



Project Exploration creates transformative learning opportunities for youth underrepresented in the sciences –particularly students of color and girls – by equipping them with the skills, practices, and mindset needed for a lifelong pursuit of learning. STEM@Home makes activities around science, technology, engineering, and math accessible and fun to do at home. This STEMbook activity, resources, and more are available at www.projectexploration.org/stemathome.

In this activity, you will:

Learn what computer programming is, then play a game where you become both the computer and the computer programmer.



Supplies Required:

- Paper
- Something to draw with (pencils, markers, crayons, etc.)
- A friend to play with

Video

In this video from Let's Learn, Valerie Brock and Jorge Gallardo introduce computer programming. Together they play a game drawing shapes using step-by-step instructions. Play along with them! <https://tinyurl.com/2vshn7at>

Overview

Computers can't think or make decisions. It is up to the computer programmer to write instructions for the computer to follow. This is computer programming, and it is how we are able to go on the internet, play games, watch videos, and talk to our friends over the computer. The more specific the instructions written by the computer programmer the better.

In this drawing game, the person who draws becomes the computer and the person giving instructions becomes the computer programmer. What did you learn about computers and programming?

Instructions

1. Gather your drawing materials and decide who will be the computer and who will be the computer programmer.
2. The computer programmer picks a picture for the computer to draw. Only the computer programmer can see the picture for now.
3. The computer programmer gives the person playing as the computer step-by-step instructions on how to draw the picture.
4. Compare the two pictures, how similar is the draw the computer made to the actual drawing? Did the computer programmer give instructions that were specific enough?
5. Switch roles and choose a new picture to draw.

Additional Resources

1. What is Coding? Explore our definition of coding and what it looks like to code with PBS KIDS ScratchJr. <https://tinyurl.com/hmf4nydu>
2. Robotics and Coding: Walk This Way, watch this video and play along to program your friends to walk like a robot. <https://tinyurl.com/yyk9aut8>

Share It Out

Share on social media: Record a video or take a picture of your activity and post the results online using the hashtags:

#ComputerProgramming
#ThinkLikeAComputer
#ProjectExploration
#StemAtHome

Tag a friend and challenge them to do it, too!

For more activities like this one, go to www.projectexploration.org/stemhome. If you're interested in learning more about Project Exploration and our free events, programs, and activities, please find us on social media and be sure to follow!



Call or text us for help: 312-772-6634



www.projectexploration.org