



# Washington Township School District



*The mission of the Washington Township Public Schools is to provide a safe, positive, and progressive educational environment that provides opportunity for all students to attain the knowledge and skills specified in the NJ Learning Standards at all grade levels, so as to ensure their full participation in an ever-changing world as responsible, self-directed and civic-minded citizens.*

<b>Course Title:</b>	<b>Video Game Design</b>					
<b>Grade Level(s):</b>	9-12					
<b>Duration:</b>	<i>Full Year:</i>	<b>x</b>	<i>Semester:</i>		<i>Marking Period:</i>	
<b>Course Description:</b>	Students will learn basic programming and how logic applies to video games. Students will learn the history of video games, programming, and the impact that video games have had on society. Using MIT webbased software Scratch, students will have the opportunity to create their own school appropriate games, and use critical thinking skills to debug programs. Students will create games to be played on the personal computer, so basic computer systems concepts will be taught, including networking, computer operation and computer care and maintenance. Different career options in video games will be discussed, as well as the opportunities available in computer systems and cyber security.					
<b>Grading Procedures:</b>	TOTAL POINTS- All assignments, projects, tests and quizzes will be given specific points based on a level of work/time required. Students will earn points for fulfilling the requirements for each activity. A rubric will be provided prior to each assignment/activity so that each student will know their value. Student marking period grades will be based on the points earned divided by the total points assigned. The percentage of points earned will be the student's marking period grade.					
<b>Primary Resources:</b>	Adobe Creative Suite Projector Apple Computers Camera Equipment (SLR Cameras)					

## Washington Township Principles for Effective Teaching and Learning

- Implementing a standards-based curriculum
- Facilitating a learner-centered environment
- Using academic target language and providing comprehensible instruction
- Adapting and using age-appropriate authentic materials
- Providing performance-based assessment experiences
- Infusing 21st century skills for College and Career Readiness in a global society

**Designed by:** Mr. Dale Biebel

**Under the Direction of:** Ms. Malika Moore

**Written:** Sept 2023

**Revised:**

**BOE Approval:**

**Unit Title:** Unit 1 – Introduction to Video Game History

**Unit Description:** The first unit of Computer Systems and Video Game Design introduces students to the course expectations, the classroom, and the emergency procedures. Student's grades will be based on participation, projects, and assignments such as test, quizzes, and classwork. Students will be expected to report to class on time, as per board policy. Students should be familiar with the classroom layout, and any safety equipment in the room. All students will know where to report in the event the fire alarm should sound, or any other drill/emergency takes place. The courses of study for the semester will be reviewed, and students will be asked what roles video games play in our society.

**Unit Duration:** 1 Week (5 Days)

### Desired Results

**Standard(s):**

**9.2 Career Awareness, Exploration, and Preparation**

**9.3 Career and Technical Education - Arts, A/V Technology, & Communications Career Cluster**

All students who complete a career and technical education program will acquire academic and technical skills for careers in emerging and established professions that lead to technical skill proficiency, credentials, certificates, licenses, and/or degrees.

**Indicators:**

8.1.12.A3,4  
8.1.12.D.5  
8.1.12.E.1  
8.1.12.F.12  
9.1.12.A.3  
9.1.12.A.6  
9.2.12.C.3,6  
9.3.12FN-ACT.1-4  
CRP1-12

**Understandings:**

*Students will understand that...*

- Video games are made for purposes other than entertainment
- The 8 genres of video game design
- Player mode effects the design platform you create for

**Essential Questions:**

1. What are examples of goals for video games?
2. How can video games be used as a training tool?
3. How can video games be used for marketing or advertising?
4. How can video games be used for education purposes?
5. What factors can change the audience for a video game?
6. What are demographics?

### Assessment Evidence

**Performance Tasks:** Explore Classroom for understanding of classroom management and procedures.

**Other Evidence:**

- Check for Understanding
- Questioning
- Teacher observation

**Benchmarks:**

Chapter 1 -Test

Chapter 2 - Test

**Learning Plan****Learning Activities:**

- Course Syllabus/Proficiency and Safety will be reviewed.
- Rules and Procedures will be reviewed
- Safety Regulations and Procedures
- Discussion and demonstration on the Digital Workflow and how it pertains to the class.
- Students will learn where everything is located in the room.
- Orally review Fire/Emergency Evacuation Drill
- Discuss Federal Laws for Safety

**Resources:****Unit Modifications for Special Population Students****Advanced Learners**

- Provide ample opportunities for creative behavior.
  - Create assignments that call for original work, independent learning, critical thinking, problem solving, and experimentation.
  - Show appreciation for creative efforts
  - Respect unusual questions, ideas, and solutions.
  - Encourage students to test their ideas.
  - Provide opportunities and give credit for self-initiated learning.
  - Avoid overly detailed supervision and too much reliance on prescribed curricula.
  - Allow time for reflection.
  - Resist immediate and constant evaluation.
- Avoid comparisons to other students.

**Struggling Learners**

- Assist students in getting organized.
  - Give short directions.
  - Use drill exercises.
  - Give prompt cues during student performance.
  - Let students with poor writing skills use a computer.
  - Break assignments into small segments and assign only one segment at a time.
  - Demonstrate skills and have students model them.
  - Give prompt feedback.
  - Use continuous assessment to mark students' daily progress.
- Prepare materials at varying levels of ability

**English Language Learners**

- Use a slow, but natural rate of speech; speak clearly; use shorter sentences; repeat concepts in several ways.
  - When possible, use pictures, photos, and charts.
  - Corrections should be limited and appropriate. Do not correct grammar or usage errors in front of the class.
  - Give honest praise and positive feedback through your voice tones and visual articulation whenever possible.
  - Encourage students to use language to communicate, allowing them to use their native language to ask/answer questions when they are unable to do so in English.
  - Integrate students' cultural background into class discussions.
- Use cooperative learning where students have opportunities to practice expressing ideas without risking language errors in front of the entire class.

