COURSE TITLE: Mobile Application Development

Course Description:
Mobile Application Development is designed to equip students to create and develop mobile applications, which are both popular and important in education, entertainment, news, social dynamics, media, and general learning. This project-oriented course focuses on learning principles of basic design and development of mobile applications. This course will include analytical skills that mobile developers require for overall career success.

Potential Certifications/Credentials:
Adobe Certified Associate (ACA) – Photoshop / Dreamweaver / Premier Pro / InDesign / Illustrator, ASK Institute – Concepts of Entrepreneurship and Management / Fundamental Business Concepts, Certiport- Entrepreneurship and Small Business (must hold concentrator status), IC3 Global Standard 6 (or higher), Microsoft Office Expert 2019/365 - Access / Excel / Word, Microsoft Office Specialist 2019/365 (MOS) (Two of the following areas REQUIRED: Excel Associate / Outlook Associate / PowerPoint Associate / Word Associate)
# Course Scope and Sequence

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<th>Unit #</th>
<th>Unit Title</th>
<th>Estimated Hours</th>
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</thead>
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<td>Foundational Standards</td>
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<td>2</td>
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<td>Collaborative Research</td>
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<td>Safety, Privacy, and Security</td>
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<tr>
<td>16</td>
<td>Legal and Ethical Behavior</td>
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</tbody>
</table>
Unit Plans of Instruction

Foundational Standards

Supporting—will be taught throughout the course as needed for the unit.

F1. Incorporate safety procedures in handling, operating, and maintaining tools and machinery; handling materials; utilizing personal protective equipment; maintaining a safe work area; and handling hazardous materials and forces.

F2. Demonstrate effective workplace and employability skills, including communication, awareness of diversity, positive work ethic, problem-solving, time management, and teamwork.

F3. Explore the range of careers available in the field and investigate their educational requirements, and demonstrate job-seeking skills including resume-writing and interviewing.

F4. Advocate and practice safe, legal, responsible, and ethical use of information and technology tools specific to the industry pathway.

F5. Participate in a Career and Technical Student Organization (CTSO) to increase knowledge and skills and to enhance leadership and teamwork.

F6. Discuss and demonstrate ways to value diversity.
Unit 2 Title: Creative Communication

Content Standards
1. Research multiple Internet publishing platforms to determine their suitability for various media types, target audiences, and feedback mechanisms.
   1a. Utilize business communications to meet the needs of the targeted audience.
   1b. Collaborate on a diverse team, using office or team norms.

Unpacked Learning Objectives

Students know:
- Determine their suitability for various media types, target audiences, and feedback mechanisms.
- Describe business communications to meet the needs of the targeted audience.
- Select business communications to meet the needs of the targeted audience.
- How to collaborate in a diverse team, using office or team norms.

Students are able to:
- Describe multiple Internet publishing platforms to determine their suitability for various media types, target audiences, and feedback mechanisms.
- Discuss multiple Internet publishing platforms to determine their suitability for various media types, target audiences, and feedback mechanisms.
- Identify the business communications to meet the needs of the targeted audience.
- Decide as a diverse team the guidelines and rules for how they are to interact and communicate.
- Describe multiple Internet publishing platforms to determine their suitability for various media types, target audiences, and feedback mechanisms.
- Discuss multiple Internet publishing platforms to determine their suitability for various media types, target audiences, and feedback mechanisms.
- Do business communications to meet the needs of the targeted audience.

Students understand that:
- There are multiple mobile applications that can be found on the Internet that can be used for business communication.
- The business communications selected should meet the needs of the targeted audience.
- They are to work together on a diverse team to establish the guidelines and rules for how they are to interact and communicate.
<table>
<thead>
<tr>
<th>Unit Driving/Essential Question</th>
<th>Students can assist with the selecting of business communication media by researching multiple Internet publishing platforms.</th>
</tr>
</thead>
<tbody>
<tr>
<td>What type of media should be used for effective communication for the targeted audience?</td>
<td></td>
</tr>
<tr>
<td>What type of Internet publishing platforms would be suitable for various media types, target audiences, and feedback mechanisms?</td>
<td></td>
</tr>
<tr>
<td>Which mobile applications can be used for business communication?</td>
<td></td>
</tr>
</tbody>
</table>
### Map of Student Learning by Learning Objective

|----------------------------------|--------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------------------|-----------------------------------|
| Students examine multiple Internet publishing platforms to determine their suitability for various media types, target audiences, and feedback mechanisms. | Formative: The teacher observes students think, pair, and share their research on multiple Internet publishing platforms to determine their suitability for various media types.  
- Think, Pair, Share  
- Collaborative Learning  
- Quizzes  
- Note-Taking | Students will create visuals to illustrate their knowledge of multiple Internet publishing platforms for various media types.  
- Peer Review  
- Visual Presentation  
  - PowerPoint Presentation  
  - Digital Video Production  
  - Brochure  
  - Poster  
- Graphic Organizer  
- Infographic Comparing | ELA: informative writing, research synthesis, using visuals to share information  
SS: Business marketing  
MATH: Students research data and show percentages of target markets and their preferred media types using spreadsheet software. | Digital Presentation Software  
Presentation Software  
Interactive Board  
Flipgrid Video [https://auth.flipgrid.com/signup](https://auth.flipgrid.com/signup)  
Graphic Design Platform [https://www.canva.com/](https://www.canva.com/)  
Graphic Organizer Infographic Comparing [https://www.hmhco.com/bi](https://www.hmhco.com/bi) |
- Short answer questions
- Unit project incorporating all learned skills and concepts
- Presentations
- Written Essay/Reports

Useful Links:

- MBA Research
- iCEV
- Teach FBLA
- Teach DECA

EdPuzzle videos, articles, and resources
https://edpuzzle.com/discover

EverFi additional teaching resources and activities
https://everfi.com/

MBA Research for Curriculum guides, lessons plan, and modules
https://www.mbaresearch.org/

Wheel spinner for interactive game
https://wheelofnames.com/

https://www.tweentribune.com/
TweenTribune is a free, not-for-profit online newspaper. It is updated daily with stories from the Associated Press that are
| Students apply business communications to meet the needs of the targeted audience. | Formative: The teacher observes students think, pair, and share their research on effective business communications.  
- Think, Pair, Share  
- Collaborative Learning  
- Quizzes  
- Note-Taking  
Summative: In small groups, students create visuals to illustrate their knowledge on effective business communications.  
- Unit exam with multiple choice  
- Fill-In-Blank  
- Short answer questions  
- Unit project incorporating all learned skills and concepts  
- Presentations  
- Written Essay/Reports | Students will create visuals to illustrate their knowledge of effective business communication to meet the needs of the targeted audience.  
- Peer Review  
- Visual Presentation  
  - PowerPoint Presentation  
  - Digital Video Production | ELA: informative writing, research synthesis, using visuals to share information  
SS: Business marketing | chosen based on relevancy to pre-adolescents. |
|---|---|---|---|---|
| Digital Presentation Software  
Interactive Board  
Flipgrid Video [https://auth.flipgrid.com/signup](https://auth.flipgrid.com/signup)  
Graphic Designing platform [https://www.canva.com/](https://www.canva.com/)  
Computer  
Useful Links:  
MBA Research  
iCEV  
Teach FBLA  
Teach DECA  
EdPuzzle videos, articles, and resources [https://edpuzzle.com/discover](https://edpuzzle.com/discover) |
| Students unite on a diverse team, using office or team norms. | Formative: The teacher observes students think, pair, and share their research on using office or team norms.  
- classwork rubric  
- class discussions  
- quizzes  
- exit slips  
- peer reviews  
- self-assessment  
- listening/note taking guides | Students will unite on a diverse team and create visuals to illustrate their knowledge on using office or team norms.  
- Peer Review  
- Visual Presentation  
  - PowerPoint Presentation  
  - Digital Video Production | ELA: Effective communication, collaborative discussions  
SS: Business management  
Digital Presentation Software  
Interactive Board  
Flipgrid Video [https://auth.flipgrid.com/signup](https://auth.flipgrid.com/signup)  
Computer  
Graphic Designing platform [https://www.canva.com/](https://www.canva.com/) | EverFi additional teaching resources and activities [https://everfi.com/](https://everfi.com/)  
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<table>
<thead>
<tr>
<th>Summative: In small groups, the teacher observes students create visuals to illustrate their knowledge on using office or team norms</th>
</tr>
</thead>
<tbody>
<tr>
<td>● interactive review games</td>
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<tr>
<td>● Unit exam with multiple choice</td>
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<tr>
<td>● Fill-In-Blank</td>
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<td>● Unit project incorporating all learned skills and concepts</td>
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<tr>
<td>● Presentations</td>
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<tr>
<td>● Written Essay/Reports</td>
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</table>

Peer Review Handout

Useful Links:
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- Teach DECA
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- EverFi additional teaching resources and activities
  https://everfi.com/
- MBA Research for Curriculum guides, lessons plan, and modules
  https://www.mbaresearch.org/
- Wheel spinner for interactive game
  https://wheelofnames.com/
- https://www.tweentrubine.com/
  TweenTribune is a free, not-for-profit online
Key Vocabulary

Internet, Internet publishing platforms, media, target audience, feedback mechanisms, business communications, targeted audience, diverse, team, office norms, team norms

Work-Based Learning, Simulated Work Experiences, and Experiential Learning:

Guest Speakers or Field Trip, CTSO Competitive Events

CTSO Connection:

FBLA (Business Ethics, Digital Video Production, Introduction to Business Presentation, Mobile Application Development)
DECA (Marketing Communication Series)

Certification/Credential Connection:

Adobe Certified Associate (ACA) – Photoshop / Dreamweaver / Premier Pro / InDesign / Illustrator
ASK Institute – Concepts of Entrepreneurship and Management / Fundamental Business Concepts
Certiport - Entrepreneurship and Small Business (must hold concentrator status)
IC3 Global Standard 6 (or higher), Microsoft Office Expert 2019/365 - Access / Excel / Word
Microsoft Office Specialist 2019/365 (MOS) (Two of the following areas REQUIRED: Excel Associate / Outlook Associate / PowerPoint Associate / Word Associate)
Unit 3 Title: Digital Tools

Content Standards
2. Utilize a variety of digital tools to create digital products involving multiple content areas.
   2a. Describe the components of mobile applications.
   2b. Deploy an app using an emulator or a mobile device.
   2c. Utilize version control capabilities and manage historical changes when editing documents within a digital tool, both independently and collaboratively.
   2d. Select and use appropriate features to meet the desired functionality of an app.

Unpacked Learning Objectives

Students know:
● How to use a variety of digital tools to create digital products involving multiple content areas.
● The components of mobile applications.
● The procedures to deploy an app using an emulator or a mobile device.
● The procedures to use version control capabilities and manage historical changes when editing documents within a digital tool, both independently and collaboratively.
● Features to meet the desired functionality of an app.

Students are able to:
● Select the digital tools needed to create digital products involving multiple content areas.
● Identify the digital tools needed to create digital products involving multiple content areas.
● Describe the components of mobile applications.
● Summarize the components of mobile applications.
● Describe how to move an app using an emulator or a mobile device.
● Decide how to deploy an app using an emulator or a mobile device.
● Describe what is the best way to deploy an app using an emulator or a mobile device.
● Summarize the steps to deploy an app using an emulator or a mobile device.
● Describe the procedures of using version control capabilities and manage historical changes when editing documents within a digital tool, both independently and collaboratively.
● Summarize the procedure of using version control capabilities and manage historical changes when editing documents within a digital tool, both independently and collaboratively.
● Identify the appropriate features to meet the desired functionality of an app.
● Describe the appropriate features to meet the desired functionality of an app.
● Summarize the appropriate features to meet the desired functionality of an app.
List the appropriate features to meet the desired functionality of an app.

**Students understand that:**
- A variety of digital tools are used to create a final digital product.
- There are multiple components of mobile applications.
- Apps used as digital tools have to be installed by using an emulator or a mobile device.

<table>
<thead>
<tr>
<th>Unit Driving/Essential Question</th>
<th>What digital tools and mobile apps should be used to create final digital products? Which type of digital media can be used to create digital products involving multiple content areas? Which apps can be used as a digital tool that can be installed by using an emulator or a mobile device?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exemplar High Quality Unit Task</td>
<td>Students can determine the need for digital tools and apps needed to create and design a digital product.</td>
</tr>
</tbody>
</table>
## Map of Student Learning by Learning Objective

|---------------------------------|--------------------------------------------------------|-------------------------------|------------------------------------------------------------------------------------------------|----------------------------------|
| Students apply a variety of digital tools to create digital products involving multiple content areas. | Formative: The teacher observes students obtain information by way of research on a given topic. The students will conduct research and complete a storyboard template on this topic. The storyboard will be the layout of the digital product that the students will create.  
• classwork rubric  
• class discussions  
• quizzes  
• exit slips  
• peer reviews  
• self-assessment  
• listening/note taking guides  
• interactive review games  
Summative: The teacher observes the students | Individual Project: Students create a website that will require them to use a variety of digital tools and applications.  
• Storyboard  
• Website  
Give a presentation  
Create a video or audio | SCI: Students will examine the psychology (habits) and neurobiology (neurotransmitters, dopamine, etc.) behind app and website formation.  
SCI: Students will create a list of social media platforms and assign an addiction level for each app. Students will then explain what each social media platform offers its audience and how the apps are habit-forming.  
ELA: Informative writing, research synthesis, using visuals to share information  
SS: Business marketing and management | Computer  
Science Behind Viral Apps (and How to Build One) [https://medium.com/swlh/the-science-behind-viral-apps-and-how-to-build-one-6a0a7d0591ab](https://medium.com/swlh/the-science-behind-viral-apps-and-how-to-build-one-6a0a7d0591ab)  
Storyboard Template [http://sricstaff.santarosa.edu/~kthornle/apgr66/storyboard.PDF](http://sricstaff.santarosa.edu/~kthornle/apgr66/storyboard.PDF)  
Wix, free Website Builder [https://www.wix.com/](https://www.wix.com/)  
Graphic Designing platform [https://www.canva.com/](https://www.canva.com/)  
Digital Presentation Software |
<table>
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<tr>
<th>Activity</th>
<th>Description</th>
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<tbody>
<tr>
<td>MATH: Students will create an app using code.org App Lab. They will create a math quiz app like the following: <a href="https://studio.code.org/projects/applab/6Gt8ve2ESZuGLcSIYzg5Tg">https://studio.code.org/projects/applab/6Gt8ve2ESZuGLcSIYzg5Tg</a></td>
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<td>Interactive Board</td>
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<td>Flipgrid Video</td>
<td>[<a href="https://auth.flipgrid.com/sign">https://auth.flipgrid.com/sign</a> up](<a href="https://auth.flipgrid.com/sign">https://auth.flipgrid.com/sign</a> up)</td>
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<tr>
<td>Useful Links:</td>
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**Demonstrate their knowledge of creating a digital product that will require them to use a variety of digital tools and applications.**

- Unit exam with multiple choice
- Fill-In-Blank
- Short answer questions
- Unit project incorporating all learned skills and concepts
- Presentations
- Written Essay/Reports

**Interactive Board Flipgrid Video**

[https://auth.flipgrid.com/sign up](https://auth.flipgrid.com/sign up)

**Computer Peer Review Handout**


**Useful Links:**

- MBA Research
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<th>Wheel spinner for interactive game</th>
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<td><a href="https://wheelofnames.com/">https://wheelofnames.com/</a></td>
</tr>
<tr>
<td><a href="https://www.tweentribune.com">https://www.tweentribune.com</a></td>
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<td>TweenTribune is a free, not-for-profit online newspaper. It is updated daily with stories from the Associated Press that are chosen based on relevancy to pre-adolescents.</td>
</tr>
</tbody>
</table>
### Students explain in their own words the components of mobile applications.

