



PLTW Virtual Learning

6th Grade Intro to Tech

May 20, 2020



6th Grade Intro to Technology Lesson: May 20 (Part 8 of 10)

Objective/Learning Target:

Students will develop knowledge of the fundamentals of the coding process through a blocky code language (or a text-based language if they choose a more advanced challenge).

Warm-Ups:

What is a variable? If you haven't heard that term before, like in math class, do you have any guesses as to what it could mean?

If you know what a variable is, when in coding could a variable be helpful?

Warm-Ups: **Answers**

What is a variable? (A placeholder for a piece of information that can change.)

When can a variable be helpful? (When you don't know what information is going to be used in a certain place until runtime, or when you have lots of places that one piece of information will be used, but that information might change someday.)

Lesson Introduction/Background Information:

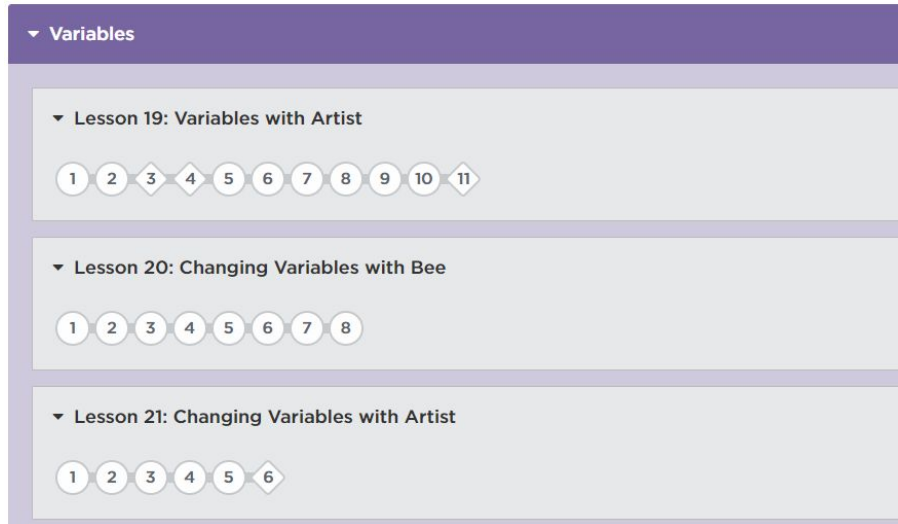
Regardless of your previous experience (or lack of) with coding, you are going to be spending the next two weeks working through structured coding lessons and learning some fundamental concepts of writing code that apply whether you are doing blocky (drag and drop) coding or you are doing text-based coding. Coding can be used from everything to making games, designing websites, creating apps, and programming robots (which you will be doing next year if you take Automation and Robotics).

Practice (Signing-In):

- Go to code.org
- This is not required, but if you want to save your progress on this FREE site, click the turquoise “Sign In” button in the top right corner.
- Click the red “Continue with Google” button on the right side.
- Click your school email (or any Google account) to continue.
- Watch [this video](#) to see these steps in action to get logged in (which is optional!)

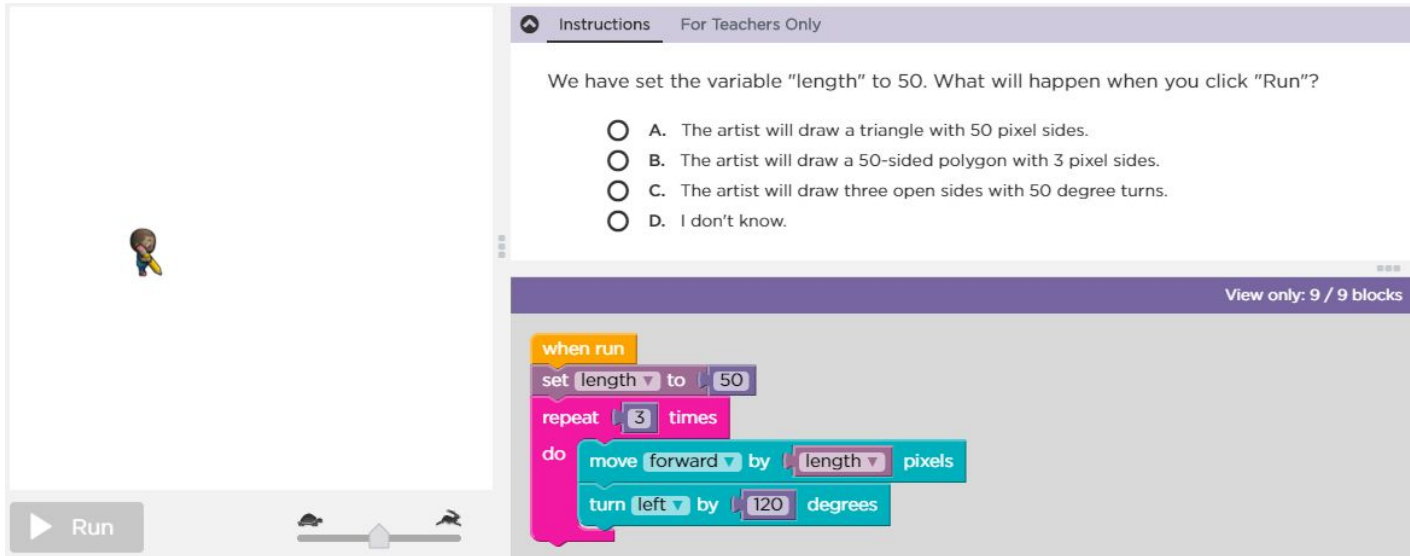
Practice:

- Navigate through the course catalog to the Express Course, or follow this link: <https://studio.code.org/s/express-2019>
- Today you are going to be introduced to variables, or placeholders for information that can change in your coding, in lessons 19-21.



Practice:

- Variables are placeholders for information that can change. Having a placeholder makes it possible to write a program, even when you won't know all of your values until later! Explore this concept with today's lessons, featuring the Artist and that friendly bee again.



The screenshot shows a programming environment with a canvas on the left containing a small character. On the right, there is a panel with a quiz question and a code editor. The quiz question asks what happens when the 'Run' button is clicked, given that a variable named 'length' is set to 50. The code editor shows a 'when run' block containing a 'set length to 50' block, a 'repeat 3 times' loop, and a 'do' block with 'move forward by length pixels' and 'turn left by 120 degrees' blocks.

Instructions For Teachers Only

We have set the variable "length" to 50. What will happen when you click "Run"?

- A. The artist will draw a triangle with 50 pixel sides.
- B. The artist will draw a 50-sided polygon with 3 pixel sides.
- C. The artist will draw three open sides with 50 degree turns.
- D. I don't know.

View only: 9 / 9 blocks

```
when run
  set length to 50
  repeat 3 times
    do
      move forward by length pixels
      turn left by 120 degrees
```


Self-Assessment:

Each lesson will check your work as you go, so you get immediate feedback!

Did you use more blocks than recommended on a level? Go back and see if you can complete it while staying under the block maximum.

Extend Your Learning/Continued Practice:

Code.org also has some great videos about computer science. Check out two of them below in a second series, What is the Internet?

[What is the Internet?](#)

[The Internet: Wires, Cables, and Wifi](#)