



## Sample Syllabus 3 Contents

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## Curricular Requirements

- CR1a Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P1: Connecting Computing.
- See pages 3, 4, 6, 7, 9
- CR1b Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P2: Creating Computational Artifacts.
- See pages 3, 4, 5, 6, 7
- CR1c Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P3: Abstracting.
- See pages 4, 5, 6, 7, 8
- CR1d Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P4: Analyzing Problems and Artifacts.
- See pages 3, 4, 5, 6, 7, 8, 9
- CR1e Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P5: Communicating (both orally and written).
- See pages 3, 6, 8
- CR1f Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P6: Collaborating.
- See pages 3, 4, 5, 6, 7
- CR2a Students are provided with opportunities to meet learning objectives within Big Idea 1: Creativity. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.
- See pages 3, 4, 5
- CR2b Students are provided with opportunities to meet learning objectives within Big Idea 2: Abstraction. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.
- See pages 4, 5, 6, 7
- CR2c Students are provided with opportunities to meet learning objectives within Big Idea 3: Data and Information. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.
- See page 6
- CR2d Students are provided with opportunities to meet learning objectives within Big Idea 4: Algorithms. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.
- See page 6



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- CR2e Students are provided with opportunities to meet learning objectives within Big Idea 5: Programming. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.
- See pages 4, 5, 6, 7
- CR2f Students are provided with opportunities to meet learning objectives within Big Idea 6: The Internet. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.
- See page 8
- CR2g Students are provided with opportunities to meet learning objectives within Big Idea 7: Global Impact. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.
- See pages 3, 4, 6, 9
- CR3 Students are provided the required amount of class time to complete the AP Through-Course Assessment *Explore - Impact of Computing Innovations* Performance Task.
- See page 9
- CR4 Students are provided the required amount of class time to complete the AP Through-Course Assessment *Create - Applications from Ideas* Performance Task.
- See page 9



## AP Computer Science Principles Syllabus

### Computational Thinking Practices, Big Ideas, and Learning Objectives

Welcome to AP Computer Science Principles! This AP course is structured around the computational thinking practices and big ideas as outlined in the AP Computer Science Principles Curriculum Framework.

#### Computational Thinking Practices

P1: Connecting Computing

P2: Creating Computational Artifacts

P3: Abstracting

P4: Analyzing Problems and Artifacts

P5: Communicating

P6: Collaborating

#### Big Idea 1: Creativity

1.1.1 Apply a creative development process when creating computational artifacts. [P2]

1.2.1 Create a computational artifact for creative expression. [P2]

1.2.2 Create a computational artifact using computing tools and techniques to solve a problem. [P2]

1.2.3 Create a new computational artifact by combining or modifying existing artifacts. [P2]

1.2.4 Collaborate in the creation of computational artifacts. [P6]

1.2.5 Analyze the correctness, usability, functionality, and suitability of computational artifacts. [P4]

1.3.1 Use computing tools and techniques for creative expression. [P2]

#### Big Idea 2: Abstraction

2.1.1 Describe the variety of abstractions used to represent data. [P3]

2.1.2 Explain how binary sequences are used to represent digital data. [P5]

2.2.1 Develop an abstraction when writing a program or creating other computational artifacts. [P2]

2.2.2 Use multiple levels of abstraction to write programs. [P3]

2.2.3 Identify multiple levels of abstractions that are used when writing programs. [P3]

2.3.1 Use models and simulations to represent phenomena. [P3]

2.3.2 Use models and simulations to formulate, refine, and test hypotheses. [P3]

#### Big Idea 3: Data and Information

3.1.1 Find patterns and test hypotheses about digitally processed information to gain insight and knowledge. [P4]

3.1.2 Collaborate when processing information to gain insight and knowledge. [P6]

3.1.3 Explain the insight and knowledge gained from digitally processed data by using appropriate visualizations, notations, and precise language. [P5]

3.2.1 Extract information from data to discover and explain connections or trends. [P1]

3.2.2. Determine how large data sets impact the use of computational processes to discover information and knowledge. [P3]

3.3.1 Analyze how data representation, storage, security, and transmission of data involve computational manipulation of information. [P4]

### **Big Idea 4: Algorithms**

4.1.1 Develop an algorithm for implementation in a program. [P2]

4.1.2 Express an algorithm in a language. [P5]

4.2.1 Explain the difference between algorithms that run in a reasonable time and those that do not run in a reasonable time. [P1]