**Formative:** The teacher lectures on the components of mobile applications. Afterwards, the teacher allows the students to research and create an outline for a descriptive essay.
- classwork rubric
- class discussions
- quizzes
- exit slips
- peer reviews
- self-assessment
- listening/note taking guides
- interactive review games

**Summative:** The teacher observes students write a descriptive essay on the components of mobile applications.
- Unit exam with multiple choice
- Fill-In-Blank
- Short answer questions
- Unit project incorporating all learned skills and concepts
- Presentations
- Written Essay/Reports

### Individual Activity:

**Students write a descriptive essay explaining in their own words the functions and components of mobile applications**
- Essay outline
- Descriptive Essay
- Give a presentation
- Create a poster or illustrative document
- Create a brochure
- Create a storyboard of infographic
- Create a video or audio
- Create a written essay or paragraph

### SCI: Students will differentiate between the four components of an app.

- Activities
- Services
- Broadcast receivers
- Content providers

### ELA: Informative writing, research synthesis, using visuals to share information, verbal expression

### MATH: Students will identify the concepts of Boolean Algebra that is used in computer programming and app design.

### Computer

**Android Application**
[https://www.sciencedirect.com/topics/computer-science/android-application](https://www.sciencedirect.com/topics/computer-science/android-application)

**Application Fundamentals | Android Developers**

**Android - Application Components - Tutorialspoint**
[https://www.tutorialspoint.com/android/android_application_components.htm](https://www.tutorialspoint.com/android/android_application_components.htm)

**Grammarly**
[https://app.grammarly.com](https://app.grammarly.com), can be accessed through clever.

### Useful Links:

**MBA Research**
**iCEV**
**Teach FBLA**
**Teach DECA**

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TweenTribune is a free, not-for-profit online newspaper. It is updated daily with stories from the Associated Press that are chosen based on relevancy to pre-adolescents.
| Students install an app using an emulator or a mobile device. | Formative: The teacher lectures and demonstrates the step-by-step instructions of installing an app using an emulator or a mobile device. Afterwards, the teacher observes the students install an app using an emulator or a mobile device. | Individual Activity: Students write a sequential process essay detailing the step-by-step instructions, chronological order, detailing how to install an app using an emulator or a mobile device.  
- **Chronological Essay**  
  Students create a digital presentation explaining, detailing, and demonstrating the steps needed to install an app using an emulator or a mobile device.  
- **Digital Presentation Software**  
- **Peer Review** | SCI: Students will research the pros and cons of testing an app using an emulator versus using a mobile device. Students will write a research paper explaining which platform, an emulator or mobile device, is best for installing an app.  
**ELA:** Informative writing, create an infographic using visuals to share information. | Real Devices vs. Emulators for Reliable Mobile App Testing  
[https://bitbar.com/blog/real-devices-vs-emulators-for-reliable-mobile-app-testing/](https://bitbar.com/blog/real-devices-vs-emulators-for-reliable-mobile-app-testing/)  
Real Device Vs Simulator Vs Emulator Testing: Key Differences  
[https://app.grammarly.com](https://app.grammarly.com), can be accessed through clever.  
Emulator hardware or software  
Digital Presentation Software  
Interactive Board  
Flipgrid Video  
[https://auth.flipgrid.com/signup](https://auth.flipgrid.com/signup)  
Graphic Design Platform  
[https://www.canva.com/](https://www.canva.com/)  
Computer |
Peer Review Handout
https://www.wssd.org/cms/lib/PA01001072/Centricity/Domain/257/Peer%20Eval

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| Students use version control capabilities and manage historical changes when editing documents within a digital tool, both independently and collaboratively. | Formative: The teacher lectures and demonstrates how to use control capabilities and manage changes when editing documents within a digital tool, both independently and collaboratively. Afterwards, the teacher observes students use control capabilities and manage changes to edit a document within a digital tool.  
  - classwork rubric  
  - class discussions  
  - quizzes  
  - exit slips  
  - peer reviews  
  - self-assessment  
  - listening/note taking guides  
  - interactive review games | Students use version control capabilities and manage historical changes to a created and shared document in Google Docs.  
  - Created and shared document in Google Docs | ELA: Collaborative discussion, creating and editing digital texts |
|---|---|---|---|
| Students use version control capabilities and manage historical changes when editing documents within a digital tool, both independently and collaboratively. | Formative: The teacher lectures and demonstrates how to use control capabilities and manage changes when editing documents within a digital tool, both independently and collaboratively. Afterwards, the teacher observes students use control capabilities and manage changes to edit a document within a digital tool.  
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  - interactive review games | Students use version control capabilities and manage historical changes to a created and shared document in Google Docs.  
  - Created and shared document in Google Docs | ELA: Collaborative discussion, creating and editing digital texts |

**Associated Press that are chosen based on relevancy to pre-adolescents.**

- Computer
- Google Docs
- Created and shared Document in Google Doc

**Useful Links:**
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- Teach FBLA
- Teach DECA
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- Wheel spinner for interactive game [https://wheelofnames.com/](https://wheelofnames.com/)
| Students apply features to meet the desired functionality of an app. | Formative: The teacher lectures and demonstrates the step-by-step instructions of applying features that meet the desired functionality of an app.  
- classwork rubric  
- class discussions  
- quizzes  
- exit slips  
- peer reviews  
- self-assessment  
- listening/note taking guides  
- interactive review games  
Summative: The teacher observes students complete a digital project that requires applying features that meet the desired functionality of an app. | Group Activity: Students are separated into small groups and given the task to create a digital video product that requires applying features that meets the desired functionality of an app. | ELA: Informative writing, creating and editing digital texts | [Digital Presentation Software](https://www.flipgrid.com)  
[Interactive Board](https://www.canva.com)  
[Flipgrid Video](https://auth.flipgrid.com/signup)  
[Graphic Design Platform](https://www.canva.com)  
[Computer](https://www.canva.com)  
[Useful Links](https://edpuzzle.com/discover)  
[MBA Research](https://www.babson.edu)  
[iCEV](https://www.icev.com)  
[Teach FBLA](https://www.teach.fbla.com)  
[Teach DECA](https://www.teach.deca.org)  
[EdPuzzle videos, articles, and resources](https://edpuzzle.com/discover) |
<table>
<thead>
<tr>
<th>Digital Tools</th>
<th>Digital Products</th>
<th>Multiple Content Areas</th>
<th>Components</th>
<th>Mobile Applications</th>
<th>App</th>
<th>Emulator</th>
<th>Mobile Device</th>
<th>Version Control Capabilities</th>
<th>Manage Historical Changes</th>
<th>Editing Documents</th>
<th>Digital Tools</th>
<th>Independently</th>
<th>Collaboratively</th>
<th>Appropriate Features</th>
<th>Functionality</th>
<th>User Interface</th>
<th>Components</th>
<th>Layout Arrangements</th>
<th>Media Objects</th>
<th>Drawing and Animation</th>
<th>Sensors</th>
<th>Location Awareness</th>
<th>Accessing Phone Features</th>
</tr>
</thead>
</table>

**Key Vocabulary**

- EverFi additional teaching resources and activities
  
  [https://everfi.com/](https://everfi.com/)

- MBA Research for Curriculum guides, lessons plan, and modules
  
  [https://www.mbaresearch.org/](https://www.mbaresearch.org/)

- Wheel spinner for interactive game
  
  [https://wheelofnames.com/](https://wheelofnames.com/)

- [https://www.tweentribune.com/](https://www.tweentribune.com/)

- TweenTribune is a free, not-for-profit online newspaper. It is updated daily with stories from the Associated Press that are chosen based on relevancy to pre-adolescents.
## Work-Based Learning, Simulated Work Experiences, and Experiential Learning:

| Guest Speakers or Field Trip, CTSO Competitive Events |

## CTSO Connection:

| FBLA Business Law, Business Ethics, (Mobile Application Development) |
| DECA (Business Law and Ethics Team Decision Making) |

## Certification/Credential Connection:

| Adobe Certified Associate (ACA) – Photoshop / Dreamweaver / Premier Pro / InDesign / Illustrator |
| ASK Institute – Concepts of Entrepreneurship and Management / Fundamental Business Concepts |
| Certiport- Entrepreneurship and Small Business (must hold concentrator status) |
| IC3 Global Standard 6 (or higher), Microsoft Office Expert 2019/365 - Access / Excel / Word |
| Microsoft Office Specialist 2019/365 (MOS) (Two of the following areas REQUIRED: Excel Associate / Outlook Associate / PowerPoint Associate / Word Associate) |
Unit 4 Title: Collaborative Research

Content Standards
3. Collaborate with peers, experts, or community members to analyze local, national, and global issues and problems in developing mobile applications.

Unpacked Learning Objectives

Students know:
● How to analyze local, national, and global issues and problems in developing mobile applications.

Students are able to:
● Analyze local, national, and global issues and problems in developing mobile applications.

Students understand that:
● There are local, national, and global issues and problems in developing mobile applications.

<table>
<thead>
<tr>
<th>Unit Driving/Essential Question</th>
<th>What are the local, national, and global issues students need to know when developing and using mobile applications?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exemplar High Quality Unit Task</td>
<td>Students are aware of the local, national, and global issues in using and developing mobile applications.</td>
</tr>
</tbody>
</table>
### Map of Student Learning by Learning Objective

|----------------------------------|--------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------------|---------------------------------|
| Students unite with peers, experts, or community members to analyze local, national, and global issues and problems in developing mobile applications. | Formative: The teacher lectures on local, national, and global issues and problems in developing mobile applications.  
- classwork rubric  
- class discussions  
- quizzes  
- exit slips  
- peer reviews  
- self-assessment  
- listening/note taking guides  
- interactive review games  
Summative: The teacher observes students think, pair, and share their research findings on local, national, and global issues and problems in developing mobile applications. | Group Activity: Students are separated in small groups and given the task to interview individuals within the community, gather information from local, national, and global news websites on the topic of problems in developing mobile applications. Students can present their findings via a created PowerPoint presentation, video, and/or broadcast. | SCI: Setup a Zoom video conference call or invite an app developer or professor to speak about local, national, and global issues and problems in developing mobile applications.  
ELA: Collaborative discussion and presentation,  
SS: Business marketing-analyze how apps support businesses | Computer  
Internet Connectivity  
Presentation Software  
Interactive Board  
Flipgrid Video https://auth.flipgrid.com/sign-up  
Graphic Design Platform https://www.canva.com/  
Peer Review Handout https://www.wssd.org/cms/lib/PA01001072/Centricity/Domain/257/Peer%20Eval  
CNN the latest news and breaking news today for U.S., world |
| Summative: The teacher observes students create a digital production on local, national, and global issues and problems in developing mobile applications. | Useful Links:  
- MBA Research  
- iCEV  
- Teach FBLA  
- Teach DECA  
- EdPuzzle videos, articles, and resources  
- EverFi additional teaching resources and activities  
- MBA Research for Curriculum guides, lessons plan, and modules  
- Wheel spinner for interactive game  
- TweenTribune is a free, not-for-profit online newspaper. It is updated daily with stories from the Associated Press that are |
Key Vocabulary
analyze, local issues, national issues, global issues, mobile applications, competitive and overcrowded markets, OS and Mobile Device, software, architecture pattern

Work-Based Learning, Simulated Work Experiences, and Experiential Learning:
Guest Speakers or Field Trip, CTSO Competitive Events

CTSO Connection:
FBLA (Public Service Announcement, Digital Video Production, Broadcast Journalism, Business Law, Business Ethics, Mobile Application Development)
DECA (Business Law and Ethics Team Decision Making)

Certification/Credential Connection:
Adobe Certified Associate (ACA) – Photoshop / Dreamweaver / Premier Pro / InDesign / Illustrator
ASK Institute – Concepts of Entrepreneurship and Management / Fundamental Business Concepts
Certiport- Entrepreneurship and Small Business (must hold concentrator status)
IC3 Global Standard 6 (or higher), Microsoft Office Expert 2019/365 - Access / Excel / Word
Microsoft Office Specialist 2019/365 (MOS) (Two of the following areas REQUIRED: Excel Associate / Outlook Associate / PowerPoint Associate / Word Associate)
Unit 5 Title: Careers

Content Standards
4. Gather and present information on mobile app developers and popular applications.
   4a. Research ways that technology is affecting careers in mobile applications development.

Unpacked Learning Objectives

Students know:
- Information on mobile app developers and popular applications.
- Ways that technology is affecting careers in mobile applications development.

Students are able to:
- Gather information on mobile app developers and popular applications.
- Find out information on mobile app developers and popular applications.
- Describe ways that technology is affecting careers in mobile applications development.

Students understand that:
- There are various career opportunities in the field of mobile app development.
- Careers in the field of mobile applications development are affected by technology.

<table>
<thead>
<tr>
<th>Unit Driving/Essential Question</th>
<th>What type of career opportunities are there in the field of mobile app development? What are the ways that technology is affecting careers in mobile applications development?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exemplar High Quality Unit Task</td>
<td>Students are aware of the various careers in the field of mobile app development.</td>
</tr>
</tbody>
</table>
### Map of Student Learning by Learning Objective

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Students research and present information on mobile app developers and popular applications.</td>
<td>Formative: The teacher lectures on mobile app developers and popular applications. Teacher lecture on careers for mobile app developers. ● classwork rubric ● class discussions ● quizzes ● exit slips ● peer reviews ● self-assessment ● listening/note taking guides ● interactive review games</td>
<td>Group Activity: Students are separated in small groups and given the task to create and present their findings via a created PowerPoint presentation, video, and/or broadcast.</td>
<td>ELA: Research using credible sources, Boolean search, databases search, collaborative presentation, integrate information from multiple sources SS: Use apps to promote businesses</td>
<td>Computer Internet Connectivity Presentation Software Interactive Board Grammarly <a href="https://app.grammarly.com">https://app.grammarly.com</a>, can be accessed through clever. Flipgrid Video <a href="https://auth.flipgrid.com/signup">https://auth.flipgrid.com/signup</a> Graphic Design Platform <a href="https://www.canva.com/">https://www.canva.com/</a> Peer Review Handout YouTube <a href="https://www.youtube.com/">https://www.youtube.com/</a></td>
</tr>
</tbody>
</table>
- Unit exam with multiple choice
- Fill-In-Blank
- Short answer questions
- Unit project incorporating all learned skills and concepts
- Presentations
- Written Essay/Reports

Summative: The teacher observed students create a digital production on mobile app developers and popular applications.

Summative: The teacher observes students research, design, and create a digital production on a career for mobile app developers.

---

Useful Links:
- MBA Research
- iCEV
- Teach FBLA
- Teach DECA
- EdPuzzle videos, articles, and resources [https://edpuzzle.com/discover](https://edpuzzle.com/discover)
- EverFi additional teaching resources and activities [https://everfi.com/](https://everfi.com/)
- MBA Research for Curriculum guides, lessons plan, and modules [https://www.mbaresearch.org/](https://www.mbaresearch.org/)
- Wheel spinner for interactive game [https://wheelofnames.com/](https://wheelofnames.com/)
- [https://www.tweentribune.com/](https://www.tweentribune.com/)
  TweenTribune is a free, not-for-profit online newspaper. It is updated daily with stories from the Associated Press that are used to create a broadcast Occupational Outlook Handbook [https://www.bls.gov/ooh/](https://www.bls.gov/ooh/)
| Students research ways that technology is affecting careers in mobile applications development. | Formative: The teacher lectures on ways that technology is affecting careers in mobile applications development.  
- Observation of student progress  
  - classwork rubric  
  - class discussion  
  - quizzes  
  - exit slips  
  - peer review  
  - self-assessment  
  - listening/note-taking guides  
  - interactive review games | Group Activity: Students are separated in small groups and given the task to create and present their findings via a created PowerPoint presentation, video, and/or broadcast.  
- Give a presentation  
- Create a poster or illustration document  
- Create a brochure  
- Create a storyboard or infographic  
- Create a video or audio  
- Create a broadcast  
- Create a written essay or paragraph | SCI: Students will research and create a PowerPoint presentation on how software engineers are using technology to create job opportunities for mobile app developers.  
ELA: Research using credible sources, Boolean search, databases search, collaborative presentation, integrate information from multiple sources  
SS: How technology affects unemployment rate  
MATH: Students will research the math knowledge needed to gain a career in mobile application development. |
| --- | --- | --- | --- |
| Summative: The teacher observes students think, pair, and share their research findings on ways that technology is affecting careers in mobile applications development.  
- unit exam with multiple choice  
- fill-in-blank  
- short answer questions  
- unit project incorporating all learned skills and concepts  
- visual display & presentations |  |  |  |
| chosen based on relevancy to pre-adolescents. |  |  |  |

**Materials:**  
- Computer  
- Internet Connectivity  
- Presentation Software  
- Interactive Board  
- What Do Mobile App Developers Do? | Built In  
- Flipgrid Video  
[https://auth.flipgrid.com/signup](https://auth.flipgrid.com/signup)  
- Graphic Design Platform  
[https://www.canva.com/](https://www.canva.com/)  
- Peer Review Handout  
- YouTube  
[https://www.youtube.com/](https://www.youtube.com/)  
- Grammarly  
[https://app.grammarly.com](https://app.grammarly.com), can be accessed through clever.
<table>
<thead>
<tr>
<th>Written essays/reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summative: The teacher observes students create a digital production on ways that technology is affecting careers in mobile applications development.</td>
</tr>
<tr>
<td>Summative: The teacher observes students research, design, and create digital production ways that technology is affecting careers in mobile applications development.</td>
</tr>
</tbody>
</table>

**Useful Links:**
- MBA Research
- iCEV
- Teach FBLA
- Teach DECA
- EdPuzzle videos, articles, and resources [https://edpuzzle.com/discover](https://edpuzzle.com/discover)
- EverFi additional teaching resources and activities [https://everfi.com/](https://everfi.com/)
- MBA Research for Curriculum guides, lessons plan, and modules [https://www.mbaresearch.org/](https://www.mbaresearch.org/)
- Wheel spinner for interactive game [https://wheelofnames.com/](https://wheelofnames.com/)
- [https://www.tweentribune.com/](https://www.tweentribune.com/)
  TweenTribune is a free, not-for-profit online newspaper. It is updated daily with stories from the Associated Press that are chosen based on relevancy to pre-adolescents.
### Key Vocabulary

| mobile app developers, popular applications, careers in mobile application development, engineering, biomedical sciences, computer science |

### Work-Based Learning, Simulated Work Experiences, and Experiential Learning:

| Guest Speakers or Field Trip, CTSO Competitive Events |

### CTSO Connection:

| FBLA (Public Service Announcement, Digital Video Production, Broadcast Journalism, Mobile Application Development) |
| DECA (Business Law and Ethics Team Decision Making) |

### Certification/Credential Connection:

| Adobe Certified Associate (ACA) – Photoshop / Dreamweaver / Premier Pro / InDesign / Illustrator |
| ASK Institute – Concepts of Entrepreneurship and Management / Fundamental Business Concepts |
| Certiport- Entrepreneurship and Small Business (must hold concentrator status) |
| IC3 Global Standard 6 (or higher), Microsoft Office Expert 2019/365 - Access / Excel / Word |
| Microsoft Office Specialist 2019/365 (MOS) (Two of the following areas REQUIRED: Excel Associate / Outlook Associate / PowerPoint Associate / Word Associate) |
Unit 6 Title: Design

Content Standards
5. Analyze user-centered design principles in various models of an app or code.
6. Analyze the structure and functionality of various mobile programs.

