

Mobile CSP

Course Description

The Mobile Computer Science Principles course provides an introduction to the basic principles of computer science (CS) from the perspective of mobile computing, including programming in App Inventor, a graphical programming language for Android mobile devices. The lessons and materials used by students incorporate programming while also integrating all other AP CSP big ideas: creativity, abstraction, data and information, algorithms, the internet and global impact. The curriculum engages students and supports the development of problem solving skills honing in on the computational thinking practices as indicated in the AP CSP curriculum framework. Students learn to create socially useful computational artifacts using App Inventor as well as connect computing and learn about abstracting as they develop and analyze their programs. The curriculum also emphasizes communication and collaboration in a project-based approach and classroom environment. This course involves a strong writing component. Students will maintain a portfolio of their work, which will include several performance tasks in the areas of programming and the impact of computing technology.

Mobile CSP

Pacing Guide		
Unit	Topic	Suggested Timing
Unit 1	Getting Started	approx. 8 weeks
Unit 2	Exploring Computing	approx. 8 weeks
Unit 3	Algorithms and Procedural Abstractions	approx. 7 weeks
Unit 4	Using and Analyzing Data & Information	approx. 12 weeks

Educational Technology Standards

8.1.12.A.1, 8.1.12.A.2, 8.1.12.A.3, 8.1.12.B.2, 8.1.12.C.1, 8.1.12.D.1, 8.1.12.D.4, 8.1.12.D.5, 8.1.12.E.2, 8.1.12.F.1

➤ **Technology Operations and Concepts**

- Create a personal digital portfolio which reflects personal and academic interests, achievements, and career aspirations by using a variety of digital tools and resources.
- Produce and edit a multi-page digital document for a commercial or professional audience and present it to peers and/or professionals in that related area for review.
- Collaborate in online courses, learning communities, social networks or virtual worlds to discuss a resolution to a problem or issue.

➤ **Creativity and Innovation**

- Apply previous content knowledge by creating and piloting a digital learning game or tutorial.

➤ **Communication and Collaboration**

- Develop an innovative solution to a real world problem or issue in collaboration with peers and experts, and present ideas for feedback through social media or in an online community.

➤ **Digital Citizenship**

- Demonstrate appropriate application of copyright, fair use and/or Creative Commons to an original work.
- Research and understand the positive and negative impact of one's digital footprint.
- Analyze the capabilities and limitations of current and emerging technology resources and assess their potential to address personal, social, lifelong learning, and career needs.

➤ **Research and Information Literacy**

- Research and evaluate the impact on society of the unethical use of digital tools and present your research to peers.

➤ **Critical Thinking, Problem Solving, Decision Making**

- Evaluate the strengths and limitations of emerging technologies and their impact on educational, career, personal and or social needs.

Career Ready Practices

Career Ready Practices describe the career-ready skills that all educators in all content areas should seek to develop in their students. They are practices that have been linked to increase college, career, and life success. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

CRP1. Act as a responsible and contributing citizen and employee

Career-ready individuals understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.

CRP2. Apply appropriate academic and technical skills.

Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation.

CRP4. Communicate clearly and effectively and with reason.

Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice, and organization, and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.

CRP5. Consider the environmental, social and economic impacts of decisions.

Career-ready individuals understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organization, and the environment. They are aware of and utilize new technologies, understandings, procedures, materials, and regulations affecting the nature of their work as it relates to the impact on the social

Career Ready Practices

condition, the environment and the profitability of the organization.

CRP6. Demonstrate creativity and innovation.

Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization.

CRP7. Employ valid and reliable research strategies.

Career-ready individuals are discerning in accepting and using new information to make decisions, change practices or inform strategies. They use reliable research process to search for new information. They evaluate the validity of sources when considering the use and adoption of external information or practices in their workplace situation.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.

CRP9. Model integrity, ethical leadership and effective management.