4.2.2 Explain the difference between solvable and unsolvable problems in computer science. [P1]

4.2.3 Explain the existence of undecidable problems in computer science. [P1]

4.2.4 Evaluate algorithms analytically and empirically for efficiency, correctness, and clarity. [P4]

### **Big Idea 5: Programming**

5.1.1 Develop a program for creative expression, to satisfy personal curiosity, or to create new knowledge. [P2]

5.1.2 Develop a correct program to solve problems. [P2]

5.1.3 Collaborate to develop a program. [P6]

5.2.1 Explain how programs implement algorithms. [P3]

5.3.1 Use abstraction to manage complexity in programs. [P3]

5.4.1 Evaluate the correctness of a program. [P4]

5.5.1 Employ appropriate mathematical and logical concepts in programming. [P1]

### **Big Idea 6: The Internet**

6.1.1 Explain the abstractions in the Internet and how the Internet functions. [P3]

6.2.1 Explain the characteristics of the Internet and the systems built on it. [P5]

6.2.2 Explain how the characteristics of the Internet influence the systems built on it. [P4]

6.3.1 Identify existing cyber-security concerns and potential options to address these issues with the Internet and the systems built on it. [P1]

### **Big Idea 7: Global Impact**

7.1.1 Explain how computing innovations affect communication, interaction, and cognition. [P4]

7.1.2 Explain how people participate in a problem-solving process that scales. [P4]

7.2.1 Explain how computing has impacted innovations in other fields. [P1]

7.3.1 Analyze the beneficial and harmful effects of computing. [P4]

7.4.1 Explain the connections between computing and real-world contexts, including economic, social, and cultural contexts. [P1]

7.5.1 Access, manage, and attribute information using effective strategies. [P1]

7.5.2 Evaluate online and print sources for appropriateness and credibility. [P5]

Listed below are assignments and activities that address each big idea. These assignments and activities have been labeled with the associated learning objectives and computational thinking practices.

## Primary Programming Environment

IntroComputing.org website (Nick Parlante, Stanford University), using the JavaScript programming language.

## Resources

- Abelson, Hal, Ken Ledeen, and Harry Lewis. *Blown to Bits: Your Life, Liberty, and Happiness After the Digital Explosion*. Boston: Addison-Wesley Professional, 2008.
- Various online articles, *Association for Computing Machinery* at acm.org.

## Units

### Exploration 0: Introduction to CSP

Timeframe: 10 Blocks -- Late August, early September

Instructional Activities and Associated Learning Objectives from the Curriculum Framework:

- LO 1.2.3 [P2], LO 1.2.4 [P6]: Create Piazza accounts and interact with peers through posts on Piazza. [CR1b] [CR1f] [CR2a]
- LO 1.2.1 [P2]: Use Google accounts to create course journals to record personal expressions on course activities. [CR1b] [CR2a]
- LO 7.1.1 [P4], LO 7.5.1 [P1], LO 7.5.2 [P5]: Research and write a paper on selected Association for Computing Machinery (ACM) articles about computing and the impact of computing. [CR1a] [CR1d] [CR1e] [CR2g]
- LO 7.4.1 [P1]: Read and summarize assigned chapters of *Blown to Bits*. [CR1a] [CR2g]
- Discuss big ideas and computational thinking practices.

[CR1b] — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P2: Creating Computational Artifacts.

[CR1f] — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P6: Collaborating.

[CR2a] — Students are provided with opportunities to meet learning objectives within Big Idea 1: Creativity. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.

[CR1a] — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P1: Connecting Computing.

[CR1d] — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P4: Analyzing Problems and Artifacts.

**[CR1e]** — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P5: Communicating (both orally and written).

**[CR2g]** — Students are provided with opportunities to meet learning objectives within Big Idea 7: Global Impact. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.

Formative Assessment:

- Piazza participation and instructor feedback.

Summative Assessment:

- Introduction to CSP multiple choice.