Unpacked Learning Objectives

Students know:
● User-centered design principles in various models of an app or code.
● The structure and functionality of various mobile programs.

Students are able to:
● Summarize user-centered design principles in various models of an app or code.
● Explain user-centered design principles in various models of an app or code.
● Summarize the structure and functionality of various mobile programs.
● Describe the structure and functionality of various mobile programs.

Students understand that:
● Mobile Application Development uses principles in various models of an app or code to design.
● Mobile programs do have their own unique structure and functionality.

<table>
<thead>
<tr>
<th>Unit Driving/Essential Question</th>
<th>What principles and models are needed to design an app or code? What are some of the structure and functionality of various mobile programs?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exemplar High Quality Unit Task</td>
<td>Students can determine the principles and models needed to design an app or code.</td>
</tr>
</tbody>
</table>
### Map of Student Learning by Learning Objective

|----------------------------------|--------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------|
| Students examine user-centered design principles in various models of an app or code. | Formative: The teacher lectures and demonstrates the examining of user-centered design principles in various models of an app or code.  
- Observation of student progress  
  - classwork rubric  
  - class discussion  
  - quizzes  
  - exit slips  
  - peer review  
  - self-assessment  
  - listening/notes-taking guides  
  - interactive review games  
Summative: The teacher observes students think, pair, and share their knowledge of examining user-centered design | Group Activity: Students are separated in small groups and given the task to create and present their findings via a created PowerPoint presentation, video, and/or broadcast.  
- Give a presentation  
- Create a poster or illustration document  
- Create a brochure  
- Create a storyboard or infographic  
- Create a video or audio  
- Create a broadcast  
- Create a written essay or paragraph | ELA: Comprehending informative text, collaborative presentation, using visuals and other media to convey meaning | Equipment List by CTE Cluster  
[Link to Helpful Tech Tools](#) |

**Learning Activity Checklist**  
[Link to Differentiation Examples](#)

**Integrated and Related Academic Content:** ELA, Math, Science, and/or Social Studies Concepts & Activities

**Equipment, Technology & Materials**

- Computer
- Internet Connectivity
- Presentation Software
- Interactive Board
- Flipgrid Video  
  [https://auth.flipgrid.com/signup](https://auth.flipgrid.com/signup)
- Graphic Design Platform  
  [https://www.canva.com/](https://www.canva.com/)
- Peer Review Handout  
- YouTube  
  [https://www.youtube.com/](https://www.youtube.com/)
- Grammarly

**Potential Learning Activities**

- Group Activity: Students are separated in small groups and given the task to create and present their findings via a created PowerPoint presentation, video, and/or broadcast.
- ELA: Comprehending informative text, collaborative presentation, using visuals and other media to convey meaning

**Equipment List by CTE Cluster**

[Link to Helpful Tech Tools](#)
principles in various models of an app or code.

Summative: The teacher observes students create a digital production that displays their knowledge of examining user-centered design principles in various models of an app or code.

https://app.grammarly.com, can be accessed through clever.

Useful Links:
- MBA Research
- iCEV
- Teach FBLA
- Teach DECA

EdPuzzle videos, articles, and resources
https://edpuzzle.com/discover

EverFi additional teaching resources and activities
https://everfi.com/

MBA Research for Curriculum guides, lessons plan, and modules
https://www.mbaresearch.org/

Wheel spinner for interactive game
https://wheelofnames.com/

https://www.tweentribune.com/
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<p>| relevancy to pre-adolescents. |</p>
<table>
<thead>
<tr>
<th>Students investigate the structure and functionality of various mobile programs.</th>
</tr>
</thead>
</table>
| Formative: The teacher provides a classroom lecture on the functionality of various mobile programs.  
  - Observation of student progress  
    - classwork rubric  
    - class discussion  
    - quizzes  
    - exit slides  
    - peer review  
    - self-assessment  
    - listening/notes-taking guides  
    - interactive review games  |
| Group Activity: Students are separated in small groups and given the task to create and present their findings via a created PowerPoint presentation, video, and/or broadcast.  
  - Give a presentation  
  - Create a poster or illustration document  
  - Create a brochure  
  - Create a storyboard or infographic  
  - Create a video or audio  
  - Create a broadcast  
  - Create a written essay or paragraph  |
| ELA: Research using credible sources, Boolean search, databases search, collaborative presentation, integrate information from multiple sources, informative writing  
  SS: Use apps to promote businesses  |
| Computer  
  Internet Connectivity  
  Presentation Software  
  Interactive Board  
  Flipgrid Video [https://auth.flipgrid.com/signup](https://auth.flipgrid.com/signup)  
  Graphic Design Platform [https://www.canva.com/](https://www.canva.com/)  
  YouTube [https://www.youtube.com/](https://www.youtube.com/) used to create a broadcast  
  Grammarly [https://app.grammarly.com](https://app.grammarly.com), can be accessed through clever.  
  Useful Links: MBA Research  
  iCEV  
  Teach FBLA  
  Teach DECA  
  EdPuzzle videos, articles, and resources |
https://edpuzzle.com/discover

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https://www.tweentribune.com/
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Key Vocabulary
user-centered design principles, app, code, print characters, sound, images, video, functionality, mobile programs, user interface components, data components, event handlers, procedures

Work-Based Learning, Simulated Work Experiences, and Experiential Learning:
Guest Speakers or Field Trip, CTSO Competitive Events

CTSO Connection:
FBLA (Public Service Announcement, Digital Video Production, Broadcast Journalism, Mobile Application Development)
DECA (Business Law and Ethics Team Decision Making)

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Microsoft Office Specialist 2019/365 (MOS) (Two of the following areas REQUIRED: Excel Associate / Outlook Associate / PowerPoint Associate / Word Associate)
Unit 7 Title: Data

Content Standards

7. Evaluate ways to organize data elements, plan for data storage, and manage networked computing for mobile devices.

8. Create interactive data visualizations using software tools to bring attention to and help others understand real-world phenomena and to improve human outcomes related to the phenomena.
   8a. Select and use appropriate data features to create the desired functionality of an app.

9. Use data analysis tools to identify patterns in complex systems and create an algorithm to simplify the process.
   9a. Create an algorithm or sequence of steps to simplify daily life procedures at home or at the office.

Unpacked Learning Objectives

Students know:
- Ways to organize data elements, plan for data storage, and manage networked computing for mobile devices.
- How to create interactive data visualizations using software tools to bring attention to and help others understand real-world phenomena and to improve human outcomes related to the phenomena.
- How to use appropriate data features to create the desired functionality of an app.
- How to select appropriate data features to create the desired functionality of an app.
- How to use data analysis tools to identify patterns in complex systems and create an algorithm to simplify the process.
- An algorithm or sequence of steps to simplify daily life procedures at home or at the office.

Students are able to:
- Summarize ways to organize data elements, plan for data storage, and manage networked computing for mobile devices.
- Describe the ways to organize data elements, plan for data storage, and manage networked computing for mobile devices.
- Develop interactive data visualizations using software tools to bring attention to and help others understand real-world phenomena and to improve human outcomes related to the phenomena.
- Determine the appropriate data features to create the desired functionality of an app.
- Determine data analysis tools to identify patterns in complex systems and create an algorithm to simplify the process.
- Recognize data analysis tools to identify patterns in complex systems and create an algorithm to simplify the process.
- Describe the algorithm or sequence of steps to simplify daily life procedures at home or at the office.

Students understand that:
- There are various ways to manage and store data.
- Mobile Application Development uses software tools to create interactive data visualizations to bring attention to and to help others
understand real-world phenomena and to improve human outcomes related to the phenomena.
- Mobile Application Developers must determine the appropriate data features to create the desired functionality of an app.
- There are data analysis tools to identify patterns in complex systems and create an algorithm to simplify the process.
- There is an algorithm or sequence of steps to simplify daily life procedures at home or at the office.

| Unit Driving/Essential Question | What are the various ways to store and manage data?  
What are the various ways to organize data elements, plan for data storage, and manage networked computing for mobile devices?  
What data analysis tools can be used to identify patterns in complex systems and used to create an algorithm to simplify the process? |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Exemplar High Quality Unit Task</td>
<td>Students can demonstrate the various ways to store and manage data.</td>
</tr>
</tbody>
</table>
## Map of Student Learning by Learning Objective

|-------------------------------|---------------------------------|-------------------------------|---------------------------------------------------------------|---------------------------------|
computing for mobile devices.
- Think, Pair, Share
- Collaborative Learning
- Unit exam with multiple choice
- fill-in-blank
- short answer questions
- unit project incorporating all learned skills and concepts
- visual displays
- presentation
- written essay/reports

Summative: In small groups, the teacher observes students create visuals to illustrate ways to organize data elements, plan for data storage, and manage networked computing for mobile devices.
| Students design interactive data visualizations using software tools to bring attention to and help others understand real-world phenomena and to improve human outcomes related to the phenomena. | Formative: The teacher provides a classroom lecture and demonstrates the designing interactive data visualizations using software tools to bring attention to and help others understand real-world phenomena and to improve human outcomes related to the phenomena.  
- classwork rubric  
- class discussions  
- quizzes  
- exit slips  
- peer reviews  
- self-assessment  
- listening/note taking guides  
- interactive review games  
Formative: The teacher observes students think, pair, and share ways to design interactive data visualizations using software tools to bring attention to and help others understand real-world phenomena and to improve human outcomes related to the phenomena.  
- Peer Review  
- Visual Presentation  
  - PowerPoint Presentation  
  - Digital Video Production  
- Graphic Organizer  
- Create a presentation or illustrative document  
- Brochure  
- Storyboard or infographic  
- Create a written essay or paragraph | Small Group Activity: Students will design and present interactive data visualizations using software tools to bring attention to and help others understand real-world phenomena and to improve human outcomes related to the phenomena.  
- Peer Review  
- Visual Presentation  
  - PowerPoint Presentation  
  - Digital Video Production  
- Graphic Organizer  
- Create a presentation or illustrative document  
- Brochure  
- Storyboard or infographic  
- Create a written essay or paragraph | ELA: Use technology tools to organize informative text, collaborative presentation, use different forms of media to present information  
SS: Human behavior (sociology)  
Digital Presentation Software  
Interactive Board  
Presentation Software  
Graphic Design Platform [https://www.canva.com/](https://www.canva.com/)  
Flipgrid Video [https://auth.flipgrid.com/signup](https://auth.flipgrid.com/signup)  
Grammarly [https://app.grammarly.com](https://app.grammarly.com), can be accessed through clever. |
human outcomes related to the phenomena.

- Think, Pair, Share
- Collaborative Learning

**Summative:** In small groups, the teacher observes students create visuals to illustrate ways to organize data elements, plan for data storage, and manage networked computing for mobile devices.

| Students identify and apply appropriate data features to create the desired outcomes | Formative: The teachers provide a classroom lecture and identify the appropriate features for learning outcomes. | Individual Activity: Students are to identify the appropriate features as part of their learning process. | SCI: Students will learn how to make a flowchart for programming. This activity helps in understanding the logic and flow of data. |

**Useful Links:**
- MBA Research
- iCEV
- Teach FBLA
- Teach DECA
- EdPuzzle videos, articles, and resources [https://edpuzzle.com/discover](https://edpuzzle.com/discover)
- EverFi additional teaching resources and activities [https://everfi.com/](https://everfi.com/)
- MBA Research for Curriculum guides, lessons plan, and modules [https://www.mbaresearch.org/](https://www.mbaresearch.org/)
- Wheel spinner for interactive game [https://wheelofnames.com/](https://wheelofnames.com/)
- [https://www.tweentribune.com/](https://www.tweentribune.com/)
  TweenTribune is a free, not-for-profit online newspaper. It is updated daily with stories from the Associated Press that are chosen based on relevancy to pre-adolescents.

Graphic Organizer [https://www.hmhco.com/bil](https://www.hmhco.com/bil)
<table>
<thead>
<tr>
<th>Functionality of an App</th>
<th>Appropriate Data Features Needed to Create the Desired Functionality of an App.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Classwork Rubric</td>
</tr>
<tr>
<td></td>
<td>- Class Discussions</td>
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<td></td>
<td>- Quizzes</td>
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<td>- Exit Slips</td>
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<td></td>
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<td></td>
<td>- Self-Assessment</td>
</tr>
<tr>
<td></td>
<td>- Listening/Note Taking Guides</td>
</tr>
<tr>
<td></td>
<td>- Interactive Review Games</td>
</tr>
</tbody>
</table>

Formative: The teacher observes students apply appropriate data features to create the desired functionality of an app.
- Classwork Rubric
- Class Discussions
- Quizzes
- Exit Slips
- Peer Reviews
- Self-Assessment
- Listening/Note Taking Guides
- Interactive Review Games

Summative: In small groups, the teacher observes students apply appropriate data features to create the desired functionality of an app.
- Classwork Rubric
- Class Discussions
- Quizzes
- Exit Slips
- Peer Reviews
- Self-Assessment
- Listening/Note Taking Guides
- Interactive Review Games

Small Group Activity: Students will design and present a project that requires them to apply appropriate data features to create the desired functionality of an app.
- Peer Review
- Visual Presentation
  - PowerPoint Presentation
  - Digital Video Production
- Graphic Organizer
- Create a presentation or illustrative document
- Brochure
- Storyboard or infographic
- Create a written essay or paragraph

Flowchart will help students to create a simple guessing game with only a few steps and uses all the standard shapes in a flowchart and has branches.

MATH: Students will practice building a simple calculator app using Android Studio through the Geeks for Geeks website.

ELA: Use technology tools to organize informative text, comprehending informative text

Useful Links:
- MBA Research
- iCEV
- Teach FBLA
- Teach DECA
- EdPuzzle videos, articles, and resources
https://edpuzzle.com/discover

EverFi additional teaching resources and activities
https://everfi.com/

MBA Research for Curriculum guides, lessons plan, and modules
https://www.mbaresearch.org/

Wheel spinner for interactive game
https://wheelofnames.com/

https://www.tweentribune.com/
TweenTribune is a free, not-for-profit online newspaper. It is updated daily with stories from the Associated Press that are chosen based on relevancy to pre-adolescents.

How to build a simple Calculator app using Android Studio?
https://www.geeksforgeeks.org/how-to-build-a-simple-calculator-app-using-android-studio/?ref=lbp
Students select data analysis tools to identify patterns in complex systems and create an algorithm to simplify the process.

| Small Group Activity: Students will design and present a project that requires the selecting of data analysis tools to identify patterns in complex systems and create an algorithm to simplify the process. |
| SCI: Students will research and create a list of five data analysis tools for data management. |
| MATH: Students will research and create a list of machine learning algorithms every beginner should know. |
| MATH: Students will use their research to create an algorithm to simplify complex systems. |
| ELA: Use technology tools to organize informative text, comprehending informative text |
| MATH: Students will incorporate Boolean Algebra into their algorithm. |

| Graphic Organizer |
| Digital Presentation Software |
| Interactive Board |
| Presentation Software |
| Graphic Design Platform |
| Flipgrid Video |
| Peer Review Handout |

How to Make a Flowchart for Programming Easy to Understand

[https://www.technokids.com/blog/teaching-strategies/how-to-make-a-flowchart-for-programming-easy-to-understand/](https://www.technokids.com/blog/teaching-strategies/how-to-make-a-flowchart-for-programming-easy-to-understand/)
- **Collaborative Learning**
  
  Summative: In small groups, the teacher observes students select data analysis tools to identify patterns in complex systems and create an algorithm to simplify the process.
- **Think, Pair, Share**
- **Collaborative Learning**
- Unit exam with multiple choice
- fill-in-blank
- short answer questions
- unit project incorporating all learned skills and concepts
- visual displays
- presentation
- written essay/reports

---

**Useful Links:**
- [MBA Research](https://www.mbaresearch.org/)
- [iCEV](https://www.icev.com)
- [Teach FBLA](https://teachfbla.org)
- [Teach DECA](https://teachdeca.org)
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- Wheel spinner for interactive game [https://wheelofnames.com/](https://wheelofnames.com/)
- [TweenTribune](https://www.tweentribune.com/)
  TweenTribune is a free, not-for-profit online newspaper. It is updated daily with stories from the Associated Press that are...
Students design an algorithm or sequence of steps to simplify daily life procedures at home or at the office.

