

Unit: Intro to JS: Drawing & Animation

Lessons

Intro to programming

Drawing basics

Coloring

Variables

Projects completed

Project: Bookshelf

2 days ago

Project: Build-a-House

8 days ago

Project: Magic 8-Ball

17 days ago

Project: Animal attack

2 months ago

Project: What's for dinner?

2 months ago

Project: Make it rain

5 days ago

Project: Ad design

8 days ago

Project: Fish tank

a month ago

Project: Shooting star

2 months ago

Intro to programming

If you're new here, watch our intro video and get a brief tour of our programming course. Then get coding!

Learn



What is Programming?



Learning programming on Khan Academy

Drawing basics

We'll show you the basics of programming and how to draw shapes.

Learn



Making drawings with code



Quick tip: number scrubbing



Challenge: Simple snowman



Drawing more shapes with code



Challenge: Waving snowman

Coloring

We'll show you how to color and outline your shapes!

Learn



Coloring with code



Quick tip: color picking



Challenge: Sunny snowy day



The Power of the Docs



Project: What's for dinner?

Variables

We'll cover how to use variables to hold values, animate your drawings, and more.

Learn



Intro to Variables



Challenge: Bucktooth Bunny



More on Variables



Challenge: Funky Frog



Review: Variables

Practice



Using variables

100%

September 19th

Animation basics

Learn how to animate your drawings.

Learn



What are animations?



Making animations



Challenge: Exploding Sun



Incrementing shortcuts



A shorter shortcut



Challenge: Parting Clouds



Project: Shooting star

Interactive programs

Learn how to make programs that draw shapes based on the mouse location, like painting apps.

Learn



Mouse Interaction



Challenge: Tasty Tomato



Challenge: Mouse movement mania

Becoming a community coder

Learn how to help your peers on their path to learning programming and how to ask for help yourself.

Learn



Evaluate peer projects



Ask for help

Bonus: Resizing with variables

Learn how to use variable expressions to resize parts of your drawing relative to other parts. (This requires a bit more math, so if you don't feel you have a good grasp of fractions yet, you can skip over this.)

Learn



Using math expressions in JS



Resizing shapes with variable expressions



Challenge: Brown bear eyes



Project: Animal attack

Practice



Using variable expressions

100%

September 20th

Text and strings

Learn how to display text on the canvas, resize it, color it, and animate it.

Learn



Terrific Text: Part One



Challenge: My Favorite Foods



Terrific Text: Part Two



Challenge: Mouse Tracker



Review: text and strings



Project: Ad design

Functions

Make your code more re-usable by grouping it into functions, and then make those functions accept parameters and return values.

Learn



Functions



Challenge: Say Your Name



Function Parameters



Challenge: Moles in Holes



Function Return Values



Challenge: Calculator



Local and Global Variables



Special ProcessingJS functions



Review: Functions



Project: Fish tank

Logic and if Statements

Teach your program to make decisions!

Learn



If Statements



Challenge: Bouncy Ball



More Mouse Interaction



Challenge: Your First Painting App



Booleans



Challenge: Number Analyzer



Logical Operators



Challenge: Your First Button



Challenge: Smarter Button



If/Else - Part 1



Challenge: Flashy Flash Card



If/Else - Part 2



Review: Logic and if Statements



Random numbers



Project: Magic 8-Ball

Debugging programs

How can you figure out what's wrong with your code? Learn tips and tricks for debugging your programs.

Learn



Debugging with printin\js



More debugging tips

Looping

Repeating something over-and-over? Loops are here to help!

Learn



Intro to While Loops



Challenge: A Loopy Ruler



More While Loops: Balloon Hopper



Challenge: A Loopy Landscape



For Loops! A New Kind of Loop



Challenge: Lined Paper



Nested For Loops



Review: Looping



Project: Build-a-House

Practice



Using while loops

100%

September 28th

Writing clean code

Learn how to write JavaScript code that is easy to read and understand, with good use of indentation, spacing, naming, and comments.

Learn



Readable Code



Clarifying with Comments

Practice



Writing clean code

100%

October 1st

Arrays

Store multiple values in your variables with arrays!

Learn



Intro to Arrays



Challenge: Favorite Fruits



Looping through Arrays



Challenge: Favorite Animals



Modifying Arrays



Challenge: Constellation Maker



Review: Arrays



Project: Make it rain

Objects

Learn how to store complex data in objects.

Learn



Intro to Objects



Challenge: Recipe Card



Modifying Objects



Challenge: Picture Painter



Arrays of Objects



Challenge: Movie Reviews



Review: Objects



Project: Bookshelf

Object-Oriented Design

How to use object-oriented concepts in JavaScript to make more re-usable code.

Learn



Object Types



Challenge: Double Rainbow



Object Methods



Challenge: SmileyFace



Object Inheritance



Challenge: Flower Grower



Review: Object-Oriented Design

Becoming a better programmer

Now that you understand the basics of programming, learn techniques that will help you be more productive and write more beautiful code.

Learn



Planning a programming project



Planning with pseudo-code



What to learn next



Help others learn!

About this unit

Learn how to use the JavaScript language and the ProcessingJS library to create fun drawings and animations.