### Exploration 1: Creativity and Computing

Timeframe: 10 Blocks -- September, late February

Instructional Activities and Associated Learning Objectives from the Curriculum Framework:

- LO 2.1.1 [P3], LO 2.2.1 [P2], LO 2.2.2 [P3], LO 2.2.3 [P3]: Introduction to Programming - “Introduction and Code” and “Digital Images;” class discussions on code development and the relationship to digital images. **[CR1b]** **[CR1c]** **[CR2b]**
- LO 1.3.1 [P2], LO 5.1.1 [P2], LO 5.5.1 [P1], LO 7.2.1 [P1]: Introduction to Programming - Create images of personal importance; post and discuss images and code on Piazza. **[CR1a]** **[CR1b]** **[CR2a]** **[CR2e]** **[CR2g]**
- LO 1.1.1 [P2], LO 1.2.1 [P2], LO 1.2.2 [P2], LO 1.2.3 [P2], LO 1.2.4 [P6], LO 1.2.5 [P4]: The Chaos Game - Create images by modifying and extending given code. **[CR1b]** **[CR1d]** **[CR1f]** **[CR2a]**
- LO 1.1.1 [P2]: Use online tools to generate art. **[CR1b]** **[CR2a]**
- LO 1.3.1 [P2]: Explore creativity associated with digital artifacts by participating in all-school art show with art generated in class. **[CR1b]** **[CR2a]**

**[CR1b]** — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P2: Creating Computational Artifacts.

**[CR1c]** — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P3: Abstracting.

**[CR2b]** — Students are provided with opportunities to meet learning objectives within Big Idea 2: Abstraction. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.

**[CR1a]** — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P1: Connecting Computing.

**[CR2a]** — Students are provided with opportunities to meet learning objectives within Big Idea 1: Creativity. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.

**[CR2e]** — Students are provided with opportunities to meet learning objectives within Big Idea 5: Programming. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.

**[CR2g]** — Students are provided with opportunities to meet learning objectives within Big Idea 7: Global Impact. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.

**[CR1d]** — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P4: Analyzing Problems and Artifacts.

**[CR1f]** — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P6: Collaborating.

Formative Assessment:

- Write JavaScript code within IntroComputing.org.
- Use online tools to generate art.
- Post and read results and insights using Piazza.

Summative Assessment:

- Create digital artifacts to meet specifications and share images and code through private Piazza posts and student journal.

## Exploration 2: Identifying and Using Abstractions

Timeframe: Six Blocks -- October, February

Instructional Activities and Associated Learning Objectives from the Curriculum Framework:

- LO 2.1.1 [P3], LO 2.2.2 [P3], LO 2.2.3 [P3]: Class discussion - Identify and describe abstractions in daily life. **[CR1c]** **[CR2b]**
- LO 2.2.3 [P3]: Class discussion - Identify and describe abstractions used in programming examples presented on Piazza. **[CR1c]** **[CR2b]**
- LO 1.2.4 [P6], LO 2.2.1 [P2], LO 5.1.1 [P2], LO 5.1.2 [P2], LO 5.1.3 [P6], LO 5.3.1 [P3], LO 5.4.1 [P4]: Use abstractions when writing assigned programs in JavaScript. Working in pairs, identify and use abstractions for enhanced creativity and problem solving in assigned programming activities and assigned problems involving digital imaging. **[CR1b]** **[CR1c]** **[CR1d]** **[CR1f]** **[CR2a]** **[CR2b]** **[CR2e]**

**[CR1c]** — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P3: Abstracting.

**[CR2b]** — Students are provided with opportunities to meet learning objectives within Big Idea 2: Abstraction. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.

**[CR1b]** — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P2: Creating Computational Artifacts.

**[CR1d]** — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P4: Analyzing Problems and Artifacts.

**[CR1f]** — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P6: Collaborating.

**[CR2a]** — Students are provided with opportunities to meet learning objectives within Big Idea 1: Creativity. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.

**[CR2e]** — Students are provided with opportunities to meet learning objectives within Big Idea 5: Programming. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks

Formative Assessment:

- Use Piazza to post and read results and insights about use of abstractions in personal and team projects.

Summative Assessment:

- Identify, create, and describe the use of abstraction in specific programming assignments.



