





Curriculum Guide

Platform			Curated Unplugged Lessons
Grades	K-2nd	3rd - 6th	K-6th
Prerequisites	None	None	None
Devices/OS	Tablets or Chromebooks	Windows, Mac, Chromebooks, or Raspberry Pi	None
Number of Projects	52	40	100+
Overview	Young coders create a variety of fun and interesting projects while learning the foundation of coding concepts and practices using a simplified, block-based coding platform.	Coders learn coding concepts and practices by creating interest-driven coding projects using a block-based coding platform.	A curated collection of over 100 unplugged lessons that teach core computational concepts and practices without using devices.
Lesson features	<ul style="list-style-type: none"> - Detailed lesson plans - Model projects - Variety of assessments and reflections - Debugging exercises - Video guides 	<ul style="list-style-type: none"> - Detailed lesson plans - Model projects - Variety of assessments and reflections - Debugging exercises - Video and presentation guides designed for self-paced learning 	<ul style="list-style-type: none"> - 100+ lessons for elementary coders

Grades K-2 Project Alignment and Outlines (ScratchJr)

In this sequence of projects for ScratchJr, we gradually introduce a variety of practices and concepts while simultaneously introducing young coders to a variety of blocks and tools in ScratchJr. Each project is aligned with the algorithms and programming standards developed by the [Computer Science Teachers Association](#) (CSTA). Below is a summary of the standards embedded within at least one of the projects, as well as a description of each project that may take several classes to complete. Click a link to preview each project or watch an overview video for [projects 1-10 \(1:33\)](#), [projects 11-20 \(1:48\)](#), [projects 21-30 \(1:50\)](#), [projects 31-40 \(2:01\)](#), and [projects 41-52 \(2:34\)](#).

1A-AP-08 Algorithms	1A-AP-09 Variables	1A-AP-10 Sequence	1A-AP-11 Decompose	1A-AP-12 Plan	1A-AP-13 Attribution	1A-AP-14 Debug	1A-AP-15 Describe
✓		✓	✓	✓		✓	✓

[Project 1 - Dancing Alone.](#) In this introductory lesson, coders create a silly dance for Scratch Cat using motion blocks. The purpose of this lesson is to introduce young coders to creating algorithmic sequences in ScratchJr.

[Project 3 - Dance Party.](#) Coders use the start on green flag block to create a silly dance party using motion blocks. The purpose of this project is to introduce young coders to adding sprites in code and triggering algorithms with the green flag in ScratchJr.

[Project 5 - Under the Sea.](#) Coders review how to use repeat forever blocks with looks and control blocks to create a different simulated environment. The purpose of this project is to continue applying understanding from the previous project to trigger new blocks and block combinations with the green flag.

[Project 7 - Outer Space.](#) Coders use a variety of blocks and sprites to create their own interactive diorama on outer space. The purpose of this project is to continue applying understanding from previous projects.

[Project 9 - Musical Instruments.](#) Coders will trigger sound blocks to play a musical instrument made out of different sprites. The purpose of this project is to review creating sprites and triggering sound blocks when a sprite is tapped. Another purpose of this project is to also introduce remixing.

[Project 11 - Dance Fever.](#) Coders will use the start on bump block to create a contagious dance party using motion blocks. The purpose of this project is to

[Project 2 - Can't Stop Dancing.](#) Coders use the repeat block to repeat a silly dance for Scratch Cat using motion blocks. The purpose of this project is to introduce young coders to repeating algorithmic sequences in ScratchJr.

[Project 4 - Starry Night.](#) Coders learn how to use repeat forever blocks with looks and control blocks to create a simulated environment. The purpose of this project is to introduce new blocks and block combinations that are triggered with the green flag.

[Project 6 - Fidget Spinner.](#) Coders create their own fidget spinner sprite using the paint editor and motion blocks to animate their fidget spinner when they press the start on tap trigger. The purpose of this project is to introduce coders to creating their own sprites and the start on tap trigger.

[Project 8 - Animal House.](#) Coders use a variety of blocks and sprites to create their own interactive diorama about animals on a farm. The purpose of this project is to introduce coders to the sound blocks.

[Project 10 - Randomized Synthesis Project.](#) Coders storyboard a project based on randomized idea(s) and create a project based on their storyboard. The purpose of this project is to synthesize understandings into a project with up to three randomized ideas.

[Project 12 - Animated Card.](#) Young coders apply their understandings from previous projects to create an animated card. The purpose of this project is to

introduce young coders to triggering algorithms using the start on bump block.