Career-ready individuals consistently act in ways that align personal and community-held ideals and principles while employing strategies to positively influence others in the workplace. They have a clear understanding of integrity and act on this understanding in every decision. They use a variety of means to positively impact the directions and actions of a team or organization, and they apply insights into human behavior to change others' action, attitudes and/or beliefs. They recognize the near-term and long-term effects that management's actions and attitudes can have on productivity, morals and organizational culture.

CRP11. Use technology to enhance productivity.

Career Ready Practices

Career-ready individuals find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring new technology. They are proficient with ubiquitous technology applications. They understand the inherent risks-personal and organizational-of technology applications, and they take actions to prevent or mitigate these risks.

CRP12. Work productively in teams while using cultural global competence.

Career-ready individuals positively contribute to every team, whether formal or informal. They apply an awareness of cultural difference to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.

Differentiated Instruction

Strategies to Accommodate Students Based on Individual Needs

<u>Time/General</u>	<u>Processing</u>	<u>Comprehension</u>	<u>Recall</u>
<ul style="list-style-type: none"> Extra time for assigned tasks Adjust length of assignment Timeline with due dates for reports and projects Communication system between home and school Provide lecture notes/outline 	<ul style="list-style-type: none"> Extra Response time Have students verbalize steps Repeat, clarify or reword directions Mini-breaks between tasks Provide a warning for transitions Reading partners 	<ul style="list-style-type: none"> Precise step-by-step directions Short manageable tasks Brief and concrete directions Provide immediate feedback Small group instruction Emphasize multi-sensory learning 	<ul style="list-style-type: none"> Teacher-made checklist Use visual graphic organizers Reference resources to promote independence Visual and verbal reminders Graphic organizers
<u>Assistive Technology</u>	<u>Tests/Quizzes/Grading</u>	<u>Behavior/Attention</u>	<u>Organization</u>
<ul style="list-style-type: none"> Computer/whiteboard Tape recorder Spell-checker Audio-taped books 	<ul style="list-style-type: none"> Extended time Study guides Shortened tests Read directions aloud 	<ul style="list-style-type: none"> Consistent daily structured routine Simple and clear classroom rules Frequent feedback 	<ul style="list-style-type: none"> Individual daily planner Display a written agenda Note-taking assistance Color code materials

Enrichment

Strategies Used to Accommodate Based on Students Individual Needs:

- Adaption of Material and Requirements
- Evaluate Vocabulary
- Additional Projects
- Independent Student Options
- Projects completed individual or with Partners
- Self Selection of Research
- Tiered/Multilevel Activities
- Learning Centers
- Individual Response Board
- Independent Book Studies
- Open-ended activities
- Community/Subject expert mentorships

Assessments

Suggested Formative/Summative Classroom Assessments

- Portfolios
- Reading and Homework assignments
- Labs
- Projects
- Oral and Video presentations
- Quizzes and exams
- Self-check and Live coding exercises

Interdisciplinary Connections

English Language Arts

- Journal writing
- Close reading of industry-related content
- Create a brochure for a specific industry
- Keep a running word wall of industry vocabulary

Social Studies

- Research the history of a given industry/profession
- Research prominent historical individuals in a given industry/profession
- Use historical references to solve problems

World Language

- Translate industry-content
- Create a translated index of industry vocabulary
- Generate a translated list of words and phrases related to information technology

Math

- Compare and contrast use of equations and variables in algebra and programming.
- Program graphics and use the properties of geometric shapes
- Compare the computer graphic coordinate system with the Cartesian coordinate plane in math
- Compare probability and the use of random numbers in computer programming.
- Track and track various data, such as industry's impact on the GDP, career opportunities or among of individuals currently occupying careers

Fine & Performing Arts

- Create a poster recruiting young people to focus their studies on a career in Information Technology

Science

- Research the environmental impact of a given career or industry
- Research latest developments in Information technology
- Investigate applicable-careers in STEM fields

[New Jersey Student Learning Standards](#)

8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming

Technology and Society

- 8.2.12.B.3: Analyze ethical and unethical practices around intellectual property rights as influenced by human wants and/or needs.

Design

- 8.2.12.C.1: Explain how open source technologies follow the design process.

Computational Thinking: Programming

- 8.2.12.E.1: Demonstrate an understanding of the problem-solving capacity of computers in our world.
- 8.2.12.E.2: Analyze the relationships between internal and external computer components.
- 8.2.12.E.3: Use a programming language to solve problems or accomplish a task.
- 8.2.12.E.4: Use appropriate terms in conversation.

[New Jersey Student Learning Standards](#)

9.3– Career and Technical Education

Career Cluster: Information Technology (IT)

- 9.3.12.IT.11: Demonstrate knowledge of the hardware components associated with information systems.
- 9.3.12.IT-SUP.9: Employ technical writing and documentation skills in support of an information system.

Pathway: Programming & Software Development (IT-PRG)

- 9.3.12.IT-PRG.4: Demonstrate the effective use of software development tools to develop software applications.
- 9.3.12.IT-PRG.5: Apply an appropriate software development process to design a software application.
- 9.3.12.IT-PRG.6: Program a computer application using the appropriate programming language.
- 9.3.12.IT-PRG.7: Demonstrate software testing procedures to ensure quality products.

Common Career Technical Core (CCTC) **Career Cluster Information Technology**

IT.11 – Demonstrate knowledge of the hardware components associated with information systems.

- IT.11.1 - None available at this time.

IT-SUP.9 - Employ technical writing and documentation skills in support of an information system.

- IT-SUP.9.3 - Design technical documentation.

IT-PRG.4 - Demonstrate the effective use of software development tools to develop software applications.

- IT-PRG.4.1 - Employ tools in developing software applications.
- IT-PRG.4.3 - Apply language-specific programming tools/techniques.

IT-PRG.5 - Apply an appropriate software development process to design a software application.

- IT-PRG.5.1 - Describe software development processes and methodology.

IT-PRG.6 - Program a computer application using the appropriate programming language.

- IT-PRG.6.1 - Explain programming language concepts.
- IT-PRG.6.2 - Summarize program development methodology.
- IT-PRG.6.3 - Demonstrate proficiency in developing an application using an appropriate programming language.
- IT-PRG.6.4 - Explain basic software systems implementation.
- IT-PRG.6.6 - Resolve problems with integration.

IT-PRG.7 - Demonstrate software testing procedures to ensure quality products.

- IT-PRG.7.1 - Develop a software test plan.

Common Core State Standards (CCSS)

CCSS - English-Language Arts

Key Ideas and Details:

- CCSS.ELA-LITERACY.RL.11-12.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

Integration of Knowledge and Ideas:

- CCSS.ELA-LITERACY.W.11-12.1 Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

Production and Distribution of Writing:

- CCSS.ELA-LITERACY.W.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Research to Build and Present Knowledge:

- CCSS.ELA-LITERACY.W.11-12.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

Range of Writing:

- CCSS.ELA-LITERACY.W.11-12.10 Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences

Common Core State Standards (CCSS)

CCSS - Mathematics

Reason quantitatively and use units to solve problems:

- CCSS.MATH.CONTENT.HSN-Q.A.2 Define appropriate quantities for the purpose of descriptive modeling.

Create equations that describe numbers or relationships:

- CCSS.MATH.CONTENT.HSA-CED.A.1 Create equations and inequalities in one variable and use them to solve problems.

Analyze functions using different representations:

- CCSS.MATH.CONTENT.HSF-IF.C.7 Graph functions expressed symbolically and show key features of the graph.

Apply geometric concepts in modeling situations:

- CCSS.MATH.CONTENT.HSG-MG.A.1 Use geometric shapes, their measures, and their properties to describe objects

Calculate expected values and use them to solve problems:

- CCSS.MATH.CONTENT.HSS-MD.A.1 Define a random variable for a quantity of interest by assigning a numerical value to each event in a sample space;
- CCSS.MATH.CONTENT.HSS-MD.A.2 Calculate the expected value of a random variable;

Practice Standards - Mathematics

- 1. Make sense of problems and persevere in solving them.
- 2. Reason abstractly and quantitatively.
- 3. Construct viable arguments and critique the reasoning of others.
- 4. Model with mathematics.
- 5. Use appropriate tools strategically.
- 6. Attend to precision.
- 7. Look for and make use of structure.
- 8. Look for and express regularity in repeated reasoning.