### Exploration 3: Using Data

Timeframe: Six Blocks -- November

Instructional Activities and Associated Learning Objectives from the Curriculum Framework:

- LO 3.1.2 [P6], LO 3.2.2 [P3]: Working with a partner, find online data sources of interest to both of you to gain insight and knowledge from the data investigated. [CR1c] [CR1f] [CR2c]
- LO 3.2.1 [P1]: Collect, clean, and format data found. [CR1a] [CR2c]
- LO 3.1.1 [P4], LO 3.1.3 [P5]: Using computing tools, create a visualization of the data to answer questions or illustrate trends. [CR1d] [CR1e] [CR2c]
- LO 7.1.1 [P4]: Read and discuss *Blown to Bits*, “You Can’t Say That on the Internet.” [CR1d] [CR2g]

[CR1c] — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P3: Abstracting.

[CR1f] — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P6: Collaborating.

[CR2c] — Students are provided with opportunities to meet learning objectives within Big Idea 3: Data and Information. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.

[CR1a] — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P1: Connecting Computing.

[CR1d] — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P4: Analyzing Problems and Artifacts.

[CR1e] — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P5: Communicating (both orally and written).

[CR2g] — Students are provided with opportunities to meet learning objectives within Big Idea 7: Global Impact. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.

Formative Assessment:

- Collecting, cleaning, and formatting data.
- Post and read results and insights using Piazza.

Summative Assessment:

- Using Data: Cleaning, filtering, and formatting data to answer questions about the data.

### Exploration 4: Exploring Algorithms

Timeframe: Six Blocks -- Early August, early September, late February

Instructional Activities and Associated Learning Objectives from the Curriculum Framework:

- LO 2.2.1 [P2], LO 2.2.2 [P3], LO 2.2.3 [P3], LO 4.1.1 [P2], LO 4.1.2 [P5], LO 5.2.1 [P3], LO 5.3.1 [P3]: Create algorithms to manipulate images. [CR1b] [CR1c] [CR1e] [CR2b] [CR2d] [CR2e]
- LO 2.1.1 [P3], LO 4.2.1 [P1]: Discuss Huffman coding trees. [CR1a] [CR1c] [CR2b] [CR2d]
- LO 4.2.4 [P4]: Discuss the comparison of algorithms for image file creation. [CR1d] [CR2d]
- LO 4.1.1 [P2], LO 4.1.2 [P5], LO 5.2.1 [P3], LO 5.3.1 [P3]: Design algorithms for map creation. [CR1b] [CR1c] [CR1e] [CR2d] [CR2e]

**[CR1b]** — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P2: Creating Computational Artifacts.

**[CR1c]** — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P3: Abstracting.

**[CR1e]** — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P5: Communicating (both orally and written).

**[CR2b]** — Students are provided with opportunities to meet learning objectives within Big Idea 2: Abstraction. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.

**[CR2d]** — Students are provided with opportunities to meet learning objectives within Big Idea 4: Algorithms. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.

**[CR2e]** — Students are provided with opportunities to meet learning objectives within Big Idea 5: Programming. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.

**[CR1a]** — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P1: Connecting Computing.

**[CR1d]** — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P4: Analyzing Problems and Artifacts.

Formative Assessment:

- Writing JavaScript code using [IntroComputing.org](http://IntroComputing.org).
- Building Huffman coding trees to message encryption and decryption.
- Creating map websites.
- Piazza participation and instructor feedback.

Summative Assessment:

- Exploring algorithms; Google Forms test.

**Exploration 5: Problem Solving with Programming**

Timeframe: 14 Blocks -- December, January, April

Instructional Activities and Associated Learning Objectives from the Curriculum Framework:

- LO 2.2.1 [P2], LO 2.2.2 [P3], LO 5.1.1 [P2], LO 5.1.2 [P2], LO 5.3.1 [P3], LO 5.4.1 [P4], LO 5.5.1 [P1]: Design and write programs - Baby Name Analysis. **[CR1a] [CR1b] [CR1c] [CR1d] [CR2b] [CR2e]**
- LO 2.2.1 [P2], LO 2.2.2 [P3], LO 5.1.1 [P2], LO 5.3.1 [P3], LO 5.4.1 [P4], LO 5.5.1 [P1]: Design and write programs - Mad Libs. **[CR1a] [CR1b] [CR1c] [CR1d] [CR2b] [CR2e]**
- LO 5.1.2 [P2], LO 5.1.3 [P6], LO 5.3.1 [P3], LO 5.4.1 [P4], LO 5.5.1 [P1]: Collaboratively design and write programs using maps for problem solving. **[CR1a] [CR1b] [CR1c] [CR1d], [CR1f] [CR2e]**
- LO 2.2.3 [P3], LO 5.2.1 [P3]: Discuss abstractions and algorithms used in these programming assignments. **[CR1c] [CR2b] [CR2e]**

**[CR1a]** — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P1: Connecting Computing.

**[CR1b]** — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P2: Creating Computational Artifacts.

[CR1c] — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P3: Abstracting.

