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Level 6

Home



Story Mode



My Apps



Kano Code



Make Art



Hack Minecraft

Staff Picks



Scratch



Make Pong



Youtube



Internet



Terminal



Kano World

Explore Kano



Beginner



1 hr

Students, after building their Kanos, will take time to understand the software inside the Kano operating system and explore some of the features to get to know it!

OBJECTIVES

- ⚡ Learners will grasp the difference between hardware and software
- ⚡ Learners will understand how Kano's Operating System (OS) works
- ⚡ Learners will gain an understanding of the different uses of code
- ⚡ Be able to use code to make basic creations

STANDARDS

- ⚡ **K12 CS:** Computing Systems.Devices, Computing Systems.Hardware and Software
- ⚡ **CSTA:** K-2: 1A-A-4-4, 1A-C-7-9, 1A-C-7-10, 1A-C-6-11
- ⚡ **Common Core:** CCSS.MATH.PRACTICE.MP1

Introduction

🕒 10 mins

Linking

Remember building our computers and learning about hardware and software?

Remind learners that a way to help you remember the difference with think of hardware as a physical device. Something you can touch and put in your hands. Software you can't do the same thing. It lives inside your computer or in another device.

Today, we're going to dive into software and start coding. Ask learners what they have heard about code - what is it? What are some coding languages they've heard of? List a few on the board - including:

- Scratch
- Coffeescript (Make Art)
- Python (Make Snake)
- Kano Blocks (Make Minecraft, Make Pong)
- HTML
- JavaScript
- CSS

You can use this resources to help you discuss [code](#) with your students. When they powered up Kano, they saw something called "binary code." Computers think in 1s and 0s. Humans don't! In order to speak to computers, we need code!

Engage

Get excited! We want to use code to be creative - you can do all sorts of things with code!

[Watch this video](#) on coding at Pixar.

Collect Kanos

🕒 5 mins

Retrieve Computers, Turn On, Log In..

Exploration Activities

Challenge 1: Become a Creative Remix Master!

🕒 5 mins

We have built a Kano, but now we want to think about how we can be CREATIVE with Kano. For all of our sessions we will be learning how to code in a lot of different environments. We will be given a lot of step-by-step instructions on how to create magnificent creations in art, games, and sound! What we want to do when we finish these challenges is to think creatively!

Once you finish a challenge just don't click next and move on! After each challenge try to change the code. Maybe you change the numbers for a code block or you change the color. Try it out and see what you can do and what you can uniquely create! Become a Remix Master!

When you code something super cool try sharing in on Kano World or recording in your engineering journal what you did so you can tell the whole group how awesome your code is! Even though you told them to become remix masters it is helpful to show them at least how to remix or "hack" each challenge

Challenge 2: Explore Make Art!

🕒 15 mins

Once Kanos are powered on have the learners go to Make Art. For Make Art, work with them through the first Basic challenge (Sunny Day) and show them how they can be the remix master. The easiest remix you can make for sunny day is to change the background color or radius of the circle!

Have them work on at least 3 challenges in Make Art and remix each challenge. Again, encourage learners to share their work via Kano World or record their remix in their engineering journals!

Challenge 3: Explore Make Snake!

🕒 10 mins

There are a lot of different apps on the Kano computer. But can you hack a game? Yes! Now, let's exit out of Make Art and go to Make Snake. If your group is young, tell them that snake was a wildly popular game on phones where you were a snake moving around the board eating apples or little dots. It was very basic, but now they get to hack it and make it challenging with code!

In snake learners should remember to try and remix the challenges after learning how to modify the game. Don't forget to share your game with Kano World!

Challenge 3: Explore Make Pong!

🕒 10 mins

How about one more game? This time let's hack Pong! Again, this was a very popular game (the first video game) and we can hack it to be AWESOME now! This platform is a little different than Snake. Instead of just using lines of code we can use block code similar to Scratch to customize the game! Remember to remix each challenge and don't forget to share your game with Kano World!

Closing

Evaluation

🕒 5 mins

Tell the learners to get into pairs and talk about which of the 3 games they liked the best. If they haven't already, ask them to share what they've created via Kano World! Each pair can share what they liked best and what was most difficult.

Come up with a class definition for "code," and list a few things that you can create using code. Have students write down this definition in their engineering journal.

Extension

Before leaving, pass out the "Explore Kano Worksheet" to be completed at home. You can find the worksheet in the appendix section of this packet.

Kano Clean-up

🕒 5 mins

Power down and put away Kanos



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Explore Kano

Name: _____

Date: _____

Explorer Questions

Directions: Under each image write the **name** of the Kano App, **how you code** (blocks or text), and a brief **description** of the app.







Programmer Question

Where there any other apps that you discovered? Is so write their name, provide a description of the app, and draw what the app's logo looks like below!



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Explore Kano

Creator Question

If you could design an app for the Kano what would it be? What would its features be? What would the logo be? Draw the app below!



Explore Kano Answer Key

ANSWER KEY:

Explorer Questions:

1. **Make Art:** use text based code (coffescript) to code. The text lets you create art with text based code.
2. **Make Pong:** uses block code to hack and modify pong.
3. **Make Snake:** uses python to modify Snake.

Programmer Question

Were there any other apps that you discovered? If so write their name, provide a description of the app, and draw what the app's logo looks like below!

Learners can pick any app. Some apps include: TuxPaint, Powerup (Make Light), Scratch, Hack Minecraft, Terminal Quest, etc. For each added app learners should provide one sentence on what the app is and code language used (if applicable).

Creator Question:

Let learners be creative! It can be any app they want! It can be an app they already have played on or a new idea. Make sure there is a drawing!