<b>Learners with an IEP</b>	<ul style="list-style-type: none"> <li>• Use concrete examples to introduce concepts.</li> <li>• Make learning activities consistent.</li> <li>• Use repetition and drills spread over time.</li> <li>• Provide work folders for daily assignments.</li> <li>• Use behavior management techniques, such as behavior modification, in the area of adaptive behavior.</li> <li>• Break assignments into small segments and assign only one segment at a time.</li> <li>• Demonstrate skills and have students model them.</li> <li>• Encourage students to function independently.</li> <li>• Give students extra time to both ask and answer questions while giving hints to answers.</li> <li>• Give simple directions and read them over with students.</li> </ul>
<b>Learners with a 504</b>	Refer to page four in the <a href="#">Parent and Educator Resource Guide to Section 504</a> to assist in the development of appropriate plans.

### Interdisciplinary Connections

#### Indicators:

**LA.SL.11-12.1** - Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with peers on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

**TECH.8.1.2.A** - Students demonstrate a sound understanding of technology concepts, systems and operations

**TECH.8.1.2.E** - Students apply digital tools to gather, evaluate, and use information.

### Integration of 21<sup>st</sup> Century Skills

#### Indicators:

CRP1. Act as a responsible and contributing citizen and employee.

CRP2. Apply appropriate academic and technical skills.

CRP3. Attend to personal health and financial well-being.

CRP4. Communicate clearly and effectively and with reason.

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

CRP6. Demonstrate creativity and innovation.

CRP7. Employ valid and reliable research strategies.

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

CRP9. Model integrity, ethical leadership and effective management

CRP10. Plan education and career paths aligned to personal goals.

CRP11. Use technology to enhance productivity.

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

<b>Unit Title:</b> Unit 2 – introduction to	
This unit will introduce students to basics of programming. Students will learn different number systems, how they apply to information technology and computer systems. Students will be able to learn how to convert from one system to another. Standards and the organizations that create the standards will be introduced. Students will know digital logic, including operations of logic gates and Boolean algebra. Different programming languages will be overviewed. Students will begin writing simple programs and exploring If/Then statements.	
<b>Unit Duration:</b> 5 weeks	
<b>Desired Results</b>	
<b>Standard(s):</b> <b>9.2 Career Awareness, Exploration, and Preparation</b>  <b>9.3 Career and Technical Education - Arts, A/V Technology, &amp; Communications Career Cluster</b> All students who complete a career and technical education program will acquire academic and technical skills for careers in emerging and established professions that lead to technical skill proficiency, credentials, certificates, licenses, and/or degrees.	
<b>Indicators:</b> 8.1.12.A3,4 8.1.12.D.5 8.1.12.E.1 8.1.12.F.12 9.1.12.A.3 9.1.12.A.6 9.2.12.C.3,6 9.3.12FN-ACT.1-4 CRP1-12	
<b>Understandings:</b> <i>Students will understand that...</i> <ol style="list-style-type: none"> <li>1. Numbering systems all act alike.</li> <li>2. Any value can be converted from one system to another.</li> <li>3. Computers can only work with the binary system</li> <li>4. Humans have the ability to work in all systems</li> <li>5. Digital logic can be used to make decisions</li> </ol>	<b>Essential Questions:</b> <ol style="list-style-type: none"> <li>1. What are the common numbering systems used in information systems technology?</li> <li>2. Why must a digital computer operate in the binary system?</li> <li>3. What is the basis of numbering systems?</li> <li>4. Why is it necessary to have more than one numbering system?</li> <li>5. How do you convert from one system to another?</li> <li>6. What is Boolean Algebra</li> </ol>
<b>Assessment Evidence</b>	
<b>Performance Tasks:</b> <ul style="list-style-type: none"> <li>• Lecture and Notes</li> <li>• Pong and Algebra. Logic for a bouncing ball</li> <li>• Coordinate Graphing</li> </ul>	<b>Other Evidence:</b> <ul style="list-style-type: none"> <li>• Check for Understanding</li> <li>• Questioning</li> <li>• Teacher observation</li> <li>• Safety Quiz</li> </ul>
<b>Benchmarks:</b> Coordinate Graphic – Test 1 and 2 Pong Rubric	

## Learning Plan

### Learning Activities:

Coordinate graphic activities and Pong

### Resources:

Graphic Design Solutions Text Book, White Board, Projector, Adobe Creative Suite, Printers, Paper, Digital Camera, Memory cards, Memory card readers, Tablets, Scanners, Internet, Font and brush website

## Unit Modifications for Special Population Students

<b>Advanced Learners</b>	<ul style="list-style-type: none"> <li>• Provide ample opportunities for creative behavior.</li> <li>• Create assignments that call for original work, independent learning, critical thinking, problem solving, and experimentation.</li> <li>• Show appreciation for creative efforts</li> <li>• Respect unusual questions, ideas, and solutions.</li> <li>• Encourage students to test their ideas.</li> <li>• Provide opportunities and give credit for self-initiated learning.</li> <li>• Avoid overly detailed supervision and too much reliance on prescribed curricula.</li> <li>• Allow time for reflection.</li> <li>• Resist immediate and constant evaluation.</li> </ul> <p>Avoid comparisons to other students.</p>
<b>Struggling Learners</b>	<ul style="list-style-type: none"> <li>• Assist students in getting organized.</li> <li>• Give short directions.</li> <li>• Use drill exercises.</li> <li>• Give prompt cues during student performance.</li> <li>• Let students with poor writing skills use a computer.</li> <li>• Break assignments into small segments and assign only one segment at a time.</li> <li>• Demonstrate skills and have students model them.</li> <li>• Give prompt feedback.</li> <li>• Use continuous assessment to mark students' daily progress.</li> <li>• Prepare materials at varying levels of ability.</li> </ul>
<b>English Language Learners</b>	<ul style="list-style-type: none"> <li>• Use a slow, but natural rate of speech; speak clearly; use shorter sentences; repeat concepts in several ways.</li> <li>• When possible, use pictures, photos, and charts.</li> <li>• Corrections should be limited and appropriate. Do not correct grammar or usage errors in front of the class.</li> <li>• Give honest praise and positive feedback through your voice tones and visual articulation whenever possible.</li> <li>• Encourage students to use language to communicate, allowing them to use their native language to ask/answer questions when they are unable to do so in English.</li> <li>• Integrate students' cultural background into class discussions.</li> </ul> <p>Use cooperative learning where students have opportunities to practice expressing ideas without risking language errors in front of the entire class.</p>
<b>Learners with an IEP</b>	<ul style="list-style-type: none"> <li>• Use concrete examples to introduce concepts.</li> <li>• Make learning activities consistent.</li> <li>• Use repetition and drills spread over time.</li> <li>• Provide work folders for daily assignments.</li> <li>• Use behavior management techniques, such as behavior modification, in the area of adaptive behavior.</li> <li>• Break assignments into small segments and assign only one segment at a time.</li> <li>• Demonstrate skills and have students model them.</li> <li>• Encourage students to function independently.</li> <li>• Give students extra time to both ask and answer questions while giving hints to answers.</li> <li>• Give simple directions and read them over with students.</li> </ul>

	Shorten the number of items on exercises, tests, and quizzes.
<b>Learners with a 504</b>	Refer to page four in the <a href="#">Parent and Educator Resource Guide to Section 504</a> to assist in the development of appropriate plans.