Project 13 - Haunted House. Coders use a variety of blocks and sprites to create their own interactive diorama about a haunted house. The purpose of this project is to review creating sprites and triggering algorithms when a sprite is tapped.

Project 15 - Race to the Finish. Coders use a variety of blocks and sprites to create a racing game and a short story about a race. The purpose of these projects is to apply previously learned concepts in a new context to create their first game and a short story, as well as introduce the say block.

Project 17 - My Friends and Family. Coders use a variety of blocks and sprites to create their own interactive diorama about their friends and family. The purpose of this project is to reinforce the concept of parallelism to trigger two or more algorithms simultaneously.

Project 19 - Knock, Knock. Coders use a variety of blocks and sprites to create their own knock, knock joke. The purpose of this project is to reinforce using the wait block to accurately time algorithms running in parallel.

Project 21 - Alien Planet. Coders use a variety of blocks and customized sprites to create their own interactive diorama about an alien planet. The purpose of this project is to review changing or creating sprites using the paint editor.

Project 23 - In the Future. Coders use a variety of blocks and sprites to create an interactive diorama about their predictions for the future. The purpose of this project is to apply previously learned concepts in a new context (e.g., modifying sprites, parallelism, events, etc.).

Project 25 - Jungle. Coders use a variety of blocks and customized sprites to create their own interactive diorama about a jungle. The purpose of this project is to reinforce the concept of parallelism to trigger two or more algorithms simultaneously.

Project 27 - Dribble a Ball. Coders use a variety of blocks in parallel to create

reinforce understandings from previous projects within a new context. This project can be repeated throughout the year for various events, holidays, birthdays, to give thanks, or as an act of kindness.

Project 14 - Look Both Ways. Coders use a variety of blocks and sprites to create a short story with a moral. The purpose of this project is to apply previously learned concepts in a new context. This project can be adapted to any short story with a moral.

Project 16 - I'm Sooo Hungry. Coders use a variety of blocks and sprites to create a short story about a hungry sprite. The purpose of this project is to apply previously learned concepts in a new context and to review how to trigger algorithms when a sprite is bumped.

Project 18 - When I Grow Up. Coders use a variety of blocks and sprites to create their own interactive diorama about when they grow up. The purpose of this project is to reinforce the concept of parallelism to trigger two or more algorithms simultaneously.

Project 20 - Randomized Synthesis Project. Coders storyboard a project based on randomized idea(s) and create a project based on their storyboard. The purpose of this project is to synthesize understandings into a project with up to three randomized ideas.

Project 22 - There's a Monster Under My Bed. Coders use a variety of blocks and sprites to create a short story about a monster under the bed (or in the closet). The purpose of this project is to apply previously learned concepts in a new context and to learn how to modify a backdrop to make it look like nighttime.

Project 24 - Animate My Name. Coders use a variety of blocks to animate each letter of their name (or vocabulary words). The purpose of this project is to review creating sprites using the paint editor.

Project 26 - My Aquarium. Coders use a variety of blocks and sprites to create an interactive diorama about an aquarium. The purpose of this project is to apply previously learned concepts in a new context (e.g., creating or modifying sprites, parallelism, events, etc.).

Project 28 - Rainy Day. Coders learn how to use the “go to page” blocks to create

simulations (e.g., dribbling a ball). The purpose of this short project is to apply previously learned understandings in order to simulate motion.

Project 29 - A Day as a Pirate. Coders use a variety of blocks and sprites to create a multi-page story about a day as a pirate. The purpose of this project is to reinforce the “go to page” blocks and to apply previous understandings across multiple pages.

Project 31 - Desert. Coders use a variety of blocks and sprites to animate a mini research project about the desert. The purpose of this project is to introduce using the message blocks with multiple sprites and pages.

Project 33 - If Animals Could Talk. Coders review and apply a variety of blocks and sprites to animate a multi-page project about talking animals. The purpose of this project is to review using the message blocks with multiple sprites and pages.

Project 35 - Animate a Joke. Coders use a variety of blocks and sprites to animate multiple jokes. The purpose of this project is to reinforce understandings of storyboarding multiple pages and applying prior understandings into a project of interest.

Project 37 - A Day at the Beach. Coders use a variety of blocks and sprites to create a multi-page story about a day at the beach. The purpose of this project is to introduce multiple ways to have a sprite appear to switch costumes.

Project 39 - Pass it On (Story Starters). Coders engage in a multi-day project where they create the introduction to a short story and then pass their project on to be finished by their peers. The purpose of this project is to encourage young coders to communicate and learn from their peers.

