

THREE

NO-TECH CODING

ACTIVITIES FOR KIDS

Enjoy these three coding activities for kids that can be done from home (with adult supervision).

While they may not involve a computer and keyboard, they teach you the main concepts used in all of computer programming. Enjoy, and build something awesome!



CHALLENGE

Materials: Cups (lots of them!), paper, pencil

Prompt: Have you ever wondered how high you can stack a bunch of cups? Or maybe dreamed about what crazy designs you can make by stacking cups? In this challenge you are going to make the coolest stack of cups you can imagine.

Instructions:

1. Stack your cups in a creative design.
2. Once stacked think about how you made the creation.
3. Write directions for someone else to use to re-create your stack
4. Write directions for someone else to use to re-create your stack.
5. Try out your directions to see how they work - make changes if you see something that isn't exactly right.
6. (Optional) Ask someone else to try out your directions. How did it work?

An Algorithm is a series of steps in a set of instructions. Computer programmers use algorithms all the time.

Inspired by <https://j.daniel4smom.com/wp-content/uploads/STEM-Coding-for-Kids-Cup-Stacking-Algorithm.pdf>

code-a-scotch

Materials: Sidewalk chalk, paper, pencil

Prompt: Coding could be explained as "Making the computer do what you want it to do." The computer follows your commands without questions.. In this activity one person is going to be a "computer" and the other the "coder." The coder will create instructions, and the computer will follow the instructions.

Instructions:

1. Draw a basic hopscotch pattern on the ground with sidewalk chalk, and number the boxes 1-10.
2. Using the paper and pencil the person who is the coder should draw an arrow. Then the person who is the computer hops one hop in the direction of the arrow. Coder draws more arrows until the computer makes it to number 10.
3. Switch places! The coder becomes the computer, and the computer becomes the coder. But this time the coder writes all the instructions ahead of time and then the computer follows them all at once. Revise your instructions until the computer is successful.
4. (Optional) Add other commands in the sequence for the computer to obey, such as clapping, or clucking like a chicken.

Inspired by <https://teachyourkidscode.com/unplugged-coding-activities-outside/>



Materials: paper, pencil

Prompt: Computers are really good at doing the same thing over, and over, and over again. When a computer repeats an action or series of actions it's called a loop. In this activity, you're going to create a dance sequence... then loop it!

Instructions:

1. Think about your favorite dance moves (spin, jump, clap over the head, etc). On separate pieces of paper draw each of the dance moves.
2. Line up the pieces of paper with your moves.
3. Turn on some music and do each move in the order you chose. When you get to the end, go right back to the beginning without missing a beat. That's looping! Keep going until the song is done.
4. (Optional) For extra fun, find someone else and do the dance together.



The Loopy
DANCE

Inspired by <https://code.org/curriculum/course1/12/Teacher>

THE PARENT GUIDE

TO CODING ACTIVITIES

On the other side of this page are three extremely fun and beneficial activities that will help your child learn some of the basic concepts of computer programming. But how do you, as their parent or caretaker, support them as they engage in these activities? Good news, you don't need to know how to code!

THE THREE MINDSETS



Cheerleader

The most important thing your child needs as they begin the challenge of learning how to code is someone who believes in them. A cheerleader encourages us when we're discouraged, celebrates when we succeed, and supports us when we fail. Create an uplifting and positive environment, and cheer your heart out.



Mentor

A good mentor leads us to the answer rather than giving us the answer. When your child gets stuck, don't bail him or her out. Help your child wrestle with the solution. Ask questions like, "What have you tried so far?" or "How do you think we could solve this problem?" The important thing is mentors never let us give up.



Facilitator

Help your child learn these coding concepts by setting aside time and providing the materials needed. Set them up to succeed! Have everything ready to go so the child can focus on the activity. This also means that if there is no one else around, you are their default guinea pig. There are worse things in life...