**Enduring Understandings / Big Ideas:** Computer skills are critical for success in the 21st century. All careers will utilize computers and technology applications to enhance efficiency and productivity in the 21st century.

**Essential Questions:** Explain how computer technology is used in a variety of careers and educational applications. Why is it important to be able to use and manipulate computer software, hardware, and networks for education and work applications?

<table>
<thead>
<tr>
<th>Learning Competencies - What the students will know and be able to do upon completion of the unit</th>
<th>Supportive Learning Activities</th>
<th>Assessments</th>
<th>Resources</th>
<th>PDE Academic Standards/ Common Core Standards</th>
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</thead>
</table>
| Students will be able to identify and explain important 21st century skills. | **Teaching Strategies - Large Group Demos**  
Small Group Instruction  
Individualized Instruction  
Multimedia Presentation  
Hands-On Activities  
Cooperative Learning | **Formative:** Check for understanding questions will be utilized during large group instruction.  
Students will be asked open-ended questions during small group and individualized instruction to check for understanding. | **Teacher Resources –**  
Tech Ed Website  
Tech Lab Comp. Network  
Tech Lab Tools and Materials  
Multimedia  
Problem Solving Design Brief  
Internet learning sites | See Addendum for details  
Science and Technology and Engineering  
3.4.6.D2  
3.4.6.E4  
3.4.7.D2 |
| Students will apply problem solving, teamwork, and collaboration to solve a design challenge. | **Learning Activities – Large Group Instruction**  
Students will participate in presentations and discussions covering 21st century skills.  
**Lab Activities**  
Students will work individually and in teams to complete computer assignments that focus on fundamental skills.  
**Design Challenge**  
Students will complete a design challenge using 21st century skills.  
- Aerospace  
Engineering - Flight | **Summative:** Students will submit computer assignments demonstrating mastery of technological literacy skills.  
Students will complete and submit a solution to a design challenge that utilizes 21st century skills.  
Wida Access Placement Test (W-APT) | **Instructional Materials**  
- Handouts  
- Displays  
- Samples  
- Online resources  
**Tech Lab Equipment**  
- Computer Network  
- Student workstations  
- Computer software  
- External Devices | **Reading, Writing, Speaking**  
1.8.8.B  
1.8.8.C  
**Common Core Standards**  
RST.6-8.3  
RST.6-8.4  
RST.6-8.7  
SL.7.1  
SL.7.4  
SL.7.5 |
| Students will utilize basic technological literacy skills to utilize the school district computer network, hardware, software, and student work stations to complete assignments. | **Supplemental Resources:**  
- Alternative Assessment  
- ESL staff  
- Bilingual dictionaries  
**ELP:**  
http://www.cal.org/siop: Fifty Strategies for Teaching; English Language Learners, | **Every Teacher Teaches ESL**  
**ELP Standard 1:** English Language Learners communicate in English for social and instructional purposes within the school setting.  
**ELP Standard 2:** English Language Learners communicate... |
<table>
<thead>
<tr>
<th>Challenge Tech Report</th>
<th>2nd edition; Adrienne Herrell, Michael Jordan; (Merrill/Prentice Hall, 2003)</th>
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<td>• Engineering Structures - Truss Design Challenge Tech Report</td>
<td>information, ideas, and concepts necessary for academic success in the content area of Language Arts.</td>
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<tr>
<td>• Engineering Structures – Concrete Beam Design Challenge Presentation</td>
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<td>• Student Biography Design Challenge</td>
<td></td>
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<td>• Poster Design Challenge</td>
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