Course: Mobile CSP Unit: 4 –Using and Analyzing Data & Information Grade Level: 9-12	Unit Overview: This unit focuses on various aspects of using and manipulating Data, both within mobile apps and on the Web and Internet. This unit discusses the Internet, how it works, how it enables innovation and collaboration, and security concerns for using it.
New Jersey Student Learning Standards (NJSLS): 8.2.12.B.3, 8.2.12.C.1, 8.2.12.E.1, 8.2.12.E.2, 8.2.12.E.3, 8.2.12.E.4 9.3.12.IT.11, 9.3.12.IT-SUP.9.3, 9.3.12.IT-PRG.4.1, 9.3.12.IT-PRG.4.3, 9.3.12.IT-PRG.5.1, 9.3.12.IT-PRG.6.1, 9.3.12.IT-PRG.6.2, 9.3.12.IT-PRG.6.3, 9.3.12.IT-PRG.6.4, 9.3.12.IT-PRG.6.6, 9.3.12.IT-PRG.7.1	
Common Career Technical Core (CCTC): IT.11, IT-SUP.9.3, IT-PRG.4.1, IT-PRG.4.3, IT-PRG.5.1, IT-PRG.6.1, IT-PRG.6.2, IT-PRG.6.3, IT-PRG.6.4, IT-PRG.6.6, IT-PRG.7.1	
Common Core State Standards (CCSS): RL.11-12.1; W.11-12.1; W.11-12.4; W.11-12.7; W.11-12.10;	

Student Learning Objectives (SLOs)	Essential Questions	Skills & Indicators	Sample Activities	Resources
Use a pre-defined list to design an interactive quiz. NJSLS: 8.2.12.E.1 8.2.12.E.3 8.2.12.E.4 9.3.12.IT.11.1 9.3.12.IT-PRG.4.1 9.3.12.IT-PRG.4.3 9.3.12.IT-PRG.5.1 9.3.12.IT-PRG.6.1 9.3.12.IT-PRG.6.3	<ul style="list-style-type: none"> How do computers put things in order and find things on a list? Why do programmers use lists? 	<ul style="list-style-type: none"> Use App Inventor’s ListPicker component Using an index variable Compare text values using list constructs Create an algorithm Define a global variable Program if/else to compare text values Create a list of lists 	<ul style="list-style-type: none"> Presidents Quiz tutorial Presidents Quiz app Presidents Quiz project Interactive exercises Reflection questions Read App Inventor’s documentation on Lists 	Mobile CSP Unit 6.2 https://ram8647.appspot.com/mobileCSP/unit?unit=26&lesson=80 Mobile CSP Unit 6.3 https://ram8647.appspot.com/mobileCSP/unit?unit=26&lesson=82 Mobile CSP Unit 6.5 https://ram8647.appspot.com/mobileCSP/unit?unit=26&lesson=83

Student Learning Objectives (SLOs)	Essential Questions	Skills & Indicators	Sample Activities	Resources
<p>9.3.12.IT-PRG.6.4 9.3.12.IT-PRG.6.6</p> <p>CCTC: IT.11.1 IT-PRG.4.1 IT-PRG.4.3 IT-PRG.5.1 IT-PRG.6.1 IT-PRG.6.3 IT-PRG.6.4 IT-PRG.6.6</p> <p>CCSS: W.11-12.4 W.11-12.10</p>				<p>App Inventor API http://appinventor.mit.edu/explore/library.html</p>
<p>Understand the difference between open access and copyrighted media on the web.</p> <p>NJSLS: 8.2.12.E.1 8.2.12.E.4 8.2.12.B.3</p> <p>CCSS: W.11-12.1;</p>	<ul style="list-style-type: none"> • Who owns the bits? • What is the connection between data, information, knowledge and wisdom? • How does continuous access to large amounts of data change how people and organizations make decisions? 	<ul style="list-style-type: none"> • Identify copyrighted material and proper use. • Identify peer-to-peer networks. • Describe open access and creative commons and how they allow the legal sharing of digital information. 	<ul style="list-style-type: none"> • Read Blown to Bits (BB) Chapter 6 • Answer BB Chapter 6 questions in a jigsaw 	<p>Mobile CSP Unit 6.4 https://ram8647.appspot.com/mobileCSP/unit?unit=26&lesson=81</p> <p>Blown to Bits Chapter 6 http://www.bitsbook.com/wp-content/uploads/2008/12/B2B_3.pdf#page=213</p>

