

## Lesson Plan: Virtual Lesson Course

<b>Lesson Title</b>	Technology Inventions
<b>Subject grade level state county</b>	Technology Education Grade 9 Maryland Prince Georges County
<b>Concept/ Topic</b>	The students will be afforded an opportunity to research information on the internet to learn about an invention. Students will then create a PowerPoint slide presentation about the invention to offer an idea of how different inventions from different countries and different eras have impacted our communities.
<b>Length of Lesson:</b>	Three 45 minutes Technology Education Periods
<b>Standards Addressed</b>	<p>Relevant state standard for the grade level intended for this module comes from Maryland State Department of education (2005). Grade 9 Technology Education Standards. The Curriculum Framework for Grade 9 states the learning objectives and standards for the first unit in the Technology Education curriculum. The following are the objectives and standards that will taught in this lesson:</p> <ul style="list-style-type: none"> <li>• Develop an understanding of the cultural, social, economic, and political effects of technology. (ITEA, STL 4)</li> <li>• Develop an understanding of the effects of technology on the environment. (ITEA, STL 5)</li> <li>• Develop an understanding of the role of society in the development and use of technology. (ITEA, STL 6)</li> <li>• Develop an understanding of technology on history. (ITEA, STL 7)</li> <li>• Develop an understanding of troubleshooting, research and development, invention and innovation, and experimentation in problem solving. (ITEA, STL 10)</li> <li>• Develop an understanding of the nature, characteristics and scope of technology. (ITEA, STL 1)</li> <li>• Develop an understanding of the relationships among technologies and the connections between technology and other fields of study. (ITEA, STL 3)</li> </ul>
<b>Lesson Goals:</b>	The goal of the lesson is help students to develop a deeper understanding of how technological inventions have impacted us globally, and to extend their knowledge and skills by using internet technology to conduct research. Students will also learn to use PowerPoint technology to express what they

	learned about their invention to their classmates.
<b>Objectives:</b>	<p>Students will:</p> <ul style="list-style-type: none"> <li>• Examine how inventions of the past have impacted their own lives and the community</li> <li>• Synthesize researched information into a multimedia presentation such as PowerPoint slide show, or slideshare, and develop presentation skills by presenting the slide show to the class.</li> </ul>
<b>Introduction</b>	<p>The teacher will show a PowerPoint slideshow with some inventions such as, a sawmill circular saw, a telephone, and motorcar. The teacher will ask students if they know the names of the people who invented these technologies. As students consult each other and correspond in naming the respective inventors, teacher will show slides with the names of the inventors and ask students to match the inventor with the invention (i.e. Carl Benz, Alexander Graham Bell, Tabitha Babbitt) Teacher will explain that students will be required to select an invention to research, and then fill out an invention research organizer with the information. This information will be used to create a PowerPoint slide presentation to share with your global network partner.</p>
<b>Step-By-Step Procedures</b>	<p>Session 1</p> <ul style="list-style-type: none"> <li>• Teacher will place students in small groups (2 students in each group)</li> <li>• Each group will select an invention from a list provided to begin the research on the internet.</li> <li>• Students in each group will collaborate to research using pre-selected web addresses, and downloadable instruction sheet defining their task, and an evaluation form.</li> <li>• Teacher will provide an Invention Instruction Sheet, Evaluation forms, the PowerPoint Rubric, and Inventions Wiki Checklist and explain to students that as they are working, they should refer to the evaluation forms to ensure that they are meeting the project's requirements.</li> <li>• Each group will now work together to read and record information about the invention and the inventor, download pictures and videos (if possible) to include in their presentations. Teacher will remind students that they need to collect information on the inventor, as well as information about how his or her invention used technology to change the world.</li> <li>• Groups will need to be prepared to share the</li> </ul>

	<p>information they have gathered from their readings in the conference area.</p> <p>Session 2</p> <ul style="list-style-type: none"> <li>• Students will be instructed to share their findings within their group. After these presentations, the group should then discuss, compile, and create a working chart to display the most important findings. The inventions research chart will include information about the name and description of the invention, the name of the inventor(s), date or time period of the invention, place where the invention was accomplished, The reason/purpose of the invention, impact of the invention in a particular field (science, construction, etc.), impact of the invention in your personal life (job, education, family), and impact of the invention globally.</li> <li>• Students will be instructed to review Inventors PowerPoint Instruction Sheet with students and then use the criteria to create their individual PowerPoint slide show.</li> <li>• Students will be Allowed time to work on their PowerPoint slide presentation</li> </ul> <p>Session 3</p> <ul style="list-style-type: none"> <li>• Each student will be instructed to present their research on their assigned selected invention by uploading PowerPoint slide show. Other students will be prompted to write questions they have about the invention from the presentation to ask as they provide peer-review and feedback to each student.</li> <li>• A whole-class discussion and peer feedback on the presentations will continue.</li> </ul> <p>Session 4</p> <ul style="list-style-type: none"> <li>• After the presentations, teacher will Explain to students that they should revise their PowerPoint slide presentation and as well as the recorded information to create their individual wiki page.</li> <li>• Students will now use the Inventors Research Chart as a guide to prepare their individual wiki post.</li> <li>• The teacher will instruct students to use the graphic organizer for to organize their information.</li> </ul>
<b>Technology</b>	<ul style="list-style-type: none"> <li>• The Internet to locate facts and images on their</li> </ul>

	<p>invention</p> <ul style="list-style-type: none"> <li>• Microsoft Word to type their information</li> <li>• Microsoft PowerPoint to prepare their presentations.</li> </ul>
<b>Resources/ Materials</b>	<ul style="list-style-type: none"> <li>• Chart paper with names of inventions</li> <li>• Inventions research chart</li> <li>• Computers</li> <li>• Computer Printer</li> <li>• Student usernames and passwords</li> </ul>
<b>Related URLs:</b>	<p><a href="http://www.ideafinder.com/history/inventions/telephone.htm">http://www.ideafinder.com/history/inventions/telephone.htm</a>  <a href="http://www.carhistory4u.com/">http://www.carhistory4u.com/</a>  <a href="http://www.ideafinder.com/history/inventions/automobile.htm">http://www.ideafinder.com/history/inventions/automobile.htm</a>  <a href="http://www.asktooltalk.com/articles/toolhