BJC 2020 Updates

Overview

- The College Board has revised the CSP standards. The new 2020 standards will begin to apply in September of 2020 and will first be tested on the Spring 2021 AP exam.
- BJC has completed the re-endorsement process for these new standards, and the new version is available at bjc.edc.org (older versions are available via the Development Updates page linked to in the lower right of the Teacher Guide).

General Changes

- **New graphic design:** landing page, header footer, and in-page style (all text and exercises on a white background is required on each page)
- **Vocabulary boxes** clarify essential language.
- **"On the Exam" boxes** show how Snap*!* blocks translate to the language on the exam.
- **Supplemental "If There is Time" and "Take it Further" activities are now hidden** behind a link so that the lab pages don't feel as long.
- Additional "self-check" **formative assessments** were added to the student facing pages.
- **New written end-of-unit summative assessments** have been developed for each unit.
- **Solutions** and **pacing** suggestions have been updated.
- The **Teacher Guide** is no longer password protected; now, only the solutions and assessments pages are password protected.
- The College Board has eliminated the **Explore Task** and replaced it with "Opportunities to Investigate Computing Innovations." BJC has met this requirement through a series of activities embedded in the student lab pages.
- Following the recommendations in the AP Chief Reader's Report, BJC added a **Practice Create Task** before the formal Create Task to give students a chance to understand the specifications of the activity, ask questions, explore the technological requirements, and discuss how well their work measures up against the grading rubric.
- Sneak previews of **recursion** are now scattered throughout the course.
- A **Snap*!* Crash Course** (a quick introduction to Snap*!* programming for teachers and for students who join mid-year) and a **Snap*!* Cheat Sheet** (a correlation between Snap! and the AP Exam reference sheet) have been added.
- Snap*!* 6.0 works on iPads and fixes a Chrome bug where Snap*!* froze with white screen.
- Optional Projects have been modified across the course—some former lab pages or labs (e.g., "Click to Collect Points," "Diagonal Design," "Pascal's Triangle," "Sorting"), some adapted from prior versions of the course (e.g., "Row of Houses," "Kaleidoscope").

Selected Unit by Unit Structural Changes to Core Lab Pages

The completely new and the most significantly changed labs are listed in bold.

Unit 1

- Lab 1 “Click Alonzo Game”—abbreviated into a **one-day** lab
- Lab 2 “Gossip”—includes Pair Programming content formerly in Lab 1 and a preliminary intro to recursion; Greet Player replaced by intro to IF so that the intro to global variables comes after all three types of local variables
- Lab 3 “Modern Art with Polygons”—restructured for pedagogical clarity

Unit 2

- Lab 1 “Games”—dropped “Greet Player”; moved exporting/importing to Lab 4; added “Choosing a Costume” page to formalize ITEM OF before abstract data types and FOR EACH in Lab 2
- **Lab 2 “Making Lists”**—bought back Shopping List as first list-focused project; replaced “Click to Collect Points” (now an Optional Project) with a “Quiz App” to better motivate abstract data types (quiz questions obviously must be paired with their answers)
- **Lab 3 “Making Decisions”**—expanded first page into three pages; added exploration of predicate expressions and formative self-check activities
- **Lab 4 “Making Computers Do Math”**—new lab focused on functional programming; students build and gather mathematical blocks into a library
- “Dealing with Complexity” content moved into Unit 3

Unit 3

- Lab 1 “Dealing with Complexity”—moved from Unit 2; Page 1 “Robot in a Maze” reconceived
- Lab 2 “Contact List”—added a page with a birthdate nested abstract data type; revised introduction to map procedure on “Transforming Every List Item” page
- **Unit 5 Lab 3 “Turning Data into Information”**—replaces two former Unit 3 labs about data: “Building Data Visualization Tools” and “Big Data”
- Lab 5: “Computers and Work”—moved from Unit 5

Practice Create Task

- Uses the same student-facing pages as the Create Task as preparation

Unit 4

- Lab 1 “Computer Networks”—consolidated prior first two labs into one (The updated standards dramatically reduced the required content on the Internet.)
- Lab 2 “Cybersecurity”—improvements for focus and new standards
- Lab 3 “Community and Online Interactions”—added pages to address standards

- Lab 4 “Data Representation and Compression”—moved from Unit 6 (without hexadecimal)

Unit 5

- **Lab 1 “Search Algorithms and Efficiency”**—replaces two former labs: “Search Algorithms” and “Timing Experiments”; efficiency now taught through comparing binary and linear search; added page about parallel and distributed computing
- Lab 2 “Why Use Simulations?”—“Flipping a Coin Project” dropped
- **Lab 3 “Turning Data into Information”**—new lab supports new standards, uses new data processing capabilities in Snap*!*, and provides opportunities to use higher order functions and functional programming
- Lab 4 “Unsolvable and Undecidable Problems”—revised

Unit 6

- Now designed for use after the spring exam because the computer systems content is no longer required in the new Framework.
- “Data Representation and Compression” content (which *is* still required) moved to Unit 4
- Lab 2 “History and Impact of Computers”—moved from Lab 3; the page “Global Impact of Computing” was dropped, though all the videos can still be found in the bjc2xlectures on the Teacher Resources page

Unit 7

- Minor pedagogical changes

Unit 8

- Lab 1: “Recursive Reporters”—merged two short pages covering one idea
- Lab 2: “Base Conversion”—broken out into its own lab and general improvements
- Lab 3: “Subsets”—broken out into its own lab and updated; merged two short pages covering one idea
- Lab 4: “Building Higher Order Functions”—renamed an existing lab and general improvements
- Some former lab content has been made into Optional Projects (“Pascal's Triangle” and “Sorting”)

To report problems with the curriculum, email contact@bjc.berkeley.edu or post to the BJC TEACHERS Piazza group.