Student Learning Objectives (SLOs)	Essential Questions	Skills & Indicators	Sample Activities	Resources
W.11-12.4; W.11-12.10; RL.11-12.1;				
Describe the concept of data persistence. NJSLS: 8.2.12.E.1 8.2.12.E.3 8.2.12.E.4 9.3.12.IT.11.1 9.3.12.IT-PRG.4.1 9.3.12.IT-PRG.4.3 9.3.12.IT-PRG.5.1 9.3.12.IT-PRG.6.1 9.3.12.IT-PRG.6.3 9.3.12.IT-PRG.6.4 9.3.12.IT-PRG.6.6 CCTC: IT.11.1 IT-PRG.4.1 IT-PRG.4.3 IT-PRG.5.1 IT-PRG.6.1 IT-PRG.6.3 IT-PRG.6.4 IT-PRG.6.6	<ul style="list-style-type: none"> • What does it mean to say that data is persistent? • Describe the difference between data stored in a global variable, TinyDB and TinyWebDB. • How do users share data? For example, how does a game determine who has the highest score? 	<ul style="list-style-type: none"> • Use App Inventor’s TinyDB component • Use App Inventor’s TinyWebDB component 	<ul style="list-style-type: none"> • Modify Android Mash app to store the user’s highest score with a TinyDB • Modify Android Mash app to store the user’s highest score with a TinyWebDB • Modify Android Mash app to use a list with TinyDB and TinyWebDB • Reflection questions • Interactive questions • Read App Inventor’s documentation on TinyDB and TinyWebDB 	Mobile CSP Unit 6.6 https://ram8647.appspot.com/mobileCSP/unit?unit=26&lesson=84 Mobile CSP Unit 6.7 https://ram8647.appspot.com/mobileCSP/unit?unit=26&lesson=85 Mobile CSP Unit 6.8 https://ram8647.appspot.com/mobileCSP/unit?unit=26&lesson=86

Student Learning Objectives (SLOs)	Essential Questions	Skills & Indicators	Sample Activities	Resources
<p>CCSS: W.11-12.4 W.11-12.10</p>				
<p>Identify big data sets. Create questions and hypotheses about data. Use tools to manipulate big data.</p> <p>NJSLS: 8.2.12.E.1 8.2.12.E.3 8.2.12.E.4 9.3.12.IT.11.1 9.3.12.IT-PRG.4.1 9.3.12.IT-PRG.4.3 9.3.12.IT-PRG.5.1 9.3.12.IT-PRG.6.1 9.3.12.IT-PRG.6.3 9.3.12.IT-PRG.6.4 9.3.12.IT-PRG.6.6</p> <p>CCTC: IT.11.1 IT-PRG.4.1 IT-PRG.4.3 IT-PRG.5.1</p>	<ul style="list-style-type: none"> • What can be done with big data? • What are the trade-offs in collecting data such as security, privacy, and storage issues? • What is useful about a data visualization? • What tools can be used to manipulate big data? • How do computers and corporations use data to make decisions? 	<ul style="list-style-type: none"> • Define terminology related to big data sets • Formulate questions and hypotheses about a big dataset. • Use the Google Fusion table application to analyze data. 	<ul style="list-style-type: none"> • Videos on Big Data • Slide Show on Big Data • Interactive questions • Reflection questions • Google fusion table map tutorial • Locate and download a large dataset • Hello World Fusion table app 	<p>Mobile CSP Unit 6.9 https://ram8647.appspot.com/mobileCSP/unit?unit=26&lesson=87</p> <p>Wikipedia article on Big Data https://en.wikipedia.org/wiki/Big_data</p> <p>Mobile CSP Unit 6.11 https://ram8647.appspot.com/mobileCSP/unit?unit=26&lesson=89</p>

