

Objective:

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What: Importance of using Libraries

How: Videos and Discussions

Why: To import the Turtle library

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Standards:

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7-8.CT.6 Design, compare and refine algorithms for a specific task or within a program.

7-8.CT.7 Design or remix a program that uses a variable to maintain the current value of a key piece of information.

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### **1. Libraries (Tutorial)**

Optional: Ask students, "What is a library?" (a collection of predefined functions and values)

Tell students to click the "Next" button (located at the bottom of the document) to move on to the next module.

### **2. Import Syntax (Tutorial)**

Note: Students are provided information on how to fix the syntax errors.

### **3. Other Libraries (Tutorial)**

Ask students to run the random library example several times. Why does the output change each time they run it?

Optional: Ask students how the random library example is different from the time library example? How are they similar?

Tell students to click the "Next" button to move on to the next module.

Vocabulary:

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1. Physical Libraries
2. Digital Libraries
3. Coding Libraries

Agenda

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1. Welcome/Refresher 3 mins
2. Do Now 7 mins
3. I DO 10 mins
4. We Do

Do Now 8-mins:

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1. Why are libraries important? How do we use it in school? In your community?

I DO 10 mins

Play the video below to display to students real world code application of coding.  
[Python Libraries](#)

Students will read a short document that explains the turtle library.

Encourage students to slightly modify the code in the "moving" and "turning" examples.  
How do their changes affect the output?

Are students struggling with the "Draw a polygon" DIY? Tell them to draw a square and use the code in the "turning" example as a reference.

Are students struggling with the "Draw a star" DIY? Give a hint: Tell students to use "left(angle)" function, which turns the turtle left by the given angle. Also, tell students to use the "right(angle)" function, which turns the turtle right by the given angle.

Check that students are adding different colors to their "Draw a star" DIY.

Are students struggling with the "Chinese numbers" DIY? Tell them to use the code in the "pen control" example as a reference.

Remind students to click the "submit project" button when they are done with their DIY projects—that way, you can check out their fabulous creations!  
Tell students to click the "Next" button to move on to the next module.

We DO 10 mins

Demonstrate to the students how to import the turtle Library and change the color to a student choice.

You DO 5 mins

Reflecting on useful libraries can be for coding.

1. What are some of the benefits?
2. What are some of the negatives?