



## Lesson 1.8: Challenge: Make a Keyboard

<https://codehs.com/course/7968/lesson/1.8>

<b>Description</b>	In this lesson, students will implement the skills they've learned from the previous lessons to create a working, clickable keyboard.
<b>Objective</b>	Students will be able to: <ul style="list-style-type: none"><li>• Create a working, clickable keyboard using only JavaScript</li></ul>
<b>Activities</b>	<a href="#">1.8.1 Connection: Challenge Overview!</a> <a href="#">1.8.2 Exercise: Make Button</a> <a href="#">1.8.3 Exercise: Make Text</a> <a href="#">1.8.4 Challenge: Make a Keyboard</a>
<b>Prior Knowledge</b>	<ul style="list-style-type: none"><li>• <code>this</code> keyword</li><li>• The <code>button</code> tag</li><li>• Click events and event listeners</li><li>• Iteration and Lists</li></ul>
<b>Planning Notes</b>	<ul style="list-style-type: none"><li>• This is a challenge lesson. The assignments in this lesson build upon one another to complete a specific task. This lesson should take between 1 - 4 class periods for students to complete. Consider pairing students to complete it.</li><li>• There is a handout associated with this lesson. The handout is meant to be used if students participate in a Gallery Walk to showcase their challenge solutions.</li></ul>
<b>Standards Addressed</b>	
<b>Teaching and Learning Strategies</b>	<b>Lesson Opener:</b> <ul style="list-style-type: none"><li>• Put the <i>Challenge Overview</i> assignment on the board or projector. Explain to students that this lesson will combine all of the skills they've learned thus far in the course to create a working keyboard. Explain that they will complete this assignment using only JavaScript! (5 mins)</li><li>• Have students brainstorm ways to solve this problem before going to the other assignments in the lesson. Have them write a top down</li></ul>

design plan with the person sitting next to them. Then, have students share their ideas with the class. (5- 10 mins)

### Activities:

- Complete *Make Button*, *Make Text*, and *Make a Keyboard*. (60- 90 mins)
  - Consider pairing students before completing the exercises so they can work together on them.
  - These will most likely take up more than one class period. Consider splitting the activities up by day to make sure students have appropriate expectations.
  - Encourage students to personalize their keyboard, and go beyond the scope of the assignment!

### Lesson Closer:

- Have students present their keyboard as a gallery walk. Students should test one another's keyboards for functionality, and leave notes of encouragement if students added a personal touch to the project. Highlight a few students who went above and beyond to demonstrate how creative coding can be. (15- 30 mins)

### Beginning of Class:

- What functions and skills that we've learned so far will we need to use to complete this task?
  - *Answers will vary. Students should consider buttons, click events, and innerHTML.*
- In order to complete this assignment, what steps do we need to take? Write down a list of actionable steps.
  - *Answers will vary. Students should consider, making a button, populating that button with text, and making the buttons clickable.*

### End of Class:

- Were there any projects that stood out to you? Why?
  - *Answers will vary.*
- How might you improve your design after seeing others?
  - *Answers will vary.*
- What did you think of the challenge? Was your initial design plan similar to the one that the assignments used to complete the task?
  - *Answers will vary.*

### Discussion Questions

### Resources/Handouts

[Gallery Walk](#)

## Vocabulary

Term	Definition	
Modification: Advanced	Modification: Special Education	Modification: English Language Learners
<ul style="list-style-type: none"> <li>• If students finish early, have them help out pairs that are struggling.</li> <li>• Require students to add to the keyboard so that it can delete text, and add special characters.</li> </ul>	<ul style="list-style-type: none"> <li>• Have students pair up to complete the assignments.</li> <li>• Require students to hand write a plan to complete the assignment. Approve the plan before students begin working on the challenge.</li> </ul>	<ul style="list-style-type: none"> <li>• Have students pair up to complete the assignments.</li> <li>• Require students to hand write a plan to complete the assignment. Approve the plan before students begin working on the challenge.</li> </ul>