Project 41 - Ninja Maze Challenge 1. Coders will solve four different maze challenges that focus on a combination of vertical and horizontal movement, then create their own unique mazes that peers will solve. The purpose of this project is to reinforce understanding of predicting and sequencing a sprite’s movement using the motion blocks.

Project 43 - Flying. Coders use a variety of blocks and sprites to animate a mini

a multi-page story about a rainy day. The purpose of this project is to introduce coders to the “go to page” blocks and to apply previous understandings across multiple pages.

Project 30 - Randomized Synthesis Project. Coders storyboard a project based on randomized idea(s) and create a project based on their storyboard. The purpose of this project is to synthesize understandings into a project with up to three randomized ideas.

Project 32 - Oh No, We’re Super Tiny! Coders use a variety of blocks and sprites to create a multi-page story about being very tiny. The purpose of this project is to reinforce the “go to page” blocks and to apply previous understandings across multiple pages.

Project 34 - To the Moon. Coders revisit a previously created project about outer space to add a short story about travelling to outer space. The purpose of this project is to apply newly acquired understandings to a prior project.

Project 36 - The Story of the Stinky Robot. Coders use a variety of blocks and sprites to create a multi-page story about a stinky robot. The purpose of this project is to apply previous understandings across multiple pages.

Project 38 - On My Way to the Party. Coders revisit a previously created project about a dance party to add a short story about travelling to the dance party. The purpose of this project is to apply newly acquired understandings to a prior project.

Project 40 - Randomized Synthesis Project. Coders storyboard a project based on randomized idea(s) and create a project based on their storyboard. The purpose of this project is to synthesize understandings into a project with up to three randomized ideas.

Project 42 - The Aliens Have Landed. Coders use a variety of blocks and sprites to create an interactive story about giving a gift to an alien visiting Earth. The purpose of this project is to reinforce understanding of message blocks.

Project 44 - Tag, You’re It! Coders use a variety of blocks and sprites to create a

research project about creatures that fly. The purpose of this project is to reinforce the concept of parallelism by simultaneously triggering two or more algorithms that simulate flight.

Project 45 - The Helpful/Naughty Wizard. Coders use a variety of blocks and sprites to create a story about a wizard who either helps people or plays pranks on them. The purpose of this project is to reinforce understanding of message blocks to give the appearance of switching costumes.

Project 47 - The Silly Monkey. Coders use a variety of blocks and sprites to create a multi-page story about a silly monkey who can do acrobatic stunts. The purpose of this project is to apply previous understandings across multiple pages.

Project 49 - Ninja Maze Challenge 2. Coders will solve four different maze challenges that focus on diagonal movements, then create their own unique mazes that peers will solve. The purpose of this project is to reinforce understanding of predicting and sequencing a sprite's movement using the motion blocks running in parallel.

Project 51 - Can You Find the Sprite? Coders use a large number of sprites to create a simple but fun game where a player tries to find Scratch Cat hiding in each scene. The purpose of this project is to apply previous understandings to create a game.

Review - Randomized Synthesis Project. Coders storyboard a project based on randomized idea(s) and create a project based on their storyboard. The purpose of this project is to synthesize understandings into a project with up to three randomized ideas.

multi-page story with a moral. The purpose of this project is to apply previously learned concepts in a new context. Although the example project is about lessons learned while playing tag, this project can be adapted to any story with a moral.

Project 46 - In a Cave. Coders use a variety of blocks and sprites to animate a mini research project about the inside of caves. The purpose of this project is to reinforce understanding of using the message blocks with multiple sprites and pages.

Project 48 - Our Class. Coders use a variety of blocks and sprites to create a fictional or true story about peers in their class (or another class). The purpose of this project is to apply previous understandings across multiple pages, with a particular focus on using message blocks in a sequence.

Project 50 - Creating Rain with Code. Coders use a variety of blocks in parallel to simulate rainfall and wind. The purpose of this short project is to apply previously learned understandings in order to simulate weather.

Project 52 - Fall Break. Coders use a variety of blocks and sprites to create an imaginary or true story about what a sprite will do on Fall break. The purpose of this project is to apply previous understandings in a new context.

More ScratchJr projects are scheduled for development after the next Scratch release.

Grades 3+ Project Alignment and Outlines (Scratch)

In this sequence of projects for Scratch, we gradually introduce a variety of practices and concepts while simultaneously introducing coders to a variety of blocks and tools in Scratch. Each project is aligned with the algorithms and programming standards developed by the [Computer Science Teachers Association](#) (CSTA). Below is a summary of the standards embedded within at least one of the projects, as well as a description of each project that may take several classes to complete. Click a link to preview each project or watch an overview video for [projects 1-10 \(1:56\)](#), [projects 11-20 \(2:04\)](#), [projects 21-30 \(2:00\)](#), and [projects 31-40 \(2:25\)](#).