[CR1d] — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P4: Analyzing Problems and Artifacts.

[CR2b] — Students are provided with opportunities to meet learning objectives within Big Idea 2: Abstraction. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.

[CR2e] — Students are provided with opportunities to meet learning objectives within Big Idea 5: Programming. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.

[CR1f] — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P6: Collaborating.

Formative Assessment:

- Writing programs to solve given problems.
- Piazza participation and instructor feedback.

Summative Assessment:

- Solving given problems with programming.

### Exploration 6: Guided Internet Explorations

Timeframe: 14 Blocks -- December, January, April

Instructional Activities and Associated Learning Objectives from the Curriculum Framework:

- LO 6.1.1 [P3]: Simulate Internet communications. [CR1c] [CR2f]
- LO 6.1.1 [P3]: Class discussion - What is the hardware and binary connection? [CR1c] [CR2f]
- LO 6.1.1 [P3], LO 6.2.1 [P5], LO 6.2.2 [P4]: Create videos explaining the characteristics of the Internet. [CR1c] [CR1d] [CR1e] [CR2f]

[CR1c] — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P3: Abstracting.

[CR2f] — Students are provided with opportunities to meet learning objectives within Big Idea 6: The Internet. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.

[CR1d] — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P4: Analyzing Problems and Artifacts.

[CR1e] — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P5: Communicating (both orally and written).

Formative Assessment:

- Encrypting, transmitting, and decrypting messages.
- Piazza participation and instructor feedback.

Summative Assessment:

- Internet Google Forms test.

### Exploration 7: Identifying Innovations

Timeframe: 14 Blocks -- September, October, February

## Instructional Activities and Associated Learning Objectives from the Curriculum Framework:

- LO 7.1.1 [P4], LO 7.1.2 [P4], LO 7.2.1 [P1]: Identify and summarize articles about computing innovations and impacts. [CR1d] [CR2g]
- LO 7.1.1 [P4], LO 7.1.2 [P4], LO 7.2.1 [P1]: Discuss article, “A World Transformed: What Are the Top 30 Innovations of the Last 30 Years?” (*Knowledge@Wharton*, University of Pennsylvania, February 18, 2009). [CR1d] [CR2g]
- LO 7.3.1 [P4], LO 7.4.1 [P1]: Debate the beneficial and harmful impacts of computing on our society. [CR1a] [CR1d] [CR2g]
- LO 7.1.1 [P4]: Read and discuss the conclusion to *Blown to Bits*. [CR1d] [CR2g]

[CR1d] — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P4: Analyzing Problems and Artifacts.

[CR2g] — Students are provided with opportunities to meet learning objectives within Big Idea 7: Global Impact. Such opportunities must occur in addition to the AP Computer Science Principles Performance Tasks.

[CR1a] — Students are provided with opportunities to meet learning objectives connected to Computational Thinking Practice P1: Connecting Computing.

## Formative Assessment:

- Discussing and summarizing ideas from readings.
- Piazza participation and instructor feedback.

## Summative Assessment:

- Identifying innovations; Google Forms test.

**Performance Task: Explore – Impact of Computing Innovations**

Timeframe: Eight Blocks -- April

Summative Assessment: Eight hours of class time will be provided for the through-course assessment *Explore – Impact of Computing Innovations*. [CR3]

[CR3] — Students are provided the required amount of class time to complete the AP Through-Course Assessment *Explore - Impact of Computing Innovations* Performance Task.

**Performance Task: Create – Applications from Ideas**

Timeframe: Six Blocks -- November

## Summative Assessment:

- Twelve hours of class time will be provided for the through-course assessment *Create – Applications from Ideas*. [CR4]

[CR4] — Students are provided the required amount of class time to complete the AP Through-Course Assessment *Create - Applications from Ideas* Performance Task.

**Creating a Website Portfolio**

Timeframe: Five Blocks -- Late May, early June

## Summative Assessment:

- Create a website summarizing what was created and learned in AP CSP.