### Interdisciplinary Connections

**Indicators:**

9.3.12.AR.4, 9.3.12.AR.B4, 9.3.IT-SUP.2-3, 9.3.ST-ET.4

### Integration of 21<sup>st</sup> Century Skills

**Indicators:**

CRP1. Act as a responsible and contributing citizen and employee.  
 CRP2. Apply appropriate academic and technical skills.  
 CRP3. Attend to personal health and financial well-being.  
 CRP4. Communicate clearly and effectively and with reason.  
 CRP5. Consider the environmental, social and economic impacts of decisions.  
 CRP6. Demonstrate creativity and innovation.  
 CRP7. Employ valid and reliable research strategies.  
 CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.  
 CRP9. Model integrity, ethical leadership and effective management  
 CRP10. Plan education and career paths aligned to personal goals.  
 CRP11. Use technology to enhance productivity.  
 CRP12. Work productively in teams while using cultural global competence.

<b>Unit Title:</b> Unit 3 – History of Video Game Design	
In this unit, students will be learning about the history of video games. Students need to understand that the roots of popular video games seen today come from some of the very first games created. Students will be required to do research on the first generation of video games, their creators, and the companies that have had great success as well as failures throughout the years. Students will learn about how the world of video games has flourished since they were first introduced and how the community has helped the field grow exponentially.	
<b>Unit Duration:</b> 6 (weeks)	
<b>Desired Results</b>	
<b>Standard(s):</b> <b>9.3 Career and Technical Education - Arts, A/V Technology, &amp; Communications Career Cluster</b> All students who complete a career and technical education program will acquire academic and technical skills for careers in emerging and established professions that lead to technical skill proficiency, credentials, certificates, licenses, and/or degrees.	
<b>Indicators:</b> 8.1.12.A3,4 8.1.12.D.5 8.1.12.E.1 8.1.12.F.12 9.1.12.A.3 9.1.12.A.6 9.2.12.C.3,6 9.3.12FN-ACT.1-4 CRP1-12	
<b>Understandings:</b> <i>Students will understand that...</i> <ol style="list-style-type: none"> <li>Some of the very first computers built helped lead to the invention of very basic video games.</li> <li>Video games are extensions to multiple computer fields such as computer science and artificial intelligence.</li> <li>Video games are a leisurely activity as well as a hobby people use to pass time.</li> </ol>	<b>Essential Questions:</b> <ol style="list-style-type: none"> <li>When were video games first introduced?</li> <li>How did computers help create the first basic video games?</li> <li>What were some of the first games ever created?</li> <li>Who were the leading pioneers of the video game industry?</li> <li>Why did it take a while for video games to become popular?</li> <li>Why do people play video games?</li> </ol>
<b>Assessment Evidence</b>	
<b>Performance Tasks:</b> <ul style="list-style-type: none"> <li>Class Discussions and eveloutions of gaming</li> </ul>	<b>Other Evidence:</b> <ul style="list-style-type: none"> <li>Participation Grade</li> <li>Check for Understanding</li> <li>Questioning</li> <li>Teacher observation</li> </ul>
<b>Benchmarks:</b> <ul style="list-style-type: none"> <li>Class Lecture</li> <li>Chapter 3 Quiz</li> </ul>	
<b>Learning Plan</b>	



**Learning Activities:**

Game Buttons and Controllers

Graphic capabilities

**Resources:** Graphic Design Solutions Text Book, White Board, Projector, Adobe Creative Suite, Printers, Paper, Digital Camera, Memory cards, Memory card readers, Tablets, Scanners, Internet, Font and brush website

### Unit Modifications for Special Population Students

**Advanced Learners**

- Provide ample opportunities for creative behavior.
- Create assignments that call for original work, independent learning, critical thinking, problem solving, and experimentation.
- Show appreciation for creative efforts
- Respect unusual questions, ideas, and solutions.
- Encourage students to test their ideas.
- Provide opportunities and give credit for self-initiated learning.
- Avoid overly detailed supervision and too much reliance on prescribed curricula.
- Allow time for reflection.
- Resist immediate and constant evaluation.
- Avoid comparisons to other students.

**Struggling Learners**

- Assist students in getting organized.
- Give short directions.
- Use drill exercises.
- Give prompt cues during student performance.
- Let students with poor writing skills use a computer.
- Break assignments into small segments and assign only one segment at a time.
- Demonstrate skills and have students model them.
- Give prompt feedback.
- Use continuous assessment to mark students' daily progress.
- Prepare materials at varying levels of ability.

**English Language Learners**

- Use a slow, but natural rate of speech; speak clearly; use shorter sentences; repeat concepts in several ways.
  - When possible, use pictures, photos, and charts.
  - Corrections should be limited and appropriate. Do not correct grammar or usage errors in front of the class.
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  - Integrate students' cultural background into class discussions.
- Use cooperative learning where students have opportunities to practice expressing ideas without risking language errors in front of the entire class.

**Learners with an IEP**

- Use concrete examples to introduce concepts.
  - Make learning activities consistent.
  - Use repetition and drills spread over time.
  - Provide work folders for daily assignments.
  - Use behavior management techniques, such as behavior modification, in the area of adaptive behavior.
  - Break assignments into small segments and assign only one segment at a time.
  - Demonstrate skills and have students model them.
  - Encourage students to function independently.
  - Give students extra time to both ask and answer questions while giving hints to answers.
  - Give simple directions and read them over with students.
- Shorten the number of items on exercises, tests, and quizzes.