Student Learning Objectives (SLOs)	Essential Questions	Skills & Indicators	Sample Activities	Resources
IT-PRG.6.1 IT-PRG.6.3 IT-PRG.6.4 IT-PRG.6.6 CCSS: W.11-12.4 W.11-12.10				
Explain what the internet is and how it works. NJSLS: 8.2.12.E.1 8.2.12.E.2 8.2.12.E.4 8.2.12.B.3 8.2.12.C.1 9.3.12.IT.11 CCTC: IT.11.1 CCSS: W.11-12.4; W.11-12.10;	<ul style="list-style-type: none"> • What is the internet, how is it built, and how does it function? • What aspects of the Internet’s design and development have helped it scale and flourish? • How and what are the protocols used on the internet? • What is the difference between the internet and the WWW? 	<ul style="list-style-type: none"> • Explain terminology related to the internet • Use tools to measure bandwidth and latency. • Explain how email works. • Explain how web browsing works. • Explain how the IP address system and Domain Name system work 	<ul style="list-style-type: none"> • Videos on the Internet • Create a concept map • Measure bandwidth • Measure latency • Interactive questions • Reflection questions • Ping activity • Traceroute activity • IP lookup 	Mobile CSP Unit 7.2 https://ram8647.appspot.com/mobileCSP/unit?unit=25&lesson=99 Mobile CSP Unit 7.5 https://ram8647.appspot.com/mobileCSP/unit?unit=25&lesson=102
Develop an app that accesses the internet.	<ul style="list-style-type: none"> • What are the societal impacts that 	<ul style="list-style-type: none"> • Use App Inventor’s texting component 	<ul style="list-style-type: none"> • No Texting While Driving app 	Mobile CSP Unit 7.3 https://ram8647.appspot.com/mobileCSP/unit?unit=25&lesson=102

Student Learning Objectives (SLOs)	Essential Questions	Skills & Indicators	Sample Activities	Resources
<p>NJSLS: 8.2.12.E.1 8.2.12.E.3 8.2.12.E.4 9.3.12.IT.11.1 9.3.12.IT-PRG.4.1 9.3.12.IT-PRG.4.3 9.3.12.IT-PRG.5.1 9.3.12.IT-PRG.6.1 9.3.12.IT-PRG.6.3 9.3.12.IT-PRG.6.4 9.3.12.IT-PRG.6.6</p> <p>CCTC: IT.11.1 IT-PRG.4.1 IT-PRG.4.3 IT-PRG.5.1 IT-PRG.6.1 IT-PRG.6.3 IT-PRG.6.4 IT-PRG.6.6</p> <p>CCSS: W.11-12.4 W.11-12.10</p>	<p>computing can have?</p> <ul style="list-style-type: none"> • What are the advantages and disadvantages of having a location aware app? • What are the sensors used in this course? 	<ul style="list-style-type: none"> • Use App Inventor's LocationSensor component • Use Google Voice • Use Google Maps API • Use a for each loop 	<ul style="list-style-type: none"> • My Directions app • Broadcasthub app • Interactive exercises • Reflection questions • Read App Inventor's documentation on Texting component 	<p>com/mobileCSP/unit?unit=25&lesson=110</p> <p>Mobile CSP Unit 7.6 https://ram8647.appspot.com/mobileCSP/unit?unit=25&lesson=105</p> <p>Mobile CSP Unit 7.10 https://ram8647.appspot.com/mobileCSP/unit?unit=25&lesson=111</p>
<p>Explain what cloud</p>	<ul style="list-style-type: none"> • What is the difference 	<ul style="list-style-type: none"> • Name cloud 	<ul style="list-style-type: none"> • Create and share a 	<p>Mobile CSP Unit 7.4</p>

