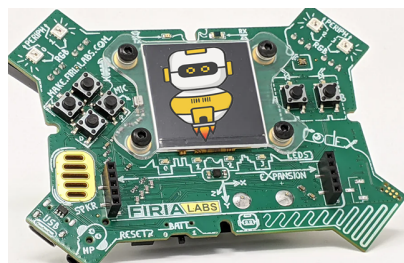


Elementary School CodeX Guide (4th-6th Grade)



Students learn the most when they are engaged in project-based hands-on physical computing. With CodeX and the CodeSpace editor, watch students step up to computer science with real-world Python code! Use our authentic and motivating curriculum with our powerful and fun physical device to ignite in students an enduring passion for creating and kindle their creativity, critical thinking and a genuine love for coding and robotics.

Unit 1: Missions 0-5 / 7½-9 hours

Students will learn the basics of programming in Python. Students start by creating an account and becoming familiar with CodeSpace. Then they learn about CodeX. Students start programming in Mission 3 and learn how to control the LED pixel lights. Then they learn how to turn on and off the pixel LEDs, display an image, and play audio files. Each programming mission is followed by a remix option for students to create their own programs using the skills and concepts taught in the missions.

Unit 1: Teacher Resources	
Student Attitude Survey (Mission 0)	Link here
Unit 1 Vocabulary by Mission	Link here
Unit 1 Python commands by Mission	Link here
Mission 0 Lesson Prep (with links)	Link here
Mission 1 Lesson Prep (with links)	Link here
Mission 2 Lesson Prep (with links)	Link here
Mission 3 Lesson Prep (with links) Mission 3 Remix Lesson Prep	Link here Link here
Mission 4 Lesson Prep (with remix & links)	Link here
Mission 5 Lesson Prep (with remix & links)	Link here

Unit 1: Missions 0 - 5 Pacing		
Mission 0	Getting Started	10-20 minutes
Mission 1	Welcome	30-40 minutes
Mission 2	Introducing CodeX	30-40 minutes
Mission 3	Light Show	45 minutes
Remix 3	-- original program	90 minutes
Mission 4	Display Games	90 minutes
Remix 4	-- original program	60-90 minutes
Mission 5	Micro Musician	30-45 minutes
Remix 5	-- original program	60-90 minutes

Review Kahoots

Missions 1, 2, 3	Mission 4	Mission 5	Unit 1 Vocab Review / Unit 1 Code Review
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Assessment

Each assessment is created in Microsoft Forms and a Google Form quiz. They can be used for pre- and post- data, or just as a unit summative assessment. Request access to create your own form that can be customized, or use the questions to create a test in your LMS.

[Google Doc with test questions \(2 parts\)](#)

Unit 1 Vocabulary Test (Microsoft-duplicate)	Unit 1 Concepts and Coding Test (Microsoft-duplicate)
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[Unit 1 Vocabulary Test](#) (Google form-request a copy)

[Unit 1 Concepts and Coding Test](#) (request a copy)

Unit 2: Missions 6-8 / 6-9 hours

Students continue their programming journey by using buttons as input and using loops to repeat code. They learn more about conditions and ways to stop a loop, including a break statement. Students learn about lists and how to use them in interesting programs to customize a billboard and answer bot. Each programming mission is followed by a remix option for students to create their own programs using the skills and concepts taught in the missions.

Unit 2: Teacher Resources	
Unit 2 Vocabulary by Mission	Link here
Unit 2 Python commands by Mission	Link here
Mission 6 Lesson Prep (with remix & links)	Link here
Mission 7 Lesson Prep (with remix & links)	Link here
Mission 8 Lesson Prep (with remix & links)	Link here
(optional) Adding JPG images to CodeX	Link here

Unit 2: Missions 6 - 8 Pacing		
Mission 6	Heartbeat	60-90 minutes
Remix 6	-- original program	60-90 minutes
Mission 7	Personal Billboard	60-90 minutes
Remix 7	-- original program	60-90 minutes
Mission 8	Answer Bot	45-60 minutes
Optional	Adding JPG images	30-60 minutes
Remix 8	-- original program	60-90 minutes

Review Kahoots

Missions 6	Mission 7	Mission 8	Unit 2 Vocab Review / Unit 2 Code Review
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Assessment

Each assessment is created in Microsoft Forms and a Google Form quiz. They can be used for pre- and post- data, or just as a unit summative assessment. For the Microsoft Form, click on the link to duplicate. For the Google Form, request access to create your own form. You can also use the questions to create a test in your LMS.

[Google Doc with test questions \(2 parts\)](#)

Unit 2 Vocab Test (Microsoft-duplicate) Unit 2 Vocabulary Test (Google-request a copy)	Unit 2 Concepts and Coding Test (Microsoft-duplicate) Unit 2 Concepts and Coding Test (Google-request a copy)
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Unit 3: Missions 9-12 / 6-9 hours

Students programming skills improve with creating and using functions, parameters, arguments and local variables. They also learn about some of CodeX's built-in features and sensors, which allows additional input and output capabilities. They use the internal clock library, the accelerometer and the light sensor.

Unit 3: Teacher Resources	
Unit 3 Vocabulary by Mission	Link here
Unit 3 Python commands by Mission	Link here
Mission 9 Lesson Prep (with remix & links)	Link here
Mission 10 Lesson Prep (with remix & links)	Link here
Mission 11 Lesson Prep (with remix & links)	Link here
Mission 12 Lesson Prep (with remix & links)	Link here

Unit 3: Missions 9-12 Pacing		
Mission 9	Game Spinner	60-90 minutes
Remix 9	-- original program	60-90 minutes
Mission 10	Reaction Tester	45-60 minutes
Remix 10	-- original program	45-60 minutes
Mission 11	Spirit Level	45-60 minutes
Remix 11	-- original program	45-60 minutes
Mission 12	Night Light	45-60 minutes
Remix 12	-- original program	45-60 minutes

Review Kahoots

Missions 9	Mission 10	Mission 11	Mission 12	Unit 3 Vocab Review / Unit 3 Code Review
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Assessment

Each assessment is created in Microsoft Forms and a Google Form quiz. They can be used for pre- and post- data, or just as a unit summative assessment. For the Microsoft Form, click on the link to duplicate. For the Google Form, request access to create your own form. You can also use the questions to create a test in your LMS.

[Google Doc with test questions \(2 parts\)](#)

Unit 3 Vocab Test (Microsoft-duplicate) Unit 3 Vocab Test (Google-request a copy)	Unit 3 Concepts and Coding Test (Microsoft-duplicate) Unit 3 Concepts and Coding Test (Google-request a copy)
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