<b>Learners with a 504</b>	Refer to page four in the <a href="#">Parent and Educator Resource Guide to Section 504</a> to assist in the development of appropriate plans.
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Interdisciplinary Connections
<b>Indicators:</b> 8.2.a.1-3 8.2.b.1-6 8.2.c.1-3

Integration of 21 <sup>st</sup> Century Skills
<b>Indicators:</b> CRP1. Act as a responsible and contributing citizen and employee. CRP2. Apply appropriate academic and technical skills. CRP3. Attend to personal health and financial well-being. CRP4. Communicate clearly and effectively and with reason. CRP5. Consider the environmental, social and economic impacts of decisions. CRP6. Demonstrate creativity and innovation. CRP7. Employ valid and reliable research strategies. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. CRP9. Model integrity, ethical leadership and effective management CRP10. Plan education and career paths aligned to personal goals. CRP11. Use technology to enhance productivity. CRP12. Work productively in teams while using cultural global competence.

<b>Unit Title:</b> Unit 4 – Video game theory	
<b>Unit Description:</b> In this unit, students will be studying about the theory and thought process of creating a video game. There are many things to consider when creating a game such as the genre, platform it will be played on, target audience, number of players, goal, etc. These things and more can the difference between a huge success or an embarrassing failure. Students will learn to create a detailed outline for a game before getting into the actual creation of it. This planning and theorizing stage is one of the most crucial when it comes to creating a game.	
<b>Unit Duration:</b> 6 weeks	
<b>Desired Results</b>	
<b>Standard(s):</b> <b>9.3 Career and Technical Education - Arts, A/V Technology, &amp; Communications Career Cluster</b> All students who complete a career and technical education program will acquire academic and technical skills for careers in emerging and established professions that lead to technical skill proficiency, credentials, certificates, licenses, and/or degrees.	
<b>Indicators:</b> 8.1.12.A3,4 8.1.12.D.5 8.1.12.E.1 8.1.12.F.12 9.1.12.A.3 9.1.12.A.6 9.2.12.C.3,6 9.3.12FN-ACT.1-4 CRP1-12	
<b>Understandings:</b> <i>Students will understand that...</i> 1. There are many things that need to be thoroughly thought out when creating a video game. These things include a name, the platform, player modes, goal/objective, genre, audience, game objects, sounds, controls, game flow, levels, etc. 2. Creating a video game can be a lengthy process. Some of the great games we see today takes years of dedication and development. 3. Creating and developing a game requires the ability to work with others. Many publishers are made of multiple teams and departments that work together in order to complete games.	<b>Essential Questions:</b> 1. What is the name of your game? 2. How do you create a name? 3. What platform will be optimal for the game? 4. How many players will the game support? 5. Will there be online multiplayer? 6. What is the goal of the game? 7. What genre is the game? 8. What type of audience does the game target? 9. What kind of objects are in the game? 10. What are the controls? 11. What do players use for controlling the game? 12. How many levels? 13. What is the story/background of the game? 14. How do we market towards the right audience? 15. What will the ESRB rating be?
<b>Assessment Evidence</b>	
<b>Performance Tasks:</b> Flappy Bird Chapter 6 Gameplay and creating experience	<b>Other Evidence:</b> <ul style="list-style-type: none"> <li>• Participation Grade</li> <li>• Check for Understanding</li> <li>• Questioning</li> <li>• Teacher observation</li> </ul>

**Benchmarks:**

Flappy Bird

Chapter 6 Gameplay and creating experience

**Learning Plan****Learning Activities:**

Scratch kevin briggs and youtube channel for sprite animation

**Resources:**

Graphic Design Solutions Text Book, White Board, Projector, Adobe Creative Suite, Printers, Paper, Digital Camera, Memory cards, Memory card readers, Tablets, Scanners, Internet, Font and brush website

**Unit Modifications for Special Population Students****Advanced Learners**

- Provide ample opportunities for creative behavior.
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- Allow time for reflection.
- Resist immediate and constant evaluation.
- Avoid comparisons to other students.

**Struggling Learners**

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- Give short directions.
- Use drill exercises.
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- Use a slow, but natural rate of speech; speak clearly; use shorter sentences; repeat concepts in several ways.
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  - Encourage students to use language to communicate, allowing them to use their native language to ask/answer questions when they are unable to do so in English.
  - Integrate students' cultural background into class discussions.
- Use cooperative learning where students have opportunities to practice expressing ideas without risking language errors in front of the entire class.

**Learners with an IEP**

- Use concrete examples to introduce concepts.
- Make learning activities consistent.
- Use repetition and drills spread over time.

	<ul style="list-style-type: none"> <li>• Provide work folders for daily assignments.</li> <li>• Use behavior management techniques, such as behavior modification, in the area of adaptive behavior.</li> <li>• Break assignments into small segments and assign only one segment at a time.</li> <li>• Demonstrate skills and have students model them.</li> <li>• Encourage students to function independently.</li> <li>• Give students extra time to both ask and answer questions while giving hints to answers.</li> <li>• Give simple directions and read them over with students.</li> </ul> <p>Shorten the number of items on exercises, tests, and quizzes.</p>
<b>Learners with a 504</b>	Refer to page four in the <a href="#">Parent and Educator Resource Guide to Section 504</a> to assist in the development of appropriate plans.

## Interdisciplinary Connections

### Indicators:

8.2.a.1-3  
8.2.b.1-6  
8.2.c.1-3

## Integration of 21<sup>st</sup> Century Skills

### Indicators:

CRP1. Act as a responsible and contributing citizen and employee.  
CRP2. Apply appropriate academic and technical skills.  
CRP3. Attend to personal health and financial well-being.  
CRP4. Communicate clearly and effectively and with reason.  
CRP5. Consider the environmental, social and economic impacts of decisions.  
CRP6. Demonstrate creativity and innovation.  
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CRP9. Model integrity, ethical leadership and effective management  
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CRP11. Use technology to enhance productivity.  
CRP12. Work productively in teams while using cultural global competence.