Formative: The teachers provide a classroom lecture on designing an algorithm or sequence of steps to simplify daily life procedures at home or at the office.
- classwork rubric
- class discussions
- quizzes
- exit slips
- peer reviews
- self-assessment
- listening/note taking guides
- interactive review games

Small Group Activity: Students will design an algorithm or sequence of steps to simplify daily life procedures at home or at the office.
- Peer Review
- Visual Presentation
  - PowerPoint Presentation
  - Digital Video Production
- Graphic Organizer
- Create a presentation or illustrative document
- Brochure
- Storyboard or infographic

ELA: Use technology tools to organize informative text, comprehending informative text

SS: Business management, effective use of time

MATH: Students will incorporate Boolean Algebra into their algorithm.

MATH: Students will create a pie chart of the percentage of time spent doing each task.

<table>
<thead>
<tr>
<th>Graphic Organizer</th>
<th>Digital Presentation Software</th>
<th>Interactive Board</th>
<th>Presentation Software</th>
<th>Graphic Design Platform</th>
<th>Flipgrid Video</th>
</tr>
</thead>
</table>
Formative: The teacher observes students think, pair, and share the various ways to design an algorithm or sequence of steps to simplify daily life procedures at home or at the office.

- Think, Pair, Share
- Collaborative Learning

Summative: In small groups, the teacher observes students design an algorithm or sequence of steps to simplify daily life procedures at home or at the office.

- Think, Pair, Share
- Collaborative Learning

- Unit exam with multiple choice
- Fill-in-blank
- Short answer questions
- Unit project incorporating all learned skills and concepts
- Visual displays
- Presentation
- Written essay/reports

- Create a written essay or paragraph

Peer Review Handout

Grammarly
https://app.grammarly.com, can be accessed through clever.

Useful Links:
MBA Research
iCEV
Teach FBLA
Teach DECA

EdPuzzle videos, articles, and resources
https://edpuzzle.com/discover

EverFi additional teaching resources and activities
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MBA Research for Curriculum guides, lessons plan, and modules
https://www.mbaresearch.org/

Wheel spinner for interactive game
| | | | https://wheelofnames.com/ |
| | | | https://www.tweentribune.com/ |
| TweenTribune is a free, not-for-profit online newspaper. It is updated daily with stories from the Associated Press that are chosen based on relevancy to pre-adolescents. |
Key Vocabulary

- data elements, data storage, networked computing, mobile devices, client server, peer-to-peer, cloud computing for mobile devices, interactive, data visualizations, software tools, real word phenomena, weather patterns, natural disasters, radar trackers, traffic patterns, store inventory, medical diagnose, packaging, customer service, fitness data, appropriate data features, functionality, app, storage data, data analysis tools, patterns in complex systems, algorithm, sequence of steps, daily life procedures, deciding what to wear, meal planning, creating or organizing, recipes, time management, creating and organizing charts, inventory, customer feedback collection, data analysis

Work-Based Learning, Simulated Work Experiences, and Experiential Learning:

Guest Speakers or Field Trip, CTSO Competitive Events

CTSO Connection:

- FBLA (Public Service Announcement, Digital Video Production, Broadcast Journalism, Mobile Application Development)
- DECA (Business Law and Ethics Team Decision Making)

Certification/Credential Connection:

- Adobe Certified Associate (ACA) – Photoshop / Dreamweaver / Premier Pro / InDesign / Illustrator
- ASK Institute – Concepts of Entrepreneurship and Management / Fundamental Business Concepts
- Certiport- Entrepreneurship and Small Business (must hold concentrator status)
- IC3 Global Standard 6 (or higher), Microsoft Office Expert 2019/365 - Access / Excel / Word
- Microsoft Office Specialist 2019/365 (MOS) (Two of the following areas REQUIRED: Excel Associate / Outlook Associate / PowerPoint Associate / Word Associate)
Unit 8 Title: Systems

Content Standards

10. Evaluate mobile app scalability and the reliability of mobile networks and protocols, including ability to manage a large and increasing number of clients, customers, and users and accommodate overall growth; ease of app maintenance; measures to prevent gridlock; offline reliability; speed; and end result.
   10a. Identify fastest mobile networks and analyze their features.

11. Compare and contrast various mobile operating software systems.

12. Describe the advantages and disadvantages of using artificial intelligence in mobile networks, physical systems, and software.

13. Analyze advantages, disadvantages, and features of various cybersecurity programs, and determine which situations are best suited for each.
   13a. Explain the importance of protecting personal information.

Unpacked Learning Objectives

Students know:
- Mobile app scalability and the reliability of mobile networks and protocols, including ability to manage a large and increasing number of clients, customers, and users and accommodate overall growth; ease of app maintenance; measures to prevent gridlock; offline reliability; speed; and end result.
- How to identify the fastest mobile networks and analyze their features.
- How to distinguish between various mobile operating software systems.
- The advantages and disadvantages of using artificial intelligence in mobile networks, physical systems, and software.
- Advantages, disadvantages, and features of various cybersecurity programs, and determine which situations are best suited for each.
- The importance of protecting personal information.

Students are able to:
- Identify mobile app scalability and the reliability of mobile networks and protocols, including ability to manage a large and increasing number of clients, customers, and users and accommodate overall growth; ease of app maintenance; measures to prevent gridlock; offline reliability; speed; and end result.
- Discuss mobile app scalability and the reliability of mobile networks and protocols, including ability to manage a large and increasing number of clients, customers, and users and accommodate overall growth; ease of app maintenance; measures to prevent gridlock; offline reliability; speed; and end result.
- Determine mobile app scalability and the reliability of mobile networks and protocols, including ability to manage a large and increasing number of clients, customers, and users and accommodate overall growth; ease of app maintenance; measures to prevent gridlock; offline reliability; speed; and end result.
reliability; speed; and end result.
- Select the fastest mobile networks and analyze their features.
- Identify fastest mobile networks and analyze their features.
- Describe fastest mobile networks and analyze their features.
- Summarize fastest mobile networks and analyze their features.
- Distinguish between various mobile operating software systems.
- Compare and contrast various mobile operating software systems.
- Describe the advantages and disadvantages of using artificial intelligence in mobile networks, physical systems, and software.
- Describe the advantages, disadvantages, and features of various cybersecurity programs, and determine which situations are best suited for each.
- Summarize the advantages, disadvantages, and features of various cybersecurity programs, and determine which situations are best suited for each.
- Summarize the importance of protecting personal information.

Students understand that:
- Mobile Application Developers must understand the entire system of mobile apps.
- Mobile networks speed and features do vary.
- There are similarities as well as differences between various operating software systems.
- There are advantages as well as disadvantages of using artificial intelligence in mobile networks, physical systems, and software.
- There are advantages, disadvantages, and varied features of various cybersecurity programs.
- Protecting personal information is a very critical factor to consider when choosing mobile apps.

<table>
<thead>
<tr>
<th>Unit Driving/Essential Question</th>
<th>Students can describe the features of various mobile app systems.</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the features of the mobile app systems?</td>
<td></td>
</tr>
<tr>
<td>What are the fastest mobile networks?</td>
<td></td>
</tr>
<tr>
<td>What are the advantages and disadvantages of using artificial intelligence in mobile networks, physical systems, and software?</td>
<td></td>
</tr>
<tr>
<td>What is the importance of protecting personal information?</td>
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</tbody>
</table>
# Map of Student Learning by Learning Objective

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Students determine mobile app scalability and the reliability of mobile networks and protocols, including ability to manage a large and increasing number of clients, customers, and users and accommodate overall growth; ease of app maintenance; measures to prevent gridlock; offline reliability; speed; and end result.</td>
<td>Formative: The teachers provide a classroom lecture on mobile app scalability and the reliability of mobile networks and protocols, including ability to manage a large and increasing number of clients, customers, and users and accommodate overall growth; ease of app maintenance; measures to prevent gridlock; offline reliability; speed; and end result.</td>
<td>Small Group Activity: Students will evaluate mobile app scalability and the reliability of mobile networks and protocols, including ability to manage a large and increasing number of clients, customers, and users and accommodate overall growth; ease of app maintenance; measures to prevent gridlock; offline reliability; speed; and end result.</td>
<td>ELA: Comprehending informative text, research synthesis&lt;br&gt;SS: Determine how app availability contributes to business profit</td>
<td>Equipment List by CTE Cluster&lt;br&gt;Equipment List by Technology &amp; Materials&lt;br&gt;Equipment List by Graphic Design &amp; Tech Tools</td>
</tr>
</tbody>
</table>
| - classroom rubric<br>- class discussions<br>- quizzes<br>- exit slips<br>- peer reviews<br>- self-assessments<br>- listening/notes-taking guides<br>- interactive review games | - Peer Review<br>- Visual Presentation<br>  - PowerPoint Presentation<br>  - Digital Video Production<br>- Graphic Organizer<br>- Create a presentation or illustrative document<br>- Brochure<br>- Storyboard or infographic | | | Graphic Organizer<br>https://www.hmhco.com/blog/free-graphic-organizer-templates<br>Digital Presentation Software<br>Interactive Board<br>Presentation Software<br>Graphic Design Platform<br>https://www.canva.com/
| | | | | Flipgrid Video<br>https://auth.flipgrid.com/sign up<br>Peer Review Handout<br>https://www.wssd.org/cms/lib/PA01001072/Centricity/Domain/257/Peer%20Eval
Summative: In small groups, the teacher observes students evaluate mobile app scalability and the reliability of mobile networks and protocols, including ability to manage a large and increasing number of clients, customers, and users and accommodate overall growth; ease of app maintenance; measures to prevent gridlock; offline reliability; speed; and end result.
- unit exam with multiple choices
- fill-in-blank
- short answer questions
- unit project incorporating all learned skills and concepts
- visual video production
- written essay/report

- Create a written essay or paragraph

Useful Links:
- MBA Research
- iCEV
- Teach FBLA
- Teach DECA
- EdPuzzle videos, articles, and resources https://edpuzzle.com/discover
- EverFi additional teaching resources and activities https://everfi.com/
- MBA Research for Curriculum guides, lessons plan, and modules https://www.mbaresearch.org/
- Wheel spinner for interactive game https://wheelofnames.com/
- https://www.tweentribune.com/
  TweenTribune is a free, not-for-profit online
| Students select the fastest mobile networks and analyze their features. | Formative: The teachers provide a classroom lecture on selecting the fastest mobile networks and analyze their features. ● classroom rubric ● class discussions ● quizzes ● exit slips ● peer reviews ● self-assessments ● listening/notes-taking guides ● interactive review games | Small Group Activity: Students will describe the ways to select the fastest mobile networks and analyze their features. ● Peer Review ● Visual Presentation ○ PowerPoint Presentation ○ Digital Video Production ● Graphic Organizer ● Create a presentation or illustrative document ● Brochure ● Storyboard or infographic ● Create a written essay or paragraph | ELA: Comprehending informative text, research synthesis SS: Determine how app availability contributes to business profit |

|   | newspaper. It is updated daily with stories from the Associated Press that are chosen based on relevancy to pre-adolescents. |   |   |

**Graphic Organizer** [https://www.hmhco.com/blog/free-graphic-organizer-templates](https://www.hmhco.com/blog/free-graphic-organizer-templates)

**Digital Presentation Software**

**Interactive Board**

**Presentation Software**

**Graphic Design Platform** [https://www.canva.com/](https://www.canva.com/)

**Flipgrid Video** [https://auth.flipgrid.com/signUp](https://auth.flipgrid.com/signUp)


**Grammarly** [https://app.grammarly.com](https://app.grammarly.com), can be accessed through clever.
<table>
<thead>
<tr>
<th>Students compare and contrast various mobile operating software systems.</th>
<th>Formative: The teachers provide a classroom lecture on various mobile operating software systems.</th>
</tr>
</thead>
</table>
|  | • classroom rubric  
|  | • class discussions  
|  | • quizzes  
|  | • exit slips  
|  | • peer reviews  
|  | • self-assessments  
|  | • listening/notes-taking guides  
|  | • interactive review games  
| Small Group Activity: Students will describe various mobile operating software systems. | Peer Review  
|  | Visual Presentation  
|  | • PowerPoint Presentation  
|  | • Digital Video Production  
|  | Graphic Organizer  
|  | Create a presentation or illustrative document  
| SCI: Students will use a graphic organizer to compare the differences or similarities between the following 5 mobile operating systems: | Graphic Organizer  
|  | Digital Presentation Software  
|  | Interactive Board  
|  | Presentation Software  
|  | Graphic Design Platform |

| Use of Links:  
MBA Research  
iCEV  
Teach FBLA  
Teach DECA  
EdPuzzle videos, articles, and resources:  
https://edpuzzle.com/discover  
Wheel spinner for interactive game:  
https://wheelofnames.com/
https://www.tweentribune.com/  
TweenTribune is a free, not-for-profit online newspaper. It is updated daily with stories from the Associated Press that are chosen based on relevancy to pre-adolescents. |
<table>
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<tr>
<th>Summative: In small groups, the teacher observes students describe the function of various mobile operating software systems.</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Infographic comparison/contrast chart</td>
</tr>
<tr>
<td>● unit exam with multiple choices</td>
</tr>
<tr>
<td>● fill-in-blank</td>
</tr>
<tr>
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<td>● unit project incorporating all learned skills and concepts</td>
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<td>● written essay/report</td>
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<td>• Brochure</td>
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<tr>
<td>• Storyboard or infographic</td>
</tr>
<tr>
<td>• Create a written essay or paragraph</td>
</tr>
<tr>
<td>ELA: Comprehending informative text, compare and contrast using Venn diagram</td>
</tr>
<tr>
<td>SS: Determine business profit affected by various operating software systems</td>
</tr>
</tbody>
</table>

Flipgrid Video [https://auth.flipgrid.com/signup](https://auth.flipgrid.com/signup)


Grammarly [https://app.grammarly.com](https://app.grammarly.com), can be accessed through clever.

