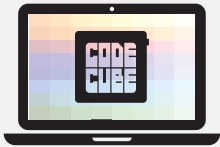


Teacher Tips



These activities do not need to be completed in order. Feel free to add them in between lessons if you feel like students can be successful with their current coding knowledge and experience.

This set of challenge activities can be completed at any time after students feel comfortable writing code for the Code Cube. All 10 lessons do not have to be completed to attempt any of these. However, students might want to review some of the lessons if they are not sure what any of the blocks do. These are open-ended and can be solved in many ways.

ACTIVITIES

Growing, Growing, Gone!

Have you ever watched a time-lapse video of a growing flower or tree? It is amazing how one little seed can produce such magnificent organisms! Create an animation that shows the growth process of any plant you choose that begins with a seed and ends with it disappearing. Feel free to add any sounds you think would improve the presentation. Use a worksheet to sketch ideas and write descriptions of your program if needed.

Chasers

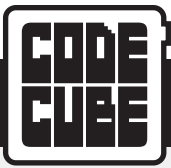
Have you ever watched someone chase something or someone else? Do they ever catch it? Write a program that shows one image chasing another and write a story that explains why one is chasing the other. Also explain why the one being chased does not want to be caught. Feel free to add any sounds you think would improve the presentation. Use a worksheet to sketch ideas and write descriptions of your program if needed.

Your Song

Have you ever walked around whistling or humming a catchy tune that you cannot get out of your head? Write a program that plays that tune or try to come up with a catchy tune of your own. If you know how to read sheet music, feel free to search for the tune online. Add any images you think would improve the presentation. Use a worksheet to sketch ideas and write descriptions of your program if needed.

Decision Maker

Do you sometimes have trouble giving an answer to someone’s question? Are there times you wish someone would answer your big questions? Write a program that will give an answer to a question like the wonderful Magic 8 Ball does. You can have a person move the Code Cube in a different position as each word of the question is asked and have him or her stop in the position of the last word to display an answer. You should include a couple of positive responses (such as “yes” or “most likely”), one indefinite response (such as “ask later”), and one negative response (such as “very doubtful” or “no”). Try it yourself or have others try it. Feel free to add any sounds you think would improve the presentation. Use a worksheet to sketch ideas and write descriptions of your program if needed.



## Teacher Tips



It might be helpful to have worksheet pages available for students to use while completing the activities.

**Treasure Map**

Have you ever dreamed of finding a buried treasure after finding a map? Here's a chance for you to make that dream come true for someone who shares it! Hide an object somewhere in your class or on your campus (ask your teacher where it is OK to go). Then, write a program that will lead someone from a starting point to your hidden treasure if he or she follows the steps correctly. You can add some fun riddles along the way to give clues to the location or hints about how big or small the steps should be. Feel free to add any sounds you think would improve the presentation. Use a worksheet to sketch ideas and write descriptions of your program if needed.

**Shape-shifter**

Have you ever watched a video where one image morphs or changes to another? It is a pretty cool effect that can be fun. Write a program that changes one image to another by changing one pixel at a time to create an awesome effect. Feel free to add any sounds you think would improve the presentation. Use a worksheet to sketch ideas and write descriptions of your program if needed.

**What Is That?**

Can you guess what something is as it is revealed to you a little bit at a time? Write a program that reveals an image one pixel at a time until all pixels are colored and the complete image is shown. You can write some hints or riddles to tell between the first and last pixel for fun. Show your program to others to see how quickly they can guess what the image is. Feel free to add any sounds you think would improve the presentation. Use a worksheet to sketch ideas and write descriptions of your program if needed.

**A Great Story**

It seems like everyone loves a great story! All great stories have a character that wants something and takes action to make it happen. However, the character will run into some sort of obstacle or conflict that he or she will have to resolve. Write a great very short story and then write a program that will show images or animations to help tell the story. Feel free to add any sounds you think would improve the presentation. Use a worksheet to sketch ideas and write descriptions of your program if needed.

**Market Your Fun Art**

Do you like to create your own designs? Write a program that will display images that can be worn with a slap bracelet, a headband, or anything else. Prepare a short commercial to market your new codable wearable. Feel free to add any sounds you think would improve the presentation. Use a worksheet to sketch ideas and write descriptions of your program if needed.

**Holiday Wearables**

Do you like to wear colors or items during different holiday seasons? Your Code Cube can be worn using the provided slap bracelet or in any other ways you can attach it to yourself or wardrobe. Create at least three different images that would be festive for a season and think of creative ways to make them appear when they are being worn. Use a worksheet to sketch ideas and write descriptions of your images or how they relate to your chosen holiday if needed.

**Holiday Games**

Do like playing or watching people play games during different holiday seasons? Your Code Cube can become a source of fun during different seasons. Create a holiday-themed game that uses holiday images and sounds. Use a worksheet to sketch ideas and write descriptions of your game if needed.

**Holiday Stories**

Do you like to hear stories about different holiday seasons? Your Code Cube can be used to help tell a real or fictional story related to a holiday season. Create at least three different images that can be used to help tell an original or existing story related to a holiday. Use a worksheet to sketch ideas and write descriptions of your images or how they relate to your story if needed.