<b>Unit Title:</b> Unit 5 – Graphics	
<b>Unit Description:</b> Graphics and audio are important aspects of creating an appealing game world. Students should know basic graphic design elements to apply towards creating sprites and backgrounds. This unit will first focus on creating levels, objects, and characters, and then introduce students to the importance of background music and sound effects to create an atmosphere. Students will be able to use programs such as MS Paint, Pixlr, and other graphic design programs. The structural and temporal, and spatial features of the game world will be discussed, along with their importance. Students will learn about audio effects such as voiceovers, sound effects, and music being used in games.	
<b>Unit Duration:</b> 6 weeks	
<b>Desired Results</b>	
<b>Standard(s):</b> <b>9.3 Career and Technical Education - Arts, A/V Technology, &amp; Communications Career Cluster</b> All students who complete a career and technical education program will acquire academic and technical skills for careers in emerging and established professions that lead to technical skill proficiency, credentials, certificates, licenses, and/or degrees.	
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<b>Understandings:</b> <i>Students will understand that...</i>  The process of creating game worlds is often focused on level design.  We can take a physical or “space-time” approach to discuss level design by focusing on how designers construct the architecture and visual of the physical game environment, and how the divide the basic structure of the world into different sections.  Game audio can range from sampled sound to in-game effects.  Audio is important for a games atmosphere and can set and change the mood.	<b>Essential Questions:</b> 1. What forces are generally considered when creating a game? 2. What is the creation of environments, scenarios or missions? 3. What needs to be considered when designing levels? 4. What are the two main issues with game flow? 5. What incorporates the physical environment of the game? 6. What is perspective and why is it importance in level design?
<b>Assessment Evidence</b>	
<b>Performance Tasks:</b> <ul style="list-style-type: none"> <li>• Mario Kart Logo</li> <li>• Toy Story Logo</li> <li>• Double Stroke</li> <li>• BRICK BREAKER LOGO</li> <li>• Audio Lecture and Demos</li> </ul>	<b>Other Evidence:</b> <ul style="list-style-type: none"> <li>• Participation Grade</li> <li>• Check for Understanding</li> <li>• Questioning</li> <li>• Teacher observation</li> </ul>

**Benchmarks:**

- Project (TLA) Rubrics

**Learning Plan****Learning Activities:**

Mario Kart Logo  
Toy Story Logo  
Double Stroke  
BRICK BREAKER LOGO  
Audio Lecture and Demos

**Resources:** Graphic Design Solutions Text Book, White Board, Projector, Adobe Creative Suite, Printers, Paper, Digital Camera, Memory cards, Memory card readers, Tablets, Scanners, Internet, Font and brush website

**Unit Modifications for Special Population Students****Advanced Learners**

- Provide ample opportunities for creative behavior.
- Create assignments that call for original work, independent learning, critical thinking, problem solving, and experimentation.
- Show appreciation for creative efforts
- Respect unusual questions, ideas, and solutions.
- Encourage students to test their ideas.
- Provide opportunities and give credit for self-initiated learning.
- Avoid overly detailed supervision and too much reliance on prescribed curricula.
- Allow time for reflection.
- Resist immediate and constant evaluation.
- Avoid comparisons to other students.

**Struggling Learners**

- Assist students in getting organized.
- Give short directions.
- Use drill exercises.
- Give prompt cues during student performance.
- Let students with poor writing skills use a computer.
- Break assignments into small segments and assign only one segment at a time.
- Demonstrate skills and have students model them.
- Give prompt feedback.
- Use continuous assessment to mark students' daily progress.
- Prepare materials at varying levels of ability.

**English Language Learners**

- Use a slow, but natural rate of speech; speak clearly; use shorter sentences; repeat concepts in several ways.
  - When possible, use pictures, photos, and charts.
  - Corrections should be limited and appropriate. Do not correct grammar or usage errors in front of the class.
  - Give honest praise and positive feedback through your voice tones and visual articulation whenever possible.
  - Encourage students to use language to communicate, allowing them to use their native language to ask/answer questions when they are unable to do so in English.
  - Integrate students' cultural background into class discussions.
- Use cooperative learning where students have opportunities to practice expressing ideas without risking language errors in front of the entire class.

<b>Learners with an IEP</b>	<ul style="list-style-type: none"> <li>• Use concrete examples to introduce concepts.</li> <li>• Make learning activities consistent.</li> <li>• Use repetition and drills spread over time.</li> <li>• Provide work folders for daily assignments.</li> <li>• Use behavior management techniques, such as behavior modification, in the area of adaptive behavior.</li> <li>• Break assignments into small segments and assign only one segment at a time.</li> <li>• Demonstrate skills and have students model them.</li> <li>• Encourage students to function independently.</li> <li>• Give students extra time to both ask and answer questions while giving hints to answers.</li> <li>• Give simple directions and read them over with students.</li> </ul> <p>Shorten the number of items on exercises, tests, and quizzes.</p>
<b>Learners with a 504</b>	Refer to page four in the <a href="#">Parent and Educator Resource Guide to Section 504</a> to assist in the development of appropriate plans.

### Interdisciplinary Connections

#### Indicators:

8.1.a.1-3, 5-9  
8.1.b.1-12  
8.2.a.1-3  
8.2.b.1-6  
8.2.c.1-3

### Integration of 21<sup>st</sup> Century Skills

#### Indicators:

CRP1. Act as a responsible and contributing citizen and employee.  
CRP2. Apply appropriate academic and technical skills.  
CRP3. Attend to personal health and financial well-being.  
CRP4. Communicate clearly and effectively and with reason.  
CRP5. Consider the environmental, social and economic impacts of decisions.  
CRP6. Demonstrate creativity and innovation.  
CRP7. Employ valid and reliable research strategies.  
CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.  
CRP9. Model integrity, ethical leadership and effective management  
CRP10. Plan education and career paths aligned to personal goals.  
CRP11. Use technology to enhance productivity.  
CRP12. Work productively in teams while using cultural global competence.