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EdPuzzle videos, articles, and resources [https://edpuzzle.com/discover](https://edpuzzle.com/discover)

EverFi additional teaching resources and activities [https://everfi.com/](https://everfi.com/)

MBA Research for Curriculum guides, lessons plan, and modules
| Students explain in their own words the advantages and disadvantages of using artificial intelligence in mobile networks, physical systems, and software. | Formative: The teachers provide a classroom lecture on the advantages and disadvantages of using artificial intelligence in mobile networks, physical systems, and software. ● classroom rubric ● class discussions ● quizzes ● exit slips ● peer reviews | Small Group Activity: Students will explain in their own words the advantages and disadvantages of using artificial intelligence in mobile networks, physical systems, and software. ● Peer Review ● Visual Presentation ○ PowerPoint Presentation | SCI: Students will use a Venn Diagram to research the advantages and disadvantages of artificial intelligence. ELA: Collaborative presentation, synthesis of research, citing textual evidence and using valid and credible resources | https://www.mbaresearch.org/  
Wheel spinner for interactive game  
https://wheelofnames.com/  
https://www.tweentribune.com/  
TweenTribune is a free, not-for-profit online newspaper. It is updated daily with stories from the Associated Press that are chosen based on relevancy to pre-adolescents.  
Mobile OS Review: Top 5 Mobile Operating Systems Comparison  
https://www.neway.mobi/news/top-5-mobile-operating-systems-os-comparison.html  
Graphic Organizer  
https://www.hmhco.com/blog/free-graphic-organizer-templates  
Digital Presentation Software  
Interactive Board  
Presentation Software |
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<th>Summative: In small groups, the teacher observes students describe the advantages and disadvantages of using artificial intelligence in mobile networks, physical systems, and software.</th>
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<tr>
<td>• self-assessments</td>
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<td>• listening/notes-taking guides</td>
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<tr>
<td>• interactive review games</td>
</tr>
<tr>
<td>SS: Determine how these concepts contribute to business profit</td>
</tr>
<tr>
<td>○ Digital Video Production</td>
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<td>EverFi additional teaching resources and activities</td>
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<tr>
<td>MBA Research for Curriculum guides, lessons</td>
</tr>
</tbody>
</table>

| Graphic Design Platform |
| Flipgrid Video |
| Peer Review Handout |
| Grammarly |

[website links provided for further information and resources]
| Students examine advantages, disadvantages, and features of various cybersecurity programs, and determine which situations are best suited for each. | Formative: The teachers provide a classroom lecture on the advantages, disadvantages, and features of various cybersecurity programs, and determine which situations are best suited for each.  
● classroom rubric  
● class discussions | Small Group Activity: Students will examine advantages, disadvantages, and features of various cybersecurity programs, and determine which situations are best suited for each.  
● Peer Review  
● Visual Presentation | ELA: Collaborative presentation, synthesis of research, citing textual evidence and using valid and credible resources  
SS: Determine how these concepts contribute to business profit | Graphic Organizer  
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- Teach FBLA  
- Teach DECA  
- EdPuzzle videos, articles, and resources  
- EverFi additional teaching resources and activities  

Presentation Software  
- PowerPoint  
- Digital Video Production  
- Graphic Organizer  
- Create a presentation or illustrative document  
- Brochure  
- Storyboard or infographic  
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Graphic Design Platform  
- Canva  
- Flipgrid Video  
- Peer Review Handout  

Grammarly  
- MBA Research  
- iCEV  
- Teach FBLA  
- Teach DECA  
- EdPuzzle videos, articles, and resources  
- EverFi additional teaching resources and activities  

https://www.canva.com/  
https://auth.flipgrid.com/signup  
https://app.grammarly.com, can be accessed through clever.
| Students explain in their own words the importance of protecting personal information. | Formative: The teachers provide a classroom lecture on the importance of protecting personal information.  
- Protecting Personal Information digital lessons  
  - Everfi  
    - Digital Citizenship  
    - Ignition  
  - classroom rubric  
  - class discussions  
  - quizzes  
  - exit slips  
  - peer reviews | Small Group Activity: Students will explain in their own words the importance of protecting personal information.  
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SS: Cybersecurity affect on business management | MBA Research for Curriculum guides, lessons plan, and modules  
[https://www.mbaresearch.org/](https://www.mbaresearch.org/)  
Wheel spinner for interactive game  
[https://wheelofnames.com/](https://wheelofnames.com/)  
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[https://www.everfi.com/](https://www.everfi.com/)  
Everfi  
- Digital Citizenship  
- Ignition  
Graphic Organizer  
Digital Presentation Software  
Presentation Software  
Interactive Board

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69
<table>
<thead>
<tr>
<th>Activities</th>
<th>Summative:</th>
<th>Useful Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>• self-assessments</td>
<td>In small groups, the teacher observes</td>
<td>MBA Research</td>
</tr>
<tr>
<td>• listening/notes-taking guides</td>
<td>students discussing the importance of</td>
<td>iCEV</td>
</tr>
<tr>
<td>• interactive review games</td>
<td>protecting personal information.</td>
<td>Teach FBLA</td>
</tr>
<tr>
<td>• unit exam with multiple choices</td>
<td></td>
<td>Teach DECA</td>
</tr>
<tr>
<td>• fill-in-blank</td>
<td></td>
<td>EdPuzzle videos, articles, and resources</td>
</tr>
<tr>
<td>• short answer questions</td>
<td></td>
<td><a href="https://edpuzzle.com/discover">https://edpuzzle.com/discover</a></td>
</tr>
<tr>
<td>• unit project incorporating all learned skills and concepts</td>
<td></td>
<td>EverFi additional teaching resources and activities</td>
</tr>
<tr>
<td>• visual video production</td>
<td></td>
<td><a href="https://everfi.com/">https://everfi.com/</a></td>
</tr>
<tr>
<td>• written essay/report</td>
<td></td>
<td>MBA Research for Curriculum guides, lessons</td>
</tr>
</tbody>
</table>

Graphic Design Platform
https://www.canva.com/
Flipgrid Video
https://auth.flipgrid.com/sign up
Peer Review Handout
Grammarly
https://app.grammarly.com, can be accessed through clever.

Useful Links:
MBA Research
iCEV
Teach FBLA
Teach DECA
EdPuzzle videos, articles, and resources
https://edpuzzle.com/discover
EverFi additional teaching resources and activities
https://everfi.com/
MBA Research for Curriculum guides, lessons
Wheel spinner for interactive game
https://wheelofnames.com/

TweenTribune is a free, not-for-profit online newspaper. It is updated daily with stories from the Associated Press that are chosen based on relevancy to pre-adolescents.

Key Vocabulary

| mobile app scalability, reliability of mobile networks, reliability of mobile protocols, app maintenance, gridlock, offline reliability, speed, end result, mobile networks, mobile operating software systems, artificial intelligence, mobile networks, physical systems, software, apps for predictive modeling, self-driving cars, satellite networks, internet searching, cybersecurity programs, two-factor authentication, password requirements, geolocation requirements, antivirus programs, monitored internet access, protecting, personal information | plan, and modules
https://www.mbaresearch.org/

Wheel spinner for interactive game
https://wheelofnames.com/

https://www.tweentribune.com/

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Work-Based Learning, Simulated Work Experiences, and Experiential Learning:

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- Microsoft Office Specialist 2019/365 (MOS) (Two of the following areas REQUIRED: Excel Associate / Outlook Associate / PowerPoint Associate / Word Associate)

Unit 9 Title: Modeling and Simulation

Content Standards
14. Evaluate and explore possible improvements in different environments, situations, and simulations.
   14a. Use collected data to form, test, and refine a hypothesis regarding possible improvements in a business operation.

Unpacked Learning Objectives

Students know:
● Possible improvements in different environments, situations, and simulations.
● How to use collected data to form, test, and refine a hypothesis regarding possible improvements

Students are able to:
● Evaluate and explore possible improvements in different environments, situations, and simulations.
● Determine possible improvements in different environments, situations, and simulations.
● Examine data to form, test, and refine a hypothesis regarding possible improvements in a business operation.
● Analyze data to form, test, and refine a hypothesis regarding possible improvements in a business operation.

Students understand that:
● Mobile Application Developers use modeling and simulations to visualize and communicate needed improvements.
● Data is analyzed and collected for the sole purpose to improve the operation of a business.

<table>
<thead>
<tr>
<th>Unit Driving/Essential Question</th>
<th>What are the various possible improvements in different environments, situations, and simulations in a business operation?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exemplar High Quality Unit Task</td>
<td>Students are knowledgeable of the various possible improvements in different environments, situations, and simulations in a business operation.</td>
</tr>
</tbody>
</table>

Map of Student Learning by Learning Objective

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Students examine and investigate possibilities in</td>
<td>Formative: The teachers provide a classroom lecture</td>
<td>Small Group Activity: Students will examine and</td>
<td>ELA: Collaborative presentation, synthesis</td>
<td>Equipment List by CTE Cluster</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Link to Helpful Tech Tools</td>
</tr>
</tbody>
</table>

 Alabama State Department of Education, Career and Technical Education/Workforce Development, Plans of Instruction Updated as of Aug 2, 2022
<table>
<thead>
<tr>
<th>different environments, situations, and simulations.</th>
<th>on the different environments, situations, and simulations.</th>
<th>investigate possibilities in different environments, situations, and simulations.</th>
<th>of research, citing textual evidence and using valid and credible resources.</th>
</tr>
</thead>
<tbody>
<tr>
<td>● classroom rubric</td>
<td>● classroom rubric</td>
<td>● Peer Review</td>
<td>MATH: Students identify the probability that a certain outcome will result from various situations, and simulations.</td>
</tr>
<tr>
<td>● class discussions</td>
<td>● class discussions</td>
<td>● Visual Presentation</td>
<td></td>
</tr>
<tr>
<td>● quizzes</td>
<td>● quizzes</td>
<td>○ PowerPoint Presentation</td>
<td></td>
</tr>
<tr>
<td>● exit slips</td>
<td>● exit slips</td>
<td>○ Digital Video Production</td>
<td></td>
</tr>
<tr>
<td>● peer reviews</td>
<td>● peer reviews</td>
<td>● Graphic Organizer</td>
<td></td>
</tr>
<tr>
<td>● self-assessments</td>
<td>● self-assessments</td>
<td>● Create a presentation or illustrative document</td>
<td></td>
</tr>
<tr>
<td>● listening/notes-taking guides</td>
<td>● listening/notes-taking guides</td>
<td>● Brochure</td>
<td></td>
</tr>
<tr>
<td>● interactive review games</td>
<td>● interactive review games</td>
<td>● Storyboard or infographic</td>
<td></td>
</tr>
</tbody>
</table>

Summative: In small groups, the teacher observes students discuss the possibilities in different environments, situations, and simulations.

- unit exam with multiple choices
- fill-in-blank
- short answer questions
- unit project incorporating all learned skills and concepts
- visual video production
- written essay/report

Useful Links:
- EdPuzzle videos, articles, and resources
- MBA Research
- iCEV
- Teach FBLA
- Teach DECA

Digital Presentation Software
- Presentation Software
- Interactive Board
- Graphic Design Platform [Link]
- Flipgrid Video [Link]
- Peer Review Handout [Link]
- Grammarly [Link], can be accessed through clever.

og/free-graphic-organizer-templates
|          | Students use collected data to form, test, and refine a hypothesis regarding possible improvements in a business operation. | Formative: The teachers provide a classroom lecture on collecting data to form, test, and refine a hypothesis regarding possible improvements in a business operation.  
- classroom rubric  
- class discussions  
- quizzes | Small Group Activity: Students will use collected data to form, test, and refine a hypothesis regarding possible improvements in a business operation.  
- Create a simulation project  
- Peer Review  
- Visual Presentation | SCI: Students will research each step of the scientific method and how this method is used in business research.  
ELA: Collaborative presentation, synthesis of research, citing textual evidence | Graphic Organizer  
https://www.hmhco.com/blog/free-graphic-organizer-templates  
Digital Presentation Software  
Presentation Software |
|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|
| https://edpuzzle.com/discover | EverFi additional teaching resources and activities  
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<th>Peer Reviews</th>
<th>Self-Assessments</th>
<th>Listening/Notes-Taking Guides</th>
<th>Interactive Review Games</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summative: In small groups, the teacher observes students discussing the collecting of data to form, test, and refine a hypothesis regarding possible improvements in a business operation.</td>
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</tr>
<tr>
<td>- Unit exam with multiple choices</td>
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<tr>
<td>- Fill-in-blank</td>
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<tr>
<td>- Short answer questions</td>
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</tr>
<tr>
<td>- Simulation project</td>
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<tr>
<td>○ PowerPoint Presentation</td>
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<td></td>
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<tr>
<td>○ Digital Video Production</td>
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<tr>
<td>● Graphic Organizer</td>
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<tr>
<td>● Create a presentation or illustrative document</td>
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<tr>
<td>● Brochure</td>
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<td>● Storyboard or infographic</td>
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<tr>
<td>● Create a written essay or paragraph</td>
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<tr>
<td>Evidence and using valid and credible resources</td>
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<tr>
<td>SS: Determine how these concepts contribute to business profit</td>
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<tr>
<td>MATH: Students identify the probability that a certain outcome will result.</td>
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</tr>
</tbody>
</table>

Interactive Board

Graphic Design Platform
https://www.canva.com/

Flipgrid Video
https://auth.flipgrid.com/signup

Peer Review Handout

Grammarly
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Steps of the Scientific Method
https://www.sciencebuddies.org/science-fair-projects/science-fair/steps-of-the-scientific-method#:~:text=The%20six%20steps%20of%20the%20scientific%20method%20include%3A%201), asking, and drawing conclusions, and 2 (the method%20includes%3A%201)
**Key Vocabulary**

product development, business operations, customer service, flawed modeling/debugging, science lab, robotics lab, manufacturing, space exploration, collected data, hypothesis, business operation

**Work-Based Learning, Simulated Work Experiences, and Experiential Learning:**

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| Microsoft Office Specialist 2019/365 (MOS) (Two of the following areas REQUIRED: Excel Associate / Outlook Associate / PowerPoint Associate / Word Associate) |
Unit 10 Title: Human-Computer Partnerships

Content Standards

15. Collect feedback from a wide variety of users and systematically design and develop mobile programs to match entertainment preferences for different target audiences.

16. Research and share information on apps that use both humans and machines for problem solving.
   16a. Select an app that uses both human and machine input to solve problems and decompose the app’s problem-solving process to determine which part of the problem is solved by humans and which is dependent on the machine.

Unpacked Learning Objectives

Students know:
- How to collect feedback from a wide variety of users and systematically design and develop mobile programs to match entertainment preferences for different target audiences.
- Information on apps that use both humans and machines for problem solving.
- How to use an app that uses both human and machine input to solve problems and decompose the app’s problem-solving process to determine which part of the problem is solved by humans and which is dependent on the machine.

Students are able to:
- Collect feedback from a wide variety of users and systematically design and develop mobile programs to match entertainment preferences for different target audiences.
- Explain information on apps that use both humans and machines for problem solving.
- Summarize information on apps that use both humans and machines for problem solving.
- Use an app that uses both human and machine input to solve problems and decompose the app’s problem-solving process to determine which part of the problem is solved by humans and which is dependent on the machine.
- Select an app that uses both human and machine input to solve problems and decompose the app's problem-solving process to determine which part of the problem is solved by humans and which is dependent on the machine.

Students understand that:
- Data collection is used to collect feedback from a wide variety of users.
- Obtained information from research is used by both humans and machines for problem solving.
- There are apps that use both human and machine input to solve problems.
<table>
<thead>
<tr>
<th>Unit Driving/Essential Question</th>
<th>Which types of apps are used by both human and machine input to solve problems?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exemplar High Quality Unit Task</td>
<td>Students are able to identify and use various apps that are used by both humans and machines to solve problems.</td>
</tr>
</tbody>
</table>
### Map of Student Learning by Learning Objective

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<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Students gather feedback from a wide variety of users and systematically design and develop mobile programs to match entertainment preferences for different target audiences.</td>
<td>Formative: The teachers provide a classroom lecture on gathering feedback from a wide variety of users and systematically design and develop mobile programs to match entertainment preferences for different target audiences.</td>
<td>Small Group Activity: Students will gather feedback from a wide variety of users and systematically design and develop mobile programs to match entertainment preferences for different target audiences.</td>
<td>ELA: Writing for a specific purpose and audience, design surveys (informative writing)</td>
<td>Graphic Organizer <a href="https://www.hmhco.com/blog/free-graphic-organizer-templates">https://www.hmhco.com/blog/free-graphic-organizer-templates</a></td>
</tr>
<tr>
<td></td>
<td>● classroom rubric</td>
<td>● Simulation Project</td>
<td>SS: Human behavior and business marketing</td>
<td>Digital Presentation Software</td>
</tr>
<tr>
<td></td>
<td>● class discussions</td>
<td>● Hands-on Project</td>
<td></td>
<td>Presentation Software</td>
</tr>
<tr>
<td></td>
<td>● quizzes</td>
<td>● Peer Review</td>
<td></td>
<td>Interactive Board</td>
</tr>
<tr>
<td></td>
<td>● exit slips</td>
<td>● Visual Presentation</td>
<td></td>
<td>Graphic Design Platform <a href="https://www.canva.com/">https://www.canva.com/</a></td>
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<td>Flipgrid Video <a href="https://auth.flipgrid.com/signup">https://auth.flipgrid.com/signup</a></td>
</tr>
<tr>
<td></td>
<td>● listening/notes-taking guides</td>
<td>● Graphic Organizer</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>● interactive review games</td>
<td>● Create a presentation or illustrative document</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summative: In small groups, the teacher observes students discuss the gathering of feedback from a wide variety of users and</td>
<td></td>
<td>● Brochure</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>● Storyboard or infographic</td>
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</tr>
</tbody>
</table>

- **Learning Activity Checklist**
- **Link to Differentiation Examples**
- **Link to Helpful Tech Tools**
<table>
<thead>
<tr>
<th>systematically design and develop mobile programs to match entertainment preferences for different target audiences.</th>
<th>Create a written essay or paragraph</th>
</tr>
</thead>
<tbody>
<tr>
<td>● unit exam with multiple choices</td>
<td>● fill-in-blank</td>
</tr>
<tr>
<td>● short answer questions</td>
<td>● simulation project</td>
</tr>
</tbody>
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Wheel spinner for interactive game [https://wheelofnames.com](https://wheelofnames.com)

[TweenTribune](https://www.tweentribune.com) is a free, not-for-profit online resource.
| Students examine and present information on apps that use both humans and machines for problem solving. | Formative: The teachers provide a classroom lecture on examining and presenting information on apps that use both humans and machines for problem solving.  
- classroom rubric  
- class discussions  
- quizzes  
- exit slips  
- peer reviews  
- self-assessments  
- listening/notes-taking guides  
- interactive review games | Small Group Activity: Students will examine and present information on apps that use both humans and machines for problem solving.  
- Simulation Project  
- Hands-on Project  
- Peer Review  
- Visual Presentation  
  - PowerPoint Presentation  
  - Digital Video Production  
- Graphic Organizer  
- Create a presentation or illustrative document  
- Brochure  
- Storyboard or infographic  
- Create a written essay or paragraph | ELA: Collaborative presentation, research synthesis, informative writing  
MATH: Students analyze the programming behind the calculator as an app.  
- unit exam with multiple choices  
- fill-in-blank  
- short answer questions  
- simulation project |

newspaper. It is updated daily with stories from the Associated Press that are chosen based on relevancy to pre-adolescents.
| Students identify apps that use both human and machine input to solve | Formative: The teachers provide a classroom lecture on identifying apps that use both human and machine input to solve | Small Group Activity: Students will identify apps that use both human and machine input to solve | ELA: Collaborative presentation, research synthesis, informative | Useful Links: MBA Research, iCEV, Teach FBLA, Teach DECA, EdPuzzle videos, articles, and resources https://edpuzzle.com/discover, EverFi additional teaching resources and activities https://everfi.com/ MBA Research for Curriculum guides, lessons plan, and modules https://www.mbaresearch.org/ Wheel spinner for interactive game https://wheelofnames.com/ https://www.tweentribune.com/ TweenTribune is a free, not-for-profit online newspaper. It is updated daily with stories from the Associated Press that are chosen based on relevancy to pre-adolescents. | Graphic Organizer https://www.hmhco.com/bl |
problems and decompose the app’s problem-solving process to determine which part of the problem is solved by humans and which is dependent on the machine.

