### **Computing Innovations**

### **Duration: 1 Week**

### **Summary**

In this lesson, students will gain an understanding of how the course is run and what type of topics will be covered throughout the course. In the Introductory assignment, they will create a Google Document including their name and some information about their computer access and use. Students will also learn about the Computing Innovations Project and choose their topic.

The video lectures introduce the concept that computer programming is fun and creative, introduces what Computer Science Principles is, and introduces some computing innovations and their impacts. The wikibook readings introduce the seven Big Ideas in AP Computer Science Principles, and also list some computing innovations that the AP Exam expects students to understand.

### **Learning Objectives**

* Describe these Big Ideas in AP Computer Science Principles:
  + Computing is a creative activity
  + Abstraction
  + Algorithms
  + Data and Its analysis
  + Programming enables problem solving, human expression, and creation of knowledge
  + The Internet pervades modern computing
  + Computing has global impacts
* Explain how computing innovations affect communication, interaction, and cognition. [AP CSP P4,LO 7.1.1]
* Explain how people participate in a problem solving process that scales. [AP CSP P4, LO 7.1.2]
* Explain how computing has impacted innovations in other fields. [AP CSP P1, LO 7.2.1]
* Analyze the beneficial and harmful effects of computing. [AP CSP P4, LO 7.3.1]

### **Course Material**

* Watch: [Computer Programming - What Most Schools Don't Teach](https://www.youtube.com/watch?v=nKIu9yen5nc) [5:44]
* Watch: [Introducing AP Computer Science Principles](https://youtu.be/S1vFrz4NETg) [2:14]
* Read: [Introduction To Computer Science Principles](http://computing-concepts.cs.uri.edu/index.php/Introduction_To_Computer_Science_Principles)
* Watch: [The Impact of Innovation](https://www.youtube.com/watch?v=Hg4U8z2OvT8&feature=youtu.be) [4:33]
* Read: [Computing Innovations](http://computing-concepts.cs.uri.edu/index.php/Computing_Innovations)
* Read: [Blown To Bits - Chapter 1 (Digital Explosion)](http://www.bitsbook.com/wp-content/uploads/2008/12/chapter1.pdf)

### **Assessments**

* Conceptual Quiz:
  + [Intro to CSP](https://docs.google.com/document/d/1TzubRAd7Dm6bVOQpO_os9H2mZBZ9nr-qTJ9Uay69YvI/edit?usp=sharing) (requires access)
* Practical Assignment:
  + [Computing Innovations](https://drive.google.com/open?id=1D_j3J2Bid-qavgj7iKqAopi-jhTqIQX5RHKCoNXBxiY) | [Grading Rubric](https://docs.google.com/spreadsheets/d/16zd46gKPqhwbHnmSiPFdckLA3UkOu6EbXgDDxhvHLRc/edit?usp=sharing)
  + [BB Ch 1: Digital Explosion](https://drive.google.com/open?id=1xxIV7HBjaEL5LE3x8XEKIxzU_KwSiVVUtSU4fQeJwyU)