Student Learning Objectives (SLOs)	Essential Questions	Skills & Indicators	Sample Activities	Resources
<p>computing is.</p> <p>NJSLS: 8.2.12.E.1 8.2.12.E.4 8.2.12.B.3 9.3.12.IT.11</p> <p>CCTC: IT.11.1</p> <p>CCSS: W.11-12.4; W.11-12.10;</p>	<p>between cloud services versus applications?</p> <ul style="list-style-type: none"> • What are the advantages and impacts of cloud computing? • What are some computer ethics that we should follow? 	<p>computing applications.</p> <ul style="list-style-type: none"> • Identify clients and servers. • Give examples of following and not following the Ten Commandments of Computer Ethics. 	<p>google doc. Edit the doc with multiple users.</p> <ul style="list-style-type: none"> • Interactive questions • Reflection questions • Discuss the Ten Commandments of Computer Ethics 	<p>https://ram8647.appspot.com/mobileCSP/unit?unit=25&lesson=100</p> <p>Ten Commandments of Computer Ethics https://en.wikipedia.org/wiki/Ten_Commandments_of_Computer_Ethics</p>
<p>Understand the concept of cryptography and how it relates to internet security.</p> <p>NJSLS: 8.2.12.E.1 8.2.12.E.4</p> <p>CCSS: W.11-12.1; W.11-12.4; W.11-12.10; RL.11-12.1;</p>	<ul style="list-style-type: none"> • What is cryptography? • How is cryptography used to secure HTTPS transactions over the internet? • Why is public key cryptography necessary? • How is cyber security impacting the ever increasing number of internet users? 	<ul style="list-style-type: none"> • Explain the concepts of encryption. • Explain the concepts of cryptography. • Explain the key exchange problem. • Explain the RSA algorithm. 	<ul style="list-style-type: none"> • Videos on Caesar cipher, simple substitution cipher and other encryptions • Activities on Caesar cipher, simple substitution cipher and other encryptions • Interactive questions • Reflection questions • Read Blown to Bits (BB) Chapter 5 • Answer BB Chapter 5 	<p>Mobile CSP Unit 7.7 https://ram8647.appspot.com/mobileCSP/unit?unit=25&lesson=122</p> <p>Mobile CSP Unit 7.8 https://ram8647.appspot.com/mobileCSP/unit?unit=25&lesson=108</p> <p>Mobile CSP Unit 7.9 https://ram8647.appspot.com/mobileCSP/unit?unit=25&lesson=107</p>

Student Learning Objectives (SLOs)	Essential Questions	Skills & Indicators	Sample Activities	Resources
			questions in a jigsaw	Blown to Bits Chapter 5 http://www.bitsbook.com/wp-content/uploads/2008/12/B2B_3.pdf#page=179

Unit 4 Vocabulary

Structured data
 Persistent data
 Shareable data
 Fusion table
 Database
 Copyright
 Big data
 Data mining
 Synchronize
 Open access
 Creative commons
 Digital Millennium Copyright Act (DMCA)
 Refactoring

Blown to Bits Chapter 6 Vocabulary

centralized systems
 commons
 DRAM
 DRM
 flooding
 gigabyte
 peer-to-peer architecture
 piracy
 sealed storage
 TPM

Blown to Bits Chapter 5 Vocabulary

AES
 certification authority
 cipher text
 DES
 decryption
 encryption
 packet
 plain text
 router

Suggested Unit Projects

Choose At Least One

Create: Programming Performance Task #2

<https://ram8647.appspot.com/mobileCSP/assessment?name=118>

Data Project

<https://ram8647.appspot.com/mobileCSP/assessment?name=124>

Suggested Structured Learning Experiences

Amazon Fulfillment Center Tour, Middletown, DE

<http://amazonfctours.com/>

Virtual Tour of Google's Oregon Data Center (10 Minutes)

<https://www.engadget.com/2016/03/24/google-360-video-tour-data-center/>

<http://www.google.com/about/datacenters/inside/streetview/>