Bootstrap:1

Would you like to attend a Bootstrap Workshop? Check our workshops page to stay up-to-date on our workshop schedule. Don't see a workshop in your area? Let us know, and we'll work with you to bring one to your school or district.

We provide all of the our materials *free of charge*, to anyone who is interested in using our lesson plans or student workbooks.

- Student Workbook [PDF | OpenOffice] - The lesson plans linked below are tightly integrated into the Student Workbook, which should be used with the curriculum. A **Teacher's Edition** is also available upon request. Please fill out a request using our online form, and we'll get back to you right away.
- Unit 1 [html | pdf] - Students discuss the components of their favorite videogames, and discover that they can be reduced to a series of coordinates. They then explore coordinates in Cartesian space, and identify the coordinates for the characters in a game at various points in time. Once they are comfortable with coordinates, they brainstorm their own games and create sample coordinate lists for different points in time in their own game.
- Unit 2 [html | pdf] - Students are introduced to a set-mapping representation for functions, in which the function object exists as a means of translating points from a Domain into a Range. Coupled with their understanding of Circles of Evaluation, students generalize their understanding of functions to include other datatypes, including Strings and Images.
- Unit 3 [html | pdf] - Students are introduced to the Definitions window, and learn the syntax for defining values of various types. They are also introduced to the syntax of defining functions and creating examples.
- Unit 4 [html | pdf] - Students are introduced to the Design Recipe and apply it to simple problems.
- Unit 5 [html | pdf] - Students define functions that map position n to position n+1, allowing them to move their dangers, targets, and projectiles.
- Unit 6 [html | pdf] - Students discover Boolean types, and use them to create programs that test values, and then model scenarios using these programs.
- Unit 7 [html | pdf] - Students use geometry and knowledge of basic image functions to design characters for their games, this time using conditional branching to accommodate different key-events.
- Unit 8 [html | pdf] - Students discuss and then prove the Pythagorean theorem, and use this theorem - in conjunction with Booleans - in their games to detect when a collision has occurred.
- Unit 9 [html | pdf] - Students will edit game details and prepare for their Launch Party!
- Unit 10 [html | pdf] - Students translate from Racket into Algebra, and back. They then apply the Design Recipe to solve common word problems from Algebra texts.
- Supplemental Lessons [html | pdf] - For teachers looking for additional exercises, we have compiled many activities for students to go deeper into the material. Have students use composition and coordinates to create flags for their countries of origin, or for a country they want to make up! Have them use *randomness* and *trigonometric functions* for more sophisticated motion, or introduce *data structures* for more sophisticated games!

Of course, there's more to a curriculum than software and lesson plans! We also provide a number of resources to educators, including standards alignment, an answer key for the programming exercises and forums where they can ask questions and share ideas.

- Teacher-Only Resources - We also offer several teachers-only materials, including an answer key to the student workbook, a quick-start guide to making the final project, and pre- and post-tests for teachers who are paticipating in our research study. For access to these materials, please fill out the password request form. We'll get back to you soon with the necessary login information.
- Standards Alignment - Find out how Bootstrap aligns with Common Core Standards for Mathematics, as well as the standards for Mathematical Practice.
- Support Forums [Announcements | Discussion] - Want to be kept up-to-date about Bootstrap events, workshops, and curricular changes? Want to ask a question or pose a lesson idea for other Bootstrap teachers? These forums are the place to do it.