1B-AP-08 Compare	1B-AP-09 Variables	1B-AP-10 Create	1B-AP-11 Decompose	1B-AP-12 Remix	1B-AP-13 Plan	1B-AP-14 Attribution	1B-AP-15 Debug	1B-AP-16 Collaborate	1B-AP-17 Describe
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

[Project 1 - Animate Your Name.](#) In this introductory project, coders create their name using letter sprites and use code to animate each letter when clicked. The purpose of this project is to introduce coders to creating simple algorithms using a small number of blocks in Scratch.

[Project 3 - Jump Scare Slideshow.](#) Coders learn how to create a jump scare slideshow as a fun prank. The purpose of this project is to introduce using control blocks to cycle through backdrops and eventually create a jump scare.

[Project 5 - What Can You Create - Introduction.](#) This challenge asks coders to use a limited selection of block types within an unlimited number of sprites to create something interesting. The purpose of this challenge is to encourage coders to think creatively about block combinations to better understand algorithmic sequences.

[Project 7 - A Friend of Mine.](#) Coders learn how to remix a project that introduces a friend, historical figure, or imaginary person. The purpose of this project is to introduce coders to remixing projects and to build on the understandings from previous projects.

[Project 9 - Interactive Art](#) Coders create an interactive painting that respond when different parts are clicked. The purpose of this project is to introduce duplicating and editing a sprite, as well as applying previously used blocks in a new context.

[Project 2 - Interactive Collage.](#) Coders create an interactive collage that explains what they like when a sprite is clicked. The purpose of this project is to reinforce understanding of the previously introduced blocks while introducing the Say block and further getting to know the coders you work with.

[Project 4 - Knock, Knock.](#) Coders will unscramble a knock knock joke, then create their own jokes using two sprites. The purpose of this project is to introduce using wait blocks to simulate two sprites talking with each other.

[Project 6 - Animated Card.](#) Coders apply their understandings from previous projects to create an animated card. The purpose of this project is to reinforce understandings from previous projects within a new context. This project can be repeated throughout the year for various events, holidays, birthdays, to give thanks, or as an act of kindness.

[Project 8 - Virtual Museum.](#) Coders collaboratively research and create a virtual museum that responds when a user clicks on a sprite. The purpose of this project is to review understandings from the previous projects and prepare coders for the following project in the suggested sequence (Interactive Art).

[Project 10 - Story About Me.](#) Coders select from a variety of starter prompts, storyboard their story, then code a story about themselves. The purpose of this synthesis project is to storyboard a project and then apply their understandings into a project of interest.

Project 11 - Photo Editor. Coders create a photo editor app that alters the appearance of a photo when various buttons are clicked. The purpose of this project is to introduce how to broadcast and receive messages.

Project 13 - Beatbox Machine. Coders create a project that allows them to make music with their faces when certain keys on a keyboard are pressed. The purpose of this project is to introduce triggering algorithms with specific keyboard events.

Project 15 - Let's Dance. Coders create a project that causes sprites to dance to repeated background music. The purpose of this project is to introduce timing algorithms to repeated music.

Project 17 - An Amazing Maze Game. Coders create a player controlled maze game with multiple, custom levels. The purpose of this project is to introduce conditional statements (if blocks) to create player controls, while reinforcing how to use the image editor to design mazes.

Project 19 - Award Acceptance Speech. Coders combine their understandings from previous projects to storyboard and create an award acceptance speech. The purpose of this project is to storyboard a project, apply their understandings into a project of interest, and learn a couple of new tools and blocks.

Project 21 - Nyan Simulator. Coders create a Nyan Cat simulator that causes a cat to fly around the screen while drawing rainbows. The purpose of this project is to introduce a variety of pen blocks by combining them with previous understandings.

Project 23 - What Can You Create - Drawing. This challenge asks coders to use a limited selection of block types within an unlimited number of sprites to create art. The purpose of this challenge is to encourage coders to think creatively about block combinations to better understand algorithmic sequences.

Project 25 - Music Player. Coders combine their previous understandings of creating interactive buttons to create a music player with multiple buttons. The purpose of this project is to reinforce understandings of modularity by combining previous understandings within a new context.

Project 12 - Photo Booth. Coders apply their understandings of broadcasting and receiving messages to create an interactive photo booth. The purpose of this project is to reinforce understandings of messages through a remix project focusing on adding user controls.