<b>Unit Title:</b> 6 – creating a game	
<b>Unit Description:</b> This unit will focus on the students learning the scratch software. Students will start by doing basic tutorials that get progressively more difficult. Students will begin by creating an identified game, and then will progressively be able to be creative to apply their own concepts. By the end of this unit, students should be able to encompass all of information in the previous units to create their own, school appropriate video game.	
<b>Unit Duration:</b> 5 weeks	
<b>Desired Results</b>	
<b>Standard(s):</b> <b>9.3 Career and Technical Education - Arts, A/V Technology, &amp; Communications Career Cluster</b> All students who complete a career and technical education program will acquire academic and technical skills for careers in emerging and established professions that lead to technical skill proficiency, credentials, certificates, licenses, and/or degrees.	
<b>Indicators:</b> 8.1.12.A3,4 8.1.12.D.5 8.1.12.E.1 8.1.12.F.12 9.1.12.A.3 9.1.12.A.6 9.2.12.C.3,6 9.3.12FN-ACT.1-4 CRP1-12	
<b>Understandings:</b> <i>Students will understand that...</i> <ul style="list-style-type: none"> <li>• Every computers and systems is different</li> <li>• Color has a psychological effect on the human mind?</li> <li>• They sometimes need to design for the client wants and needs rather than their personal styles?</li> <li>• a graphic design strategy assures unity throughout multiple elements of a design campaign.</li> </ul>	<b>Essential Questions:</b> <ol style="list-style-type: none"> <li>1. What is a Sprite?</li> <li>2. How does a sprite and a character differ?</li> <li>3. What is an object?</li> <li>4. What are the properties of an object?</li> <li>5. What can we associate with or assign to objects?</li> <li>6. How can we upload resources?</li> <li>7. What is a room?</li> <li>8. What do rooms encompass?</li> </ol>
<b>Assessment Evidence</b>	
<b>Performance Tasks:</b> <ul style="list-style-type: none"> <li>• PONG</li> <li>• BRICK BREAKER</li> <li>• Flappy Bird</li> <li>• Space Invaders</li> <li>• Space Invaders 2</li> <li>• Maze Game</li> </ul>	<b>Other Evidence:</b> <ul style="list-style-type: none"> <li>• Participation Grade</li> <li>• Check for Understanding</li> <li>• Questioning</li> <li>• Teacher observation</li> </ul>
<b>Benchmarks:</b> <ul style="list-style-type: none"> <li>• Game Theory wuiz</li> <li>• Project Rubrics</li> </ul>	

## Learning Plan

### Learning Activities:

PONG  
BRICK BREAKER  
Flappy Bird  
Space Invaders  
Space Invaders 2  
Maze Game

**Resources:** Graphic Design Solutions Text Book, White Board, Projector, Adobe Creative Suite, Printers, Paper, Digital Camera, Memory cards, Memory card readers, Tablets, Scanners, Internet, Font and brush website

## Unit Modifications for Special Population Students

<b>Advanced Learners</b>	<ul style="list-style-type: none"> <li>• Provide ample opportunities for creative behavior.</li> <li>• Create assignments that call for original work, independent learning, critical thinking, problem solving, and experimentation.</li> <li>• Show appreciation for creative efforts</li> <li>• Respect unusual questions, ideas, and solutions.</li> <li>• Encourage students to test their ideas.</li> <li>• Provide opportunities and give credit for self-initiated learning.</li> <li>• Avoid overly detailed supervision and too much reliance on prescribed curricula.</li> <li>• Allow time for reflection.</li> <li>• Resist immediate and constant evaluation.</li> <li>• Avoid comparisons to other students.</li> </ul>
<b>Struggling Learners</b>	<ul style="list-style-type: none"> <li>• Assist students in getting organized.</li> <li>• Give short directions.</li> <li>• Use drill exercises.</li> <li>• Give prompt cues during student performance.</li> <li>• Let students with poor writing skills use a computer.</li> <li>• Break assignments into small segments and assign only one segment at a time.</li> <li>• Demonstrate skills and have students model them.</li> <li>• Give prompt feedback.</li> <li>• Use continuous assessment to mark students' daily progress.</li> <li>• Prepare materials at varying levels of ability.</li> </ul>
<b>English Language Learners</b>	<ul style="list-style-type: none"> <li>• Use a slow, but natural rate of speech; speak clearly; use shorter sentences; repeat concepts in several ways.</li> <li>• When possible, use pictures, photos, and charts.</li> <li>• Corrections should be limited and appropriate. Do not correct grammar or usage errors in front of the class.</li> <li>• Give honest praise and positive feedback through your voice tones and visual articulation whenever possible.</li> <li>• Encourage students to use language to communicate, allowing them to use their native language to ask/answer questions when they are unable to do so in English.</li> <li>• Integrate students' cultural background into class discussions.</li> </ul> <p>Use cooperative learning where students have opportunities to practice expressing ideas without risking language errors in front of the entire class.</p>
<b>Learners with an IEP</b>	<ul style="list-style-type: none"> <li>• Use concrete examples to introduce concepts.</li> <li>• Make learning activities consistent.</li> <li>• Use repetition and drills spread over time.</li> <li>• Provide work folders for daily assignments.</li> <li>• Use behavior management techniques, such as behavior modification, in the area of adaptive behavior.</li> <li>• Break assignments into small segments and assign only one segment at a time.</li> <li>• Demonstrate skills and have students model them.</li> <li>• Encourage students to function independently.</li> </ul>

	<ul style="list-style-type: none"> <li>• Give students extra time to both ask and answer questions while giving hints to answers.</li> <li>• Give simple directions and read them over with students.</li> </ul> Shorten the number of items on exercises, tests, and quizzes.
<b>Learners with a 504</b>	Refer to page four in the <a href="#">Parent and Educator Resource Guide to Section 504</a> to assist in the development of appropriate plans.

### Interdisciplinary Connections

#### Indicators:

8.2.a.1-3  
8.2.b.1-6  
8.2.c.1-3

### Integration of 21<sup>st</sup> Century Skills

#### Indicators:

CRP1. Act as a responsible and contributing citizen and employee.  
CRP2. Apply appropriate academic and technical skills.  
CRP3. Attend to personal health and financial well-being.  
CRP4. Communicate clearly and effectively and with reason.  
CRP5. Consider the environmental, social and economic impacts of decisions.  
CRP6. Demonstrate creativity and innovation.  
CRP7. Employ valid and reliable research strategies.  
CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.  
CRP9. Model integrity, ethical leadership and effective management  
CRP10. Plan education and career paths aligned to personal goals.  
CRP11. Use technology to enhance productivity.  
CRP12. Work productively in teams while using cultural global competence.