- classroom rubric
- class discussions
- quizzes
- exit slips
- peer reviews
- self-assessments
- listening/notes-taking guides
- interactive review games

Summative: In small groups, the teacher observes students identify apps that use both human and machine input to solve problems and decompose the app’s problem-solving process to determine which part of the problem is solved by humans and which is dependent on the machine.

- unit exam with multiple choices
- fill-in-blank
- short answer questions
- Simulation Project

MATH: Students analyze the programming behind the calculator as an app.

- Simulation Project
- Hands-on Project
- Peer Review
- Visual Presentation
  - PowerPoint Presentation
  - Digital Video Production
- Create a presentation or illustrative document
- Brochure
- Storyboard
- Create a written essay or paragraph

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| https://www.tweentribune.com/ |  |
### Key Vocabulary

systematically design, games, utilities, mobile applications, problem solving, facial recognition, personal virtual assistants, GPS maps, social media feeds

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- Microsoft Office Specialist 2019/365 (MOS) (Two of the following areas REQUIRED: Excel Associate / Outlook Associate / PowerPoint Associate / Word Associate)
Unit 11 Title: Design Thinking

Content Standards
17. Use an iterative design process of prototyping, testing, analyzing, and refining to design and develop a mobile application.

Unpacked Learning Objectives

Students know:
● The iterative design process of prototyping, testing, analyzing, and refining to design and develop a mobile application.

Students are able to:
● Describe the prototyping, testing, analyzing, and refining to design and develop a mobile application.
● Summarize the process of prototyping, testing, analyzing, and refining to design and develop a mobile application.

Students understand that:
● Mobile Application Developers has an iterative design process that is used for the design and development of mobile applications.

<table>
<thead>
<tr>
<th>Unit Driving/Essential Question</th>
<th>What is the iterative design process needed to design and develop a mobile application?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exemplar High Quality Unit Task</td>
<td>Students are select and describe the iterative design process needed to design and develop a mobile app</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>--------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Students apply an iterative design process of prototyping, testing, analyzing, and refining to design and develop a mobile application. | Formative: The teachers provide a classroom lecture and demonstrate how to use an iterative design process of prototyping, testing, analyzing, and refining to design and develop a mobile application.  
● classroom rubric  
● class discussions  
● quizzes  
● exit slips  
● peer reviews  
● self-assessments  
● listening/note-taking guides  
● interactive review games | Small Group Activity: Students will apply an iterative design process of prototyping, testing, analyzing, and refining to design and develop a mobile application.  
● Simulation Project  
● Hands-on Project  
● Peer Review  
● Visual Presentation  
  ○ PowerPoint Presentation  
  ○ Digital Video Production  
● Create a presentation or illustrative document  
● Brochure  
● Storyboard  
● Create a written essay or paragraph | SCI: Students will start the iterative design process by using 8 steps to implement design thinking in the classroom. Use the follow steps:  
1. Generate a list of problems students want to solve, which can be big or small, design based or issue based.  
2. Prepare materials to build and prototype with.  
3. Pair students up and have them interview each other about the problem. Asking questions and listening to answers is one of the most | Digital Presentation Software  
Presentation Software  
Interactive Board  
Graphic Design Platform [https://www.canva.com/](https://www.canva.com/)  
Flipgrid Video [https://auth.flipgrid.com/sign up](https://auth.flipgrid.com/sign up)  
Grammarly
<table>
<thead>
<tr>
<th>Design and develop a mobile application.</th>
</tr>
</thead>
<tbody>
<tr>
<td>● unit exam with multiple choices</td>
</tr>
<tr>
<td>● fill-in-blank</td>
</tr>
<tr>
<td>● short answer questions</td>
</tr>
<tr>
<td>● Simulation Project</td>
</tr>
<tr>
<td>● Hands-on Project</td>
</tr>
</tbody>
</table>

important parts of the process. Students might not interview each other at this point -- they might be paired up with the people affected by the problem.

4. Give students time (but not too much time) to come up with some solutions to the problem, which they will sketch or plan out on paper.

5. Pair up again to share ideas, explain, question, and take notes.

6. Give students time to design and refine the prototype they chose with/for their partner.

7. Pair up one more time for feedback.

8. Make time for the whole class or individual reflection.

**ELA:** Informative writing, process writing and editing

**SS:** Design apps to maximize business profit and minimize cost.

**Useful Links:**
- [https://app.grammarly.com](https://app.grammarly.com), can be accessed through clever.
- MBA Research
- iCEV
- Teach FBLA
- Teach DECA
- EdPuzzle videos, articles, and resources [https://edpuzzle.com/discover](https://edpuzzle.com/discover)
- EverFi additional teaching resources and activities [https://everfi.com](https://everfi.com)
- MBA Research for Curriculum guides, lessons plan, and modules [https://www.mbaresearch.org](https://www.mbaresearch.org)
- Wheel spinner for interactive game [https://wheelofnames.com](https://wheelofnames.com)
- TweenTribune is a free, not-for-profit online newspaper. It is updated daily with stories from the Associated Press that are
Key Vocabulary

iterative design process, prototyping, testing, analyzing, refining, mobile application

Work-Based Learning, Simulated Work Experiences, and Experiential Learning:

Guest Speakers or Field Trip, CTSO Competitive Events

CTSO Connection:

FBLA (Public Service Announcement, Digital Video Production, Broadcast Journalism, Mobile Application Development)
DECA (Business Law and Ethics Team Decision Making)

Certification/Credential Connection:

Adobe Certified Associate (ACA) – Photoshop / Dreamweaver / Premier Pro / InDesign / Illustrator
ASK Institute – Concepts of Entrepreneurship and Management / Fundamental Business Concepts
Certiport- Entrepreneurship and Small Business (must hold concentrator status)

chosen based on relevancy to pre-adolescents.

8 Steps to Implementing Design Thinking in Your Classroom
https://www.commonsense.org/education/articles/8-steps-to-implementing-design-thinking-in-your-classroom
Unit 12 Title: Abstraction

Content Standards
18. Decompose problems into parts, then filter the important information to create a new sequence to solve the problem.

19. Explain how code or other systems behind the user interface make apps look a certain way, even though the code is not visible to the user.
   19a. Determine the changes in user interface when modifying an app’s code.

Unpacked Learning Objectives

Students know:
● How to categorize problems into parts, then filter the important information to create a new sequence to solve the problem.
● How to sort problems into parts, then filter the important information to create a new sequence to solve the problem.
● How code or other systems behind the user interface make apps look a certain way, even though the code is not visible to the user.
● How to identify the changes in user interface when modifying an app.

Students are able to:
● Describe the process to sort problems into parts, then filter the important information to create a new sequence to solve the problem.
● Demonstrate the steps to categorize problems into parts, then filter the important information to create a new sequence to solve the problem.
● Explain how code or other systems behind the user interface make apps look a certain way, even though the code is not visible to the user.
● Describe how code or other systems behind the user interface make apps look a certain way, even though the code is not visible to the user.
● Identify the changes in user interface when modifying an app.
● Determine the changes in user interface when modifying an app’s

Students understand that:
● Mobile Application Development consists of filtering important information for the purpose of solving problems.
● Mobile Application Developers use code to make apps.
● There is a change in user interface when an app has been modified.
| Unit Driving/Essential Question | What is the process needed to sort problems into parts?  
What is the process needed to filter the important information to create a new sequence to solve the problem?  
What are the changes in user interface when modifying an app’s code?  
What codes or systems within an user interface make apps look a certain way, even though the code is not visible to the user? |
<table>
<thead>
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<tbody>
<tr>
<td>Exemplar High Quality Unit Task</td>
<td>Students are able to sort problems into parts by filtering the important information needed to create a new sequence to solve the problem.</td>
</tr>
</tbody>
</table>
### Map of Student Learning by Learning Objective

|----------------------------------|--------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------------|---------------------------------|
| Students sort problems into parts, then filter the important information to create a new sequence to solve the problem. | Formative: The teachers provide a classroom lecture and demonstrate how to sort problems into parts, then filter the important information to create a new sequence to solve the problem.  
- classroom rubric  
- class discussions  
- quizzes  
- exit slips  
- peer reviews  
- self-assessments  
- listening/notes-taking guides  
- interactive review games | Small Group Activity: Students will sort problems into parts, then filter the important information to create a new sequence to solve the problem.  
- Simulation Project  
- Hands-on Project  
- Peer Review  
- Visual Presentation  
  - PowerPoint Presentation  
  - Digital Video Production  
- Create a presentation or illustrative document  
- Brochure  
- Storyboard  
- Create a written essay or paragraph | ELA: Informative writing, summarizing main ideas and most important information  
MATH: Students could begin this by breaking up mathematical word problems into parts and sorting through the necessary information to solve. | Digital Presentation Software  
Presentation Software  
Interactive Board  
Graphic Design Platform https://www.canva.com/  
Flipgrid Video https://auth.flipgrid.com/signup  
Grammarly |

**Equipment List by CTE Cluster**

**Link to Helpful Tech Tools**
create a new sequence to solve the problem.
- unit exam with multiple choices
- fill-in-blank
- short answer questions
- Simulation Project
- Hands-on Project

https://app.grammarly.com, can be accessed through clever.

Useful Links:
- MBA Research
- iCEV
- Teach FBLA
- Teach DECA

EdPuzzle videos, articles, and resources
https://edpuzzle.com/discover

EverFi additional teaching resources and activities
https://everfi.com/

MBA Research for Curriculum guides, lessons plan, and modules
https://www.mbaresreach.org/

Wheel spinner for interactive game
https://wheelofnames.com/

https://www.tweentribune.com/
TweenTribune is a free, not-for-profit online newspaper. It is updated daily with stories from the Associated Press that are
| Students will explain in their own words how code or other systems behind the user interface make apps look a certain way, even though the code is not visible to the user. | Formative: The teachers provide a classroom lecture and demonstrate how to sort problems into parts, then filter the important information to create a new sequence to solve the problem.  
- classroom rubric  
- class discussions  
- quizzes  
- exit slips  
- peer reviews  
- self-assessments  
- listening/notes-taking guides  
- interactive review games  
Summative: In small groups, the teacher observes students sort problems into parts, then filters the important information to create a new sequence to solve the problem.  
- unit exam with multiple choices  
- fill-in-blank  
- short answer questions  
- Simulation Project  
- Hands-on Project | Small Group Activity: Students will explain in their own words how code or other systems behind the user interface make apps look a certain way, even though the code is not visible to the user.  
- Simulation Project  
- Hands-on Project  
- Peer Review  
- Visual Presentation  
  - PowerPoint Presentation  
  - Digital Video Production  
- Create a presentation or illustrative document  
- Brochure  
- Storyboard  
- Create a written essay or paragraph | ELA: Informative writing, summarize and synthesis of information  
- Digital Presentation Software  
- Presentation Software  
- Interactive Board  
- Graphic Design Platform [https://www.canva.com](https://www.canva.com/)  
- Flipgrid Video [https://auth.flipgrid.com/signup](https://auth.flipgrid.com/signup)  
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Useful Links:  
- MBA Research  
- iCEV  
- Teach FBLA  
- Teach DECA  
- EdPuzzle videos, articles, and resources |
### Students identify the changes in user interface when modifying an app.

**Formative:** The teachers provide a classroom lecture on identifying the changes in user interface when modifying an app.
- Classroom rubric
- Class discussions
- Quizzes
- Exit slips
- Peer reviews
- Self-assessments

### Small Group Activity:
Students will explain in their own words the changes in user interface when modifying an app.
- Simulation Project
- Hands-on Project
- Peer Review
- Visual Presentation
  - PowerPoint Presentation

### ELA: Informative Writing, Summarize and Synthesis of Information, Comprehending Informational Text
- Digital Presentation Software
- Presentation Software
- Interactive Board
- Graphic Design Platform

### SS: Determine how those changes affect customer satisfaction.
- TweenTribune is a free, not-for-profit online newspaper. It is updated daily with stories from the Associated Press that are chosen based on relevancy to pre-adolescents.

- EverFi additional teaching resources and activities
  - [https://everfi.com/](https://everfi.com/)

- MBA Research for Curriculum guides, lessons plan, and modules
  - [https://www.mbaresearch.org/](https://www.mbaresearch.org/)

- Wheel spinner for interactive game
  - [https://wheelofnames.com/](https://wheelofnames.com/)

- TweenTribune
  - [https://www.tweentribune.com/](https://www.tweentribune.com/)
- listening/notes-taking guides
- interactive review games

Summative: In small groups, the teacher observes students identify the changes in user interface when modifying an app.
- unit exam with multiple choices
- fill-in-blank
- short answer questions
- Simulation Project
- Hands-on Project

- Digital Video Production
  - Create a presentation or illustrative document
  - Brochure
  - Storyboard
  - Create a written essay or paragraph

Flipgrid Video
https://auth.flipgrid.com/signup

Peer Review Handout

Grammarly
https://app.grammarly.com, can be accessed through clever.

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### Key Vocabulary
- filter, code, user interface, user interface

### Work-Based Learning, Simulated Work Experiences, and Experiential Learning:
- Guest Speakers or Field Trip, CTSO Competitive Events

### CTSO Connection:
- FBLA (Public Service Announcement, Digital Video Production, Broadcast Journalism, Mobile Application Development)
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### Certification/Credential Connection:
- Adobe Certified Associate (ACA) – Photoshop / Dreamweaver / Premier Pro / InDesign / Illustrator
- ASK Institute – Concepts of Entrepreneurship and Management / Fundamental Business Concepts
| Certiport - Entrepreneurship and Small Business (must hold concentrator status) |
| IC3 Global Standard 6 (or higher), Microsoft Office Expert 2019/365 - Access / Excel / Word |
| Microsoft Office Specialist 2019/365 (MOS) (Two of the following areas REQUIRED: Excel Associate / Outlook Associate / PowerPoint Associate / Word Associate) |
Unit 13 Title: Algorithms

Content Standards
20. Plan algorithms when developing the app functions using pseudocode, then compare and convert it to programming language needed for the app design environment being used.

21. Compare and contrast sequential statements, conditional statements, and and/or iterations.
   21a. Determine the trade-offs that exist with using one control structure over another.
   21b. Determine which control structure is best for programming different parts of an app.

22. Determine when a solution requires decisions to be made among alternatives.

23. Adapt existing algorithms to solve computational problems when developing an app.
   23a. Research multiple algorithms for corrections in developing an app.

Unpacked Learning Objectives

Students know:
- Algorithms when developing the app functions using pseudocode, then compare and convert it to programming language needed for the app design environment being used.
- The sequential statements, conditional statements, and and/or iterations.
- The trade-offs that exist with using one control structure over another.
- Which control structure is best for programming different parts of an app.
- When a solution requires decisions to be made among alternatives.
- Algorithms to solve computational problems when developing an app.
- Multiple algorithms for corrections in developing an app.