Project 14 - What Can You Create - Music. This challenge asks coders to use a limited selection of block types within an unlimited number of sprites to create something musical. The purpose of this challenge is to encourage coders to think creatively about block combinations to better understand algorithmic sequences.

Project 16 - Character Builder. Coders learn how to design custom costumes to create a customized character builder for a selected theme. The purpose of this project is to reinforce understandings of messages while introducing new features in Scratch.

Project 18 - Scenic Walk. Coders create a scenic walk where a sprite walks between backdrops to describe or introduce each scene. The purpose of this project is to introduce the when backdrop switches to block to show and hide sprites on specific backdrops.

Project 20 - Coder Interview. Coders select from a variety of starter questions, storyboard their interview, then code an interview about what they learned in Scratch. The purpose of this synthesis project is to storyboard a project and then apply their understandings into a project of interest.

Project 22 - Pumpkin Carver. Coders create a pumpkin carver simulator that allows users to “carve” a pumpkin with their mouse. The purpose of this project is to introduce creating a drawing application using pen blocks by combining them with previous understandings.

Project 24 - Carve a Pumpkin with Code. Coders continue to develop their understanding of pen blocks by creating algorithms to carve pumpkins. This purpose of this project is to reinforce understandings of how to draw shapes with code.

Project 26 - Blinking Maze Game. Coders create a player controlled blinking maze game with multiple, custom levels. The purpose of this project is to reinforce understandings of the previous maze game, while introducing new mechanics.

Project 27 - Sprite Catcher. Coders combine their understandings from previous projects to create a sprite catcher game. The purpose of this project is to reinforce understandings of modularity in a new context.

Project 29 - Interactive Store Display. Coders combine their understandings from previous projects to storyboard and create an interactive story display. The purpose of this project is to storyboard a project, apply their understandings into a project of interest, and experiment with new tools and blocks.

Project 31 - Street Art. Coders create a spray paint simulator that allows users to create their own artwork. The purpose of this project is to introduce the stamp block and reinforce previous understandings.

Project 33 - Jump Scare Maze Game. Coders create a player controlled maze game with a funny jump scare that appears on one of the levels. The purpose of this project is to combine understandings from prior projects to create a game with a funny jump scare.

Project 35 - Don't Catch Mine! Coders create a competitive game that keeps track of each player's score. The purpose of this project is to collaboratively reinforce variables to keep track of each player's score. Note: this project builds off the understandings introduced in "Food Catcher."

Project 37 - It's Alive! Coders learn how to add costumes to a sprite to simulate lifelike movements or animations in a scene or short story. The purpose of this project is to reinforce understanding of the image editor while learning how to better simulate motion/animations when a sprite has a limited number of costumes.

Project 39 - Pass It On (Story Starters). Coders engage in a multi-day project where they create or remix an introduction to a short story. The short version of this project is completed by one coder, while the longer version involves coders passing their incomplete project to a peer, who adds to their story. The purpose of this project is to encourage coders to communicate and learn from their peers.

**** Preview the next set of Scratch projects (lesson plans and walkthroughs are under construction) ****

Project 28 - Animate a Joke. Coders combine understandings from several prior projects to animate a joke. The purpose of this project is to reinforce prior understandings with a focus on modularity.

Project 30 - Superhero(ine) Project. Coders select from a variety of starter questions, storyboard their superhero(ine) project, then code a story or game. The purpose of this synthesis project is to storyboard a project and then apply their understandings into a project of interest.

Project 32 - Architect Simulator. Coders combine their previous understandings of using pen blocks to create an app that allows users to create architecture with blocks. The purpose of this project is to reinforce understandings of modularity and user interaction by combining previous understandings within a new context.

Project 34 - Food Catcher. Coders create a food catcher game that keeps track of the player's score. The purpose of this project is to introduce variables to keep track of a player's score.

Project 36 - What Can You Create? - Story. This challenge asks coders to use a limited selection of block types within an unlimited number of sprites to create a story with multiple scenes. The purpose of this challenge is to encourage coders to think creatively about block combinations to better understand algorithmic sequences.

Project 38 - Random Sprite Challenge. Coders create a randomly generate sprite and then review how to add costumes to a sprite to simulate lifelike movements or animations in a scene or short story. The purpose of this project is to learn how to better simulate motion/animations of a newly created sprite.

Project 40 - Looking Back. Coders combine their understandings from previous projects to create a scrapbook synthesis project that reflects on what they did/learned over the year. The purpose of this synthesis project is to reflect on and synthesize prior learning, while also learning how to simulate Polaroid pictures developing.