#### Unit Title: Unit 7 – Printing Systems

#### Unit Description:

This unit has students explore some of the career paths associated with the fields of computer systems, networking, and programming. Areas such as IT specialist, networking administration, and video game will be covered. Students will research different careers and the requirements for the careers. High demand areas such as cyber security and cryptology will also be introduced. Students will have the opportunity to compete in events such as TSA's Career Comparison and other online competitions.

#### Unit Duration: 6 weeks

### Desired Results

#### Standard(s):

#### 9.3 Career and Technical Education - Arts, A/V Technology, & Communications Career Cluster

All students who complete a career and technical education program will acquire academic and technical skills for careers in emerging and established professions that lead to technical skill proficiency, credentials, certificates, licenses, and/or degrees.

#### Indicators:

8.1.12.A3,4  
8.1.12.D.5  
8.1.12.E.1  
8.1.12.F.12  
9.1.12.A.3  
9.1.12.A.6

9.2.12.C.3,6  
9.3.12FN-ACT.1-4  
CRP1-12

**Understandings:**

*Students will understand that...*

1. What opportunities are available in Computer systems and video game design?
2. What are requirements for different careers?

**Essential Questions:**

1. What are the differences between computer science and IT specialist?
2. What specializations are possible in computer science?
3. What is the job outlook for different branches of computer science?
4. What does a video game tester do?
5. What does a network administrator do?
6. What is the median income for different branches of computer science?
7. What companies do you see as being successful in 10 years? Why?

### Assessment Evidence

**Performance Tasks:**

1. Students will find job listings and the requirements for different jobs.
2. Students research brainstorm how much income is required for independent living.
3. Students use classroom computers and an internet connection to access the federal government's Occupational Outlook Handbook.
4. Students go online to access stock quotes

**Other Evidence:**

- Participation Grade
- Check for Understanding
- Questioning
- Teacher observation

**Benchmarks:**

- Project Rubrics

### Learning Plan

**Learning Activities:**

Career path research project

**Resources:** Graphic Design Solutions Text Book, White Board, Projector, Adobe Creative Suite, Printers, Paper, Digital Camera, Memory cards, Memory card readers, Tablets, Scanners, Internet, Font and brush website

## Unit Modifications for Special Population Students

<b>Advanced Learners</b>	<ul style="list-style-type: none"> <li>• Provide ample opportunities for creative behavior.</li> <li>• Create assignments that call for original work, independent learning, critical thinking, problem solving, and experimentation.</li> <li>• Show appreciation for creative efforts</li> <li>• Respect unusual questions, ideas, and solutions.</li> <li>• Encourage students to test their ideas.</li> <li>• Provide opportunities and give credit for self-initiated learning.</li> <li>• Avoid overly detailed supervision and too much reliance on prescribed curricula.</li> <li>• Allow time for reflection.</li> <li>• Resist immediate and constant evaluation.</li> <li>• Avoid comparisons to other students.</li> </ul>
<b>Struggling Learners</b>	<ul style="list-style-type: none"> <li>• Assist students in getting organized.</li> <li>• Give short directions.</li> <li>• Use drill exercises.</li> <li>• Give prompt cues during student performance.</li> <li>• Let students with poor writing skills use a computer.</li> <li>• Break assignments into small segments and assign only one segment at a time.</li> <li>• Demonstrate skills and have students model them.</li> <li>• Give prompt feedback.</li> <li>• Use continuous assessment to mark students' daily progress.</li> <li>• Prepare materials at varying levels of ability.</li> </ul>
<b>English Language Learners</b>	<ul style="list-style-type: none"> <li>• Use a slow, but natural rate of speech; speak clearly; use shorter sentences; repeat concepts in several ways.</li> <li>• When possible, use pictures, photos, and charts.</li> <li>• Corrections should be limited and appropriate. Do not correct grammar or usage errors in front of the class.</li> <li>• Give honest praise and positive feedback through your voice tones and visual articulation whenever possible.</li> <li>• Encourage students to use language to communicate, allowing them to use their native language to ask/answer questions when they are unable to do so in English.</li> <li>• Integrate students' cultural background into class discussions.</li> </ul> <p>Use cooperative learning where students have opportunities to practice expressing ideas without risking language errors in front of the entire class.</p>
<b>Learners with an IEP</b>	<ul style="list-style-type: none"> <li>• Use concrete examples to introduce concepts.</li> <li>• Make learning activities consistent.</li> <li>• Use repetition and drills spread over time.</li> <li>• Provide work folders for daily assignments.</li> <li>• Use behavior management techniques, such as behavior modification, in the area of adaptive behavior.</li> <li>• Break assignments into small segments and assign only one segment at a time.</li> <li>• Demonstrate skills and have students model them.</li> <li>• Encourage students to function independently.</li> <li>• Give students extra time to both ask and answer questions while giving hints to answers.</li> <li>• Give simple directions and read them over with students.</li> </ul> <p>Shorten the number of items on exercises, tests, and quizzes.</p>
<b>Learners with a 504</b>	<p>Refer to page four in the <a href="#">Parent and Educator Resource Guide to Section 504</a> to assist in the development of appropriate plans.</p>

## Interdisciplinary Connections

**Indicators:**

8.1.a.1-3, 5-9  
 8.1.b.1-12  
 8.2.a.1-3  
 8.2.b.1-6  
 8.2.c.1-3

## Integration of 21<sup>st</sup> Century Skills

**Indicators:**

CRP1. Act as a responsible and contributing citizen and employee.  
 CRP2. Apply appropriate academic and technical skills.  
 CRP3. Attend to personal health and financial well-being.  
 CRP4. Communicate clearly and effectively and with reason.  
 CRP5. Consider the environmental, social and economic impacts of decisions.  
 CRP6. Demonstrate creativity and innovation.  
 CRP7. Employ valid and reliable research strategies.  
 CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.  
 CRP9. Model integrity, ethical leadership and effective management  
 CRP10. Plan education and career paths aligned to personal goals.  
 CRP11. Use technology to enhance productivity.  
 CRP12. Work productively in teams while using cultural global competence.

