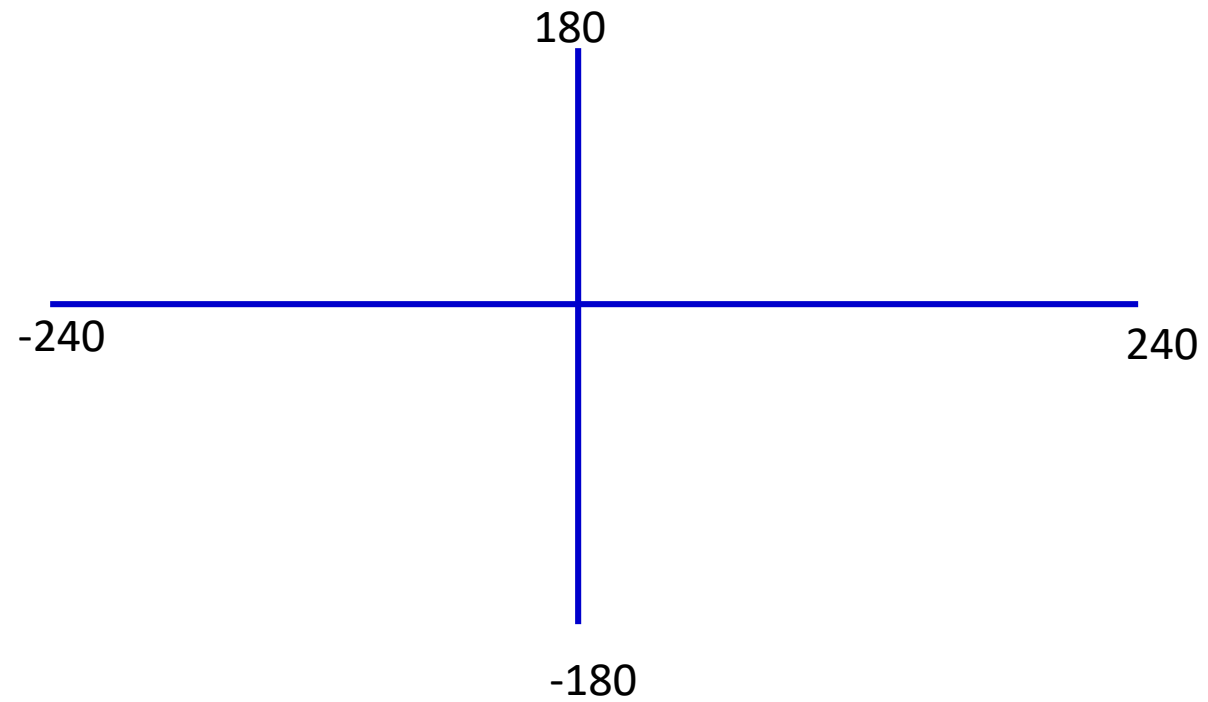
Scripts

Sprites



Stage

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



Scratch Tutorials

- A great way for students to begin
- scratch.mit.edu / Help / Video Tutorials
- Suggest 2 windows side by side

scratch.mit.edu

Help



Video Tutorials

Scratch Guides

Here are some guides to help you learn Scratch:



Getting Started Guide

This step-by-step guide (PDF) provides an easy introduction to Scratch.

Download the [English version](#).



Scratch Cards

Each of these cards shows something you can do in Scratch.



Video Tutorials

These videos include tips on using the paint editor, and introduce how to program games and animations in Scratch.

Sources

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

<https://en.wikipedia.org/wiki/Scratch> (programming language)

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

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