Students are able to:
- Plan algorithms when developing the app functions using pseudocode, then compare and convert it to programming language needed for the app design environment being used.
- Create algorithms when developing the app functions using pseudocode, then compare and convert it to programming language needed for the app design environment being used.
- Develop algorithms when developing the app functions using pseudocode, then compare and convert it to programming language needed for the app design environment being used.
- Summarize sequential statements, conditional statements, and/or iterations.
- Describe sequential statements, conditional statements, and and/or iterations.
Discuss sequential statements, conditional statements, and and/or iterations.
Explain the trade-offs that exist with using one control structure over another.
Describe the trade-offs that exist with using one control structure over another.
Summarize the trade-offs that exist with using one control structure over another.
Select which control structure is best for programming different parts of an app.
Determine which control structure is best for programming different parts of an app.
Identify which control structure is best for programming different parts of an app.
Determine when a solution requires decisions to be made among alternatives.
Decide when a solution requires decisions to be made among alternatives.
Choose when a solution requires decisions to be made among alternatives.
Adapt existing algorithms to solve computational problems when developing an app.
Apply existing algorithms to solve computational problems when developing an app.
Use existing algorithms to solve computational problems when developing an app.
Describe multiple algorithms for corrections in developing an app.
Examine multiple algorithms for corrections in developing an app.

Students understand that:
- Mobile Application Developers establish and set rules when developing app functions.
- Mobile Application Development operates by a set of established rules.
- There are trade-offs that exist that mobile app developers must determine when using a control structure.
- A Mobile Application Developer determines the control structure that is best for programming different parts of an app.
- A Mobile Application Developer determines when a solution requires decisions to be made among alternatives.
- Mobile Application Developers follow a set of rules to solve computational problems when developing an app.
- Mobile Application Developers examine rules and procedures for corrections in developing an app.

<table>
<thead>
<tr>
<th>Unit Driving/Essential Question</th>
<th>What are the set of rules Mobile Application Developers establish when developing app functions?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exemplar High Quality Unit Task</td>
<td>Students understand the set rules Mobile Application Developers establishes when developing app functions.</td>
</tr>
</tbody>
</table>

Alabama State Department of Education, Career and Technical Education/Workforce Development, Plans of Instruction
Updated as of Aug 2, 2022
# Map of Student Learning by Learning Objective

|----------------------------------|--------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------|
| Students apply algorithms when developing the app functions using pseudocode, then compare and convert it to programming language needed for the app design environment being used. | Formative: The teachers provide a classroom lecture on applying algorithms when developing the app functions using pseudocode, then compare and convert it to programming language needed for the app design environment being used. ● classroom rubric ● class discussions ● quizzes ● exit slips ● peer reviews ● self-assessments ● listening/notes-taking guides ● interactive review games | Group Activity: Students are separated in small groups and given the task to create and present their findings via a created PowerPoint presentation. video, and/or broadcast. ● Give a presentation ● Create a poster or illustration document ● Create a brochure ● Create a storyboard or infographic ● Create a video or audio ● Create a broadcast ● Create a written essay or paragraph | SCI: Students will research pseudocode and answer the following questions? 1. Why use pseudocode? 2. What are the main constructs of pseudocode? 3. What are the rules of writing pseudocode?  | Digital Presentation Software  
Presentation Software  
Interactive Board  
Flipgrid Video [https://auth.flipgrid.com/sign up](https://auth.flipgrid.com/sign up)  
Graphic Design Platform [https://www.canva.com/](https://www.canva.com/)  
Graphic Organizer Infographic Comparing [https://www.hmhco.com/bl](https://www.hmhco.com/bl) |
| Summative: In small groups, the teacher observes students identify the changes in user interface when modifying an app. | Learning Activity Checklist [Link to Differentiation Examples](#) | ELA: Informative writing, summarize and synthesis of information |  |  |
| | | SS: Analyze how different app designs can affect business profit |  |  |
| | | MATH: Utilize Boolean Algebra when creating the code. |  |  |
- unit exam with multiple choices
- fill-in-blank
- short answer questions
- Simulation Project
- Hands-on Project

Useful Links:
- MBA Research
- iCEV
- Teach FBLA
- Teach DECA

EdPuzzle videos, articles, and resources
https://edpuzzle.com/discover

EverFi additional teaching resources and activities
https://everfi.com/

MBA Research for Curriculum guides, lessons plan, and modules
https://www.mbaresearch.org/

Wheel spinner for interactive game
https://wheelofnames.com/

Pseudocode 101: An Introduction to Writing Good Pseudocode
https://towardsdatascience.com/pseudocode-101-an-introduction-to-writing-good-pseudocode-1331cb855be7
<table>
<thead>
<tr>
<th>Students compare and contrast sequential statements, conditional statements, and and/or iterations.</th>
<th>The teachers provide a classroom lecture on comparing and contrasting sequential statements, conditional statements, and and/or iterations.</th>
<th>Group Activity: Students are separated in small groups and given the task to create and present their findings via a created PowerPoint presentation. video, and/or broadcast.</th>
<th>ELA: Use a Venn diagram to compare and contrast, collaborative presentation, use audio and visuals to enhance presentation</th>
<th>Digital Presentation Software  Presentation Software Interactive Board  Flipgrid Video <a href="https://auth.flipgrid.com/signup">https://auth.flipgrid.com/signup</a>  Graphic Design Platform <a href="https://www.canva.com/">https://www.canva.com/</a>  Peer Review Handout <a href="https://www.wssd.org/cms/lib/PA01001072/Centricity/Domain/257/Peer%20Evaluation%20of%20a%20Group%20Presentation.pdf">https://www.wssd.org/cms/lib/PA01001072/Centricity/Domain/257/Peer%20Evaluation%20of%20a%20Group%20Presentation.pdf</a>  Graphic Organizer Infographic Comparing <a href="https://www.hmhco.com/blog/free-graphic-organizer-templates">https://www.hmhco.com/blog/free-graphic-organizer-templates</a>  Useful Links: MBA Research  iCEV  Teach FBLA  Teach DECA  EdPuzzle videos, articles, and resources <a href="https://edpuzzle.com/discover">https://edpuzzle.com/discover</a></th>
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<td>● classroom rubric  ● class discussions  ● quizzes  ● exit slips  ● peer reviews  ● self-assessments  ● listening/notes-taking guides  ● interactive review games</td>
<td>● classroom lecture on comparing and contrasting sequential statements, conditional statements, and and/or iterations.</td>
<td>● Give a presentation  ● Create a poster or illustration document  ● Create a brochure  ● Create a storyboard or infographic  ● Create a video or audio  ● Create a broadcast  ● Create a written essay or paragraph</td>
<td>● SS: Analyze how different app designs can affect business profit  ● MATH: Utilize Boolean Algebra when creating the code.</td>
<td></td>
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<tr>
<td></td>
<td>Students determine the trade-offs that exist with using one control structure over another.</td>
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<td>The teachers provide a classroom lecture on determining the trade-offs that exist with using one control structure over another.</td>
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<tr>
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<td>Group Activity: Students are separated in small groups and given the task to create and present their findings via a created PowerPoint presentation. video, and/or broadcast.</td>
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<td>● Give a presentation</td>
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<td>● Create a poster or illustration document</td>
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<tr>
<td></td>
<td>● Create a brochure</td>
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<tr>
<td>ELA: Informative writing, comprehending informative text, research synthesis</td>
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</tbody>
</table>

|               | Digital Presentation Software  |
|               | Presentation Software  |
|               | Interactive Board  |
|               | Flipgrid Video  |
|               | Graphic Design Platform  |

EverFi additional teaching resources and activities  
https://everfi.com/  
MBA Research for Curriculum guides, lessons plan, and modules  
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TweenTribune is a free, not-for-profit online newspaper. It is updated daily with stories from the Associated Press that are chosen based on relevancy to pre-adolescents.
<table>
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<th>Listening/Notes-taking Guides</th>
<th>Create a Storyboard or Infographic</th>
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</thead>
<tbody>
<tr>
<td>Interactive Review Games</td>
<td>Create a Video or Audio</td>
</tr>
<tr>
<td>Summative:</td>
<td>Create a Broadcast</td>
</tr>
<tr>
<td>In small groups, the teacher observes students determine the trade-offs that exist with using one control structure over another.</td>
<td>Create a Written Essay or Paragraph</td>
</tr>
<tr>
<td>Unit Exam with Multiple Choices</td>
<td>Peer Review Handout</td>
</tr>
<tr>
<td>Short Answer Questions</td>
<td>Graphic Organizer Infographic Comparing</td>
</tr>
<tr>
<td>Simulation Project</td>
<td><a href="https://www.hmhco.com/blog/free-graphic-organizer-templates">https://www.hmhco.com/blog/free-graphic-organizer-templates</a></td>
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Useful Links:
- MBA Research
- iCEV
- Teach FBLA
- Teach DECA

EdPuzzle videos, articles, and resources
- https://edpuzzle.com/discover

EverFi additional teaching resources and activities
- https://everfi.com/

MBA Research for Curriculum guides, lessons plan, and modules
- https://www.mbaresearch.org/
| Students determine which control structure is best for programming different parts of an app. | The teachers provide a classroom lecture on determining which control structure is best for programming different parts of an app.  
- classroom rubric  
- class discussions  
- quizzes  
- exit slips  
- peer reviews  
- self-assessments  
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- Graphic Organizer |
- unit exam with multiple choices
- fill-in-blank
- short answer questions
- Simulation Project

Infographic Comparing
https://www.hmhco.com/blog/free-graphic-organizer-templates

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https://www.tweentribune.com/
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| Students determine when a solution requires decisions to be made among alternatives. | The teachers provide a classroom lecture on determining when a solution requires decisions to be made among alternatives.  
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- Create a video or audio  
- Create a broadcast  
- Create a written essay or paragraph | ELA: Informative writing, comprehending informative text, research synthesis  
- Digital Presentation Software  
- Presentation Software  
- Interactive Board  
- Flipgrid Video  
  https://auth.flipgrid.com/signup  
- Graphic Design Platform  
  https://www.canva.com/  
- Peer Review Handout  
- Graphic Organizer  
  Infographic Comparing  
  https://www.hmhco.com/blog/free-graphic-organizer-templates  
- Useful Links:  
  MBA Research  
  iCEV  
  Teach FBLA  
  Teach DECA | chosen based on relevancy to pre-adolescents. |
| Students apply existing algorithms to solve computational problems when developing an app. | The teachers provide a classroom lecture on applying existing algorithms to solve computational problems when developing an app.  
- classroom rubric  
- class discussions  
- quizzes  
- exit slips  
- peer reviews  
- self-assessments | Group Activity: Students are separated in small groups and given the task to create and present their findings via a created PowerPoint presentation, video, and/or broadcast.  
- Give a presentation  
- Create a poster or illustration document  
- Create a brochure | ELA: Informative writing, comprehending informative text, research synthesis  
Digital Presentation Software  
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<tbody>
<tr>
<td>● listening/notes-taking guides</td>
<td>● Create a storyboard or infographic</td>
</tr>
<tr>
<td>● interactive review games</td>
<td>● Create a video or audio</td>
</tr>
<tr>
<td>Summative: In small groups, the teacher observes students apply existing algorithms to solve computational problems when developing an app.</td>
<td>● Create a broadcast</td>
</tr>
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<td>● unit exam with multiple choices</td>
<td>● Create a written essay or paragraph</td>
</tr>
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<td>● fill-in-blank</td>
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<tr>
<td>● short answer questions</td>
<td>Peer Review Handout</td>
</tr>
</tbody>
</table>

**Graphic Organizer**

Infographic Comparing

**https://www.hmhco.com/blog/free-graphic-organizer-templates**

**Useful Links:**

- MBA Research
- iCEV
- Teach FBLA
- Teach DECA

EdPuzzle videos, articles, and resources

**https://edpuzzle.com/discover**

EverFi additional teaching resources and activities

**https://everfi.com/**

MBA Research for Curriculum guides, lessons plan, and modules

**https://www.mbaresearch.org/**
| Students examine multiple algorithms for corrections in developing an app. | The teachers provide a classroom lecture on examining multiple algorithms for corrections in developing an app.  
  - classroom rubric  
  - class discussions  
  - quizzes  
  - exit slips  
  - peer reviews  
  - self-assessments  
  - listening/notes-taking guides  
  - interactive review games  
  Summative: In small groups, the teacher observes students examine multiple algorithms for corrections in developing an app.  
  - unit exam with multiple choices  
  - fill-in-blank | Group Activity: Students are separated in small groups and given the task to create and present their findings via a created PowerPoint presentation. video, and/or broadcast.  
  - Give a presentation  
  - Create a poster or illustration document  
  - Create a brochure  
  - Create a storyboard or infographic  
  - Create a video or audio  
  - Create a broadcast  
  - Create a written essay or paragraph | ELA: Informative writing, comprehending informative text, research synthesis | Wheel spinner for interactive game  
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https://www.tweentribune.com/  
TweenTribune is a free, not-for-profit online newspaper. It is updated daily with stories from the Associated Press that are chosen based on relevancy to pre-adolescents.  
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</tr>
<tr>
<td>Associated Press that are chosen based on relevancy to pre-adolescents.</td>
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</tbody>
</table>
**Key Vocabulary**

| algorithms, app functions, pseudocode, programming language, sequential statement, conditional statement, iterations, trade-offs, control, structure, control structure, programming, app, solution, alternatives, iterative loop, selection constructs, recursion, algorithms, computational problems, algorithms |

**Work-Based Learning, Simulated Work Experiences, and Experiential Learning:**

- Guest Speakers or Field Trip, CTSO Competitive Events

**CTSO Connection:**

- FBLA (Public Service Announcement, Digital Video Production, Broadcast Journalism, Mobile Application Development)
- DECA (Business Law and Ethics Team Decision Making)

**Certification/Credential Connection:**

- Adobe Certified Associate (ACA) – Photoshop / Dreamweaver / Premier Pro / InDesign / Illustrator
- ASK Institute – Concepts of Entrepreneurship and Management / Fundamental Business Concepts
- Certiport- Entrepreneurship and Small Business (must hold concentrator status)
- IC3 Global Standard 6 (or higher), Microsoft Office Expert 2019/365 - Access / Excel / Word
- Microsoft Office Specialist 2019/365 (MOS) (Two of the following areas REQUIRED: Excel Associate / Outlook Associate / PowerPoint Associate / Word Associate)
Unit 14 Title: Programming

Content Standards
24. Design and use different prototypes to test an app to determine whether it performs according to design specifications.

Unpacked Learning Objectives

Students know:
- Different prototypes to test an app to determine whether it performs according to design specifications.

Students are able to:
- Design different prototypes to test an app to determine whether it performs according to design specifications.
- Use Design and use different prototypes to test an app to determine whether it performs according to design specifications.
- Summarize different prototypes to test an app to determine whether it performs according to design specifications.
- Describe different prototypes to test an app to determine whether it performs according to design specifications.

Students understand that:
- Mobile Application Development consists of creating prototypes to test an app to determine whether it performs according to design specifications.

<table>
<thead>
<tr>
<th>Unit Driving/Essential Question</th>
<th>What are the different prototypes to test an app in determining whether it performs according to design specifications?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>What control structure is best for programming different parts of an app?</td>
</tr>
<tr>
<td></td>
<td>What algorithm is needed to solve computational problems when developing an app?</td>
</tr>
</tbody>
</table>

| Exemplar High Quality Unit Task | Students are able to determine the prototypes to test an app in determining whether it performs according to design specifications. |
### Map of Student Learning by Learning Objective

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>Students create and apply different prototypes to test an app to determine whether it performs according to design specifications.</td>
<td>The teachers provide a classroom lecture on different prototypes to test an app to determine whether it performs according to design specifications.</td>
<td>Group Activity: Students are separated in small groups and given the task to create and present their findings via a created PowerPoint presentation, video, and/or broadcast.</td>
<td>SCI: Students will use Justinmind.com and Loop11.com collaborated on the Essential Checklist for User Testing a Mobile App Prototype. Students will follow 8 steps and pro-tips for more effective usability testing and engaging, addictive, usable apps.</td>
<td>Interactive Board</td>
</tr>
</tbody>
</table>
| Summative: In small groups, the teacher observes students apply different prototypes to test an app to determine whether it performs according to design specifications. | ● classroom rubric  
● class discussions  
● quizzes  
● exit slips  
● peer reviews  
● self-assessments  
● listening/notes-taking guides  
● interactive review games | ● Give a presentation  
● Create a poster or illustration document  
● Create a brochure  
● Create a storyboard or infographic  
● Create a video or audio  
● Create a broadcast  
● Create a written essay or paragraph | ELA: Informative writing, comprehending informative text, research synthesis, use an infographic to share prototype tests | Flipgrid Video [https://auth.flipgrid.com/sign-up](https://auth.flipgrid.com/sign-up) |
| | | Learning Activity Checklist  | [Link to Differentiation Examples](#) | Graphic Design Platform [https://www.canva.com/](https://www.canva.com/) |
| | | [Link to Differentiation Examples](#) | [Equipment List by CTE Cluster](#) | Useful Links:  
MBA Research  
iCEV |
- fill-in-blank
- short answer questions
- Simulation Project

<table>
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<tr>
<td>Teach DECA</td>
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User Testing a Mobile App Prototype: Essential Checklist
Key Vocabulary

| prototype |

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| Guest Speakers or Field Trip, CTSO Competitive Events |

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| Microsoft Office Specialist 2019/365 (MOS) (Two of the following areas REQUIRED: Excel Associate / Outlook Associate / PowerPoint Associate / Word Associate) |
Unit 15 Title: Safety, Privacy, and Security

Content Standards
25. Describe the functions of user tracking methods developed as an internal component of an app.
   25a. Investigate the ethical ramifications of user tracking and create a written or digital presentation stating and defending their own beliefs about the propriety of tracking.