**Unit Title:** Unit 8 – Graphic Design Careers**Unit Description:**

Students will research careers in the graphics industry. Students will identify areas of interest within the graphic design world from advertising, image generation, photography, to teaching. Students will apply concepts used in all of these fields to various projects in an effort of simulating these industries. Students will attempt to connect and form relationships with professionals in these fields to learn the importance of networking and professional relationships. Students will develop professional portfolios that will be a key factor in their college and career opportunities.

**Unit Duration:**

### Desired Results

**Standard(s):****9.3 Career and Technical Education - Arts, A/V Technology, & Communications Career Cluster**

All students who complete a career and technical education program will acquire academic and technical skills for careers in emerging and established professions that lead to technical skill proficiency, credentials, certificates, licenses, and/or degrees.

**Indicators:**

8.1.12.A3,4  
 8.1.12.D.5  
 8.1.12.E.1  
 8.1.12.F.12  
 9.1.12.A.3  
 9.1.12.A.6  
 9.2.12.C.3,6  
 9.3.12FN-ACT.1-4  
 CRP1-12

**Understandings:**

*Students will understand that...*

- No one starts at the top and you must work hard to accomplish your goals in life
- Programs, applications, and processes are consistently changing causing to evolve with the changes around you

**Essential Questions:**

What is the job outlook for the graphic design industry?  
 Why is it essential to be hard working and a self-learner in the graphic industry?  
 What is a professional portfolio?

<ul style="list-style-type: none"> <li>Quality is more important than quantity</li> </ul>	
Assessment Evidence	
<b>Performance Tasks:</b> <ul style="list-style-type: none"> <li>Guest Speakers</li> <li>The Profit</li> <li>Marketing</li> <li>FBLA Competitive Events</li> <li>Independent Contractors (99 Designs)</li> </ul>	<b>Other Evidence:</b> <ul style="list-style-type: none"> <li>Participation Grade</li> <li>Check for Understanding</li> <li>Questioning</li> <li>Teacher observation</li> </ul>
<b>Benchmarks:</b> <ul style="list-style-type: none"> <li>Project Rubrics</li> </ul>	
Learning Plan	
<b>Learning Activities:</b> Guest Speakers The Profit Marketing FBLA Competitive Events Independent Contractors (99 Designs)	
<b>Resources:</b> Graphic Design Solutions Text Book, White Board, Projector, Adobe Creative Suite, Printers, Paper, Digital Camera, Memory cards, Memory card readers, Tablets, Scanners, Internet, Font and brush website	

Unit Modifications for Special Population Students	
<b>Advanced Learners</b>	<ul style="list-style-type: none"> <li>Provide ample opportunities for creative behavior.</li> <li>Create assignments that call for original work, independent learning, critical thinking, problem solving, and experimentation.</li> <li>Show appreciation for creative efforts</li> <li>Respect unusual questions, ideas, and solutions.</li> <li>Encourage students to test their ideas.</li> <li>Provide opportunities and give credit for self-initiated learning.</li> <li>Avoid overly detailed supervision and too much reliance on prescribed curricula.</li> <li>Allow time for reflection.</li> <li>Resist immediate and constant evaluation.</li> <li>Avoid comparisons to other students.</li> </ul>
<b>Struggling Learners</b>	<ul style="list-style-type: none"> <li>Assist students in getting organized.</li> <li>Give short directions.</li> <li>Use drill exercises.</li> <li>Give prompt cues during student performance.</li> <li>Let students with poor writing skills use a computer.</li> <li>Break assignments into small segments and assign only one segment at a time.</li> <li>Demonstrate skills and have students model them.</li> <li>Give prompt feedback.</li> </ul>

	<ul style="list-style-type: none"> <li>• Use continuous assessment to mark students' daily progress.</li> <li>• Prepare materials at varying levels of ability.</li> </ul>
<b>English Language Learners</b>	<ul style="list-style-type: none"> <li>• Use a slow, but natural rate of speech; speak clearly; use shorter sentences; repeat concepts in several ways.</li> <li>• When possible, use pictures, photos, and charts.</li> <li>• Corrections should be limited and appropriate. Do not correct grammar or usage errors in front of the class.</li> <li>• Give honest praise and positive feedback through your voice tones and visual articulation whenever possible.</li> <li>• Encourage students to use language to communicate, allowing them to use their native language to ask/answer questions when they are unable to do so in English.</li> <li>• Integrate students' cultural background into class discussions.</li> <li>• Use cooperative learning where students have opportunities to practice expressing ideas without risking language errors in front of the entire class.</li> </ul>
<b>Learners with an IEP</b>	<ul style="list-style-type: none"> <li>• Use concrete examples to introduce concepts.</li> <li>• Make learning activities consistent.</li> <li>• Use repetition and drills spread over time.</li> <li>• Provide work folders for daily assignments.</li> <li>• Use behavior management techniques, such as behavior modification, in the area of adaptive behavior.</li> <li>• Break assignments into small segments and assign only one segment at a time.</li> <li>• Demonstrate skills and have students model them.</li> <li>• Encourage students to function independently.</li> <li>• Give students extra time to both ask and answer questions while giving hints to answers.</li> <li>• Give simple directions and read them over with students.</li> <li>• Shorten the number of items on exercises, tests, and quizzes.</li> </ul>
<b>Learners with a 504</b>	Refer to page four in the <a href="#">Parent and Educator Resource Guide to Section 504</a> to assist in the development of appropriate plans.

## Interdisciplinary Connections

### Indicators:

8.2.a.1-3  
8.2.b.1-6  
8.2.c.1-3

## Integration of 21<sup>st</sup> Century Skills

### Indicators:

CRP1. Act as a responsible and contributing citizen and employee.  
CRP2. Apply appropriate academic and technical skills.  
CRP3. Attend to personal health and financial well-being.  
CRP4. Communicate clearly and effectively and with reason.  
CRP5. Consider the environmental, social and economic impacts of decisions.  
CRP6. Demonstrate creativity and innovation.  
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CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.  
CRP9. Model integrity, ethical leadership and effective management  
CRP10. Plan education and career paths aligned to personal goals.  
CRP11. Use technology to enhance productivity.  
CRP12. Work productively in teams while using cultural global competence.