26. Develop and present an end-user license agreement for an app that includes a terms of service agreement granting rights to access or use personal data and media.

27. Describe the physical, legal, and ethical consequences of inappropriate digital behavior.

28. Develop a plan to build a positive reputation of the app company and personal identity online.

Unpacked Learning Objectives

Students know:
● The functions of user tracking methods developed as an internal component of an app.
● The ethical ramifications of user tracking and creating a written or digital presentation stating and defending their own beliefs about the propriety of tracking.
● An end-user license agreement for an app that includes a terms of service agreement granting rights to access or use personal data and media.
● The physical, legal, and ethical consequences of inappropriate digital behavior.
● A plan to build a positive reputation of the app company and personal identity online.
● How to create a plan to build a positive reputation of the app company and personal identity online.
● How to develop a plan to build a positive reputation of the app company and personal identity online.

Students are able to:
● Summarize the functions of user tracking methods developed as an internal component of an app.
● Describe the functions of user tracking methods developed as an internal component of an app.
● Examine the ethical ramifications of user tracking and create a written or digital presentation stating and defending their own beliefs about the propriety of tracking.
● Summarize the ethical ramifications of user tracking and create a written or digital presentation stating and defending their own beliefs about the propriety of tracking.
● Describe the ethical ramifications of user tracking and create a written or digital presentation stating and defending their own beliefs about the propriety of tracking.
● Describe an end-user license agreement for an app that includes a terms of service agreement granting rights to access or use personal data and media.
● Summarize an end-user license agreement for an app that includes a terms of service agreement granting rights to access or use personal data and media.
● Develop an end-user license agreement for an app that includes a terms of service agreement granting rights to access or use personal data and media.
● Summarize the physical, legal, and ethical consequences of inappropriate digital behavior.
● Describe the physical, legal, and ethical consequences of inappropriate digital behavior.
● Create a plan to build a positive reputation of the app company and personal identity online.
● Develop a plan to build a positive reputation of the app company and personal identity online.
● Generate a plan to build a positive reputation of the app company and personal identity online.
● Prepare a plan to build a positive reputation of the app company and personal identity online.

Students understand that:
● Safety, privacy, and security is an essential internal component of an app.
● There are positive benefits as well as negative consequences of user tracking.
● An end-user license agreement is essential to the terms of service agreement granting rights to access or use personal data and media.
● There are physical, legal, and ethical consequences of inappropriate digital behavior.
● A plan that creates a positive reputation of the app company is an essential task in Mobile Application Development.

<table>
<thead>
<tr>
<th>Unit Driving/Essential Question</th>
<th>What are the ethical ramifications of user tracking and creating a written or digital presentation?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>What is an end-user license agreement for an app?</td>
</tr>
<tr>
<td></td>
<td>What are the physical, legal, and ethical consequences of inappropriate digital behavior?</td>
</tr>
<tr>
<td></td>
<td>How do you develop a plan to build a positive reputation of an app company and personal identity online?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exemplar High Quality Unit Task</th>
<th>Students are able to track and create a written or digital presentation.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Students are aware of the safety, privacy, and security of an app.</td>
</tr>
</tbody>
</table>

Alabama State Department of Education, Career and Technical Education/Workforce Development, Plans of Instruction Updated as of Aug 2, 2022
### Map of Student Learning by Learning Objective

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<tbody>
<tr>
<td>Students explain in their own words the functions of user tracking methods developed as an internal component of an app.</td>
<td>The teachers provide a classroom lecture on the functions of user tracking methods developed as an internal component of an app.  - classroom rubric  - class discussions  - quizzes  - exit slips  - peer reviews  - self-assessments  - listening/notes-taking guides  - interactive review games</td>
<td>Group Activity: Students are separated in small groups and given the task to create and present their findings via a created PowerPoint presentation. video, and/or broadcast.  - Give a presentation  - Create a poster or illustration document  - Create a brochure  - Create a storyboard or infographic  - Create a video or audio  - Create a broadcast  - Create a written essay or paragraph</td>
<td>ELA: Informative writing, comprehending informative text, research synthesis  SS: Determine how you can use the tracking methods to promote business (marketing)</td>
<td>Interactive Board  Flipgrid Video <a href="https://auth.flipgrid.com/signup">https://auth.flipgrid.com/signup</a>  Wheel spinner for interactive game <a href="https://wheelofnames.com/">https://wheelofnames.com/</a>  Graphic Design Platform <a href="https://www.canva.com/">https://www.canva.com/</a>  Peer Review Handout <a href="https://www.wssd.org/cms/lib/PA01001072/Centricity/Domain/257/Peer%20Evaluation%20of%20A%20Group%20Presentation.pdf">https://www.wssd.org/cms/lib/PA01001072/Centricity/Domain/257/Peer%20Evaluation%20of%20A%20Group%20Presentation.pdf</a>  Graphic Organizer Infographic Comparing <a href="https://www.hmhco.com/bl">https://www.hmhco.com/bl</a></td>
</tr>
<tr>
<td>Students research the ethical ramifications of user tracking and create a written or digital presentation stating and defending their own beliefs about the propriety of tracking.</td>
<td>The teachers provide a classroom lecture on ethical ramifications of user tracking and create a written or digital presentation stating and defending their own beliefs about the propriety of tracking.</td>
<td>Group Activity: Students are separated in small groups and given the task to create and present their findings via a created PowerPoint presentation. video, and/or broadcast.</td>
<td>ELA: Informative writing, comprehending informative text, research synthesis, argumentative writing, hold a debate defending their beliefs, fishbowl discussion strategy</td>
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</table>
| ● unit exam with multiple choices  
● fill-in-blank  
● short answer questions | ● classroom rubric  
● class discussions  
● quizzes  
● exit slips  
● peer reviews  
● self-assessments | ● Give a presentation  
● Create a poster or illustration document  
● Create a brochure  
● Create a storyboard or infographic | SS: Examine ethical business practices and privacy laws. |

Useful Links:
- MBA Research
- iCEV
- Teach FBLA
- Teach DECA

EdPuzzle videos, articles, and resources [https://edpuzzle.com/discover](https://edpuzzle.com/discover)

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<th>Activity/Supplement</th>
<th>Description</th>
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<tbody>
<tr>
<td>Listening/Notes-taking guides</td>
<td>Students discuss ethical ramifications of user tracking and create a written or digital presentation stating and defending their own beliefs about the propriety of tracking.</td>
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<td>Interactive review games</td>
<td>The teachers provide a classroom lecture on end-user license agreement for an app that includes a terms of service agreement granting rights to access or use personal data and media.</td>
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<td>Group Activity: Students are separated in small groups and given the task to create and present their findings via a created PowerPoint presentation, video, and/or broadcast.</td>
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<tr>
<td>Fill-in-blank</td>
<td>SS: Examine privacy laws for terms of service agreement.</td>
</tr>
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<td>Students create and present an end-user license agreement for an app that includes a terms of service agreement granting rights to access or use personal data and media.</td>
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<tr>
<td>Create a video or audio</td>
<td>Peer Review Handout <a href="https://www.wssd.org/cms/lib/PA01001072/Centricity/Domain/257/Peer%20Evaluation%20of%20a%20Group%20Presentation.pdf">Link</a></td>
</tr>
<tr>
<td>Create a broadcast</td>
<td>Graphic Organizer InfoGraphic Comparing <a href="https://www.hmhco.com/blog/free-graphic-organizer-templates">Link</a></td>
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<td>Create a written essay or paragraph</td>
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<td>Students explain in their own words the physical, legal, and ethical consequences of</td>
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<td>Summative: In small groups, the teacher observes students discuss end-user license agreement for an app that includes a terms of service agreement granting rights to access or use personal data and media. The teachers provide a classroom lecture on the physical, legal, and ethical consequences of</td>
<td>Create a storyboard or infographic</td>
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<tr>
<td>• self-assessments</td>
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inappropriate digital behavior.  
- classroom rubric  
- class discussions  
- quizzes  
- exit slips  
- peer reviews  
- self-assessments  
- listening/notes-taking guides  
- interactive review games  

Summative: In small groups, the teacher observes students discuss the physical, legal, and ethical consequences of inappropriate digital behavior.  
- unit exam with multiple choices  
- fill-in-blank  
- short answer questions  

present their findings via a created PowerPoint presentation, video, and/or broadcast.  
- Give a presentation  
- Create a poster or illustration document  
- Create a brochure  
- Create a storyboard or infographic  
- Create a video or audio  
- Create a broadcast  
- Create a written essay or paragraph  

SS: Ethical business practices, business law, digital privacy consumer rights  

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| Students create a plan to build a positive reputation of the app company and personal identity online. | The teachers provide a classroom lecture on creating a plan to build a positive reputation of the app company and personal identity online.  
- classroom rubric  
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- Create a broadcast  
- Create a written essay or paragraph | ELA: Informative writing, comprehending informative text,  
SS: Internet marketing  
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Key Vocabulary

user tracking methods, ethical ramifications, user tracking, written presentation, digital presentation, propriety of tracking, end-user license, agreement, physical consequences, legal consequences, ethical consequences, inappropriate digital behavior, cyberbullying, inappropriate sexual communications, digital footprint on social media, positive reputation, personal identity online

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DECA (Business Law and Ethics Team Decision Making)

Certification/Credential Connection:

Adobe Certified Associate (ACA) – Photoshop / Dreamweaver / Premier Pro / InDesign / Illustrator
ASK Institute – Concepts of Entrepreneurship and Management / Fundamental Business Concepts
Certiport- Entrepreneurship and Small Business (must hold concentrator status)
IC3 Global Standard 6 (or higher), Microsoft Office Expert 2019/365 - Access / Excel / Word
Microsoft Office Specialist 2019/365 (MOS) (Two of the following areas REQUIRED: Excel Associate / Outlook Associate / PowerPoint Associate / Word Associate)
Unit 16 Title: Legal and Ethical Behavior

Content Standards

29. Research and apply safety measures that could protect an app and its data from malware and other attacks.

30. Explain the fair use doctrine and the benefits and negative effects of laws that protect intellectual property.
   30a. Determine potential effects on innovation of laws protecting intellectual property.

Unpacked Learning Objectives

Students know:
- Safety measures that could protect an app and its data from malware and other attacks.
- The fair use doctrine and the benefits and negative effects of laws that protect intellectual property.
- The potential effects on innovation of laws protecting intellectual property.

Students are able to:
- Identify safety measures that could protect an app and its data from malware and other attacks.
- Summarize safety measures that could protect an app and its data from malware and other attacks.
- Describe safety measures that could protect an app and its data from malware and other attacks.
- Use safety measures that could protect an app and its data from malware and other attacks.
- Summarize the fair use doctrine and the benefits and negative effects of laws that protect intellectual property.
- Describe the fair use doctrine and the benefits and negative effects of laws that protect intellectual property.
- Identify potential effects on innovation of laws protecting intellectual property.
- Summarize the potential effects on innovation of laws protecting intellectual property.

Students understand that:
- There are safety measures created and can be used to protect an app and its data from malware and other attacks.
- There is a fair use doctrine and laws created to protect the intellectual property of an app.
- There are Intellectual Property laws that are created to protect app creators.

<table>
<thead>
<tr>
<th>Unit Driving/Essential Question</th>
<th>What are the safety measures used to create and protect apps and its data from malware and other attacks?</th>
</tr>
</thead>
<tbody>
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<td>What are the fair use doctrine and the benefits and negative effects of laws that protect intellectual property?</td>
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Alabama State Department of Education, Career and Technical Education/Workforce Development, Plans of Instruction
Updated as of Aug 2, 2022
| Exemplar High Quality Unit Task | Students understand the safety measures used to create and protect apps and its data from malware and other attacks. |
# Map of Student Learning by Learning Objective

|----------------------------------|-------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------|----------------------------------|
| Students examine and use safety measures that could protect an app and its data from malware and other attacks. | The teachers provide a classroom lecture on safety measures that could protect an app and its data from malware and other attacks.  
   - classroom rubric  
   - class discussions  
   - quizzes  
   - exit slips  
   - peer reviews  
   - self-assessments  
   - listening/notes-taking guides  
   - interactive review games | Group Activity: Students are separated in small groups and given the task to create and present their findings via a created PowerPoint presentation. video, and/or broadcast.  
   - Give a presentation  
   - Create a poster or illustration document  
   - Create a brochure  
   - Create a video or audio  
   - Create a broadcast  
   - Create a written essay or paragraph | ELA: Informative writing, comprehending informative text, research synthesis |
| Summative: In small groups, the teacher observes discuss safety measures that could protect an app and its data from malware and other attacks.  
   - unit exam with multiple choices  
   - fill-in-blank | | | |

**Equipment List by CTE Cluster**

- Wheel spinner for interactive game [https://wheelofnames.com/](https://wheelofnames.com/)
- Interactive Board
- Flipgrid Video [https://auth.flipgrid.com/signup](https://auth.flipgrid.com/signup)
- Graphic Design Platform [https://www.canva.com/](https://www.canva.com/)
- Graphic Organizer

**Link to Differentiation Examples**

- Checklist
- Class discussions
- Quizzes
- Exit slips
- Peer reviews
- Self-assessments
- Listening/notes-taking guides
- Interactive review games

**Link to Helpful Tech Tools**

- Wheel of Names [https://wheelofnames.com/](https://wheelofnames.com/)
- Flipgrid Video [https://auth.flipgrid.com/signup](https://auth.flipgrid.com/signup)
- Graphic Design Platform [https://www.canva.com/](https://www.canva.com/)
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Alabama State Department of Education, Career and Technical Education/Workforce Development, Plans of Instruction Updated as of Aug 2, 2022
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<th>Students explain in their own words the fair use doctrine and the benefits and negative effects of laws that protect intellectual property.</th>
<th>The teachers provide a classroom lecture on the fair use doctrine and the benefits and negative effects of laws that protect intellectual property.</th>
<th>Group Activity: Students are separated in small groups and given the task to create and present their findings via a created PowerPoint presentation, video, and/or broadcast.</th>
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<td><strong>●</strong> short answer questions <strong>●</strong> classroom rubric <strong>●</strong> class discussions <strong>●</strong> quizzes <strong>●</strong> exit slips <strong>●</strong> peer reviews <strong>●</strong> self-assessments <strong>●</strong> listening/notes-taking guides <strong>●</strong> interactive review games</td>
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<td>Summative: In small groups, the teacher observes students discussing the fair use doctrine and the benefits and negative effects of laws that protect intellectual property.</td>
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<td>ELA: Informative writing, comprehending informative text, research synthesis SS: Examine intellectual property laws</td>
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<td>Students identify potential effects on innovation of laws protecting intellectual property.</td>
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| ● unit exam with multiple choices  
● fill-in-blank  
● short answer questions | ● classroom rubric  
● class discussions  
● quizzes  
● exit slips  
● peer reviews  
● self-assessments  
● listening/notes-taking guides | ● Give a presentation  
● Create a poster or illustration document  
● Create a brochure  
● Create a video or audio | SS: Examine intellectual property laws |
| Useful Links: MBA Research  
iCEV  
Teach FBLA  
Teach DECA  
EdPuzzle videos, articles, and resources [https://edpuzzle.com/discover](https://edpuzzle.com/discover)  
TweenTribune is a free, not-for-profit online newspaper. It is updated daily with stories from the Associated Press that are chosen based on relevancy to pre-adolescents. | Wheel spinner for interactive game [https://wheelofnames.com/](https://wheelofnames.com/)  
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<td><strong>Fill-in-Blank</strong></td>
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<tr>
<td><strong>Short Answer Questions</strong></td>
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Peer Review Handout

Graphic Organizer
Infographic Comparing

Useful Links:
- MBA Research
- iCEV
- Teach FBLA
- Teach DECA

EdPuzzle videos, articles, and resources
[https://edpuzzle.com/discover](https://edpuzzle.com/discover)

[https://www.tweentribune.com/](https://www.tweentribune.com/)
TweenTribune is a free, not-for-profit online newspaper. It is updated daily with stories from the Associated Press that are chosen based on relevancy to pre-adolescents.
Key Vocabulary

safety measures, malware, attacks, fair use doctrine, laws that protect intellectual property, intellectual property

Work-Based Learning, Simulated Work Experiences, and Experiential Learning:

Guest Speakers or Field Trip, CTSO Competitive Events

CTSO Connection:

FBLA (Public Service Announcement, Digital Video Production, Broadcast Journalism, Mobile Application Development)
DECA (Business Law and Ethics Team Decision Making)

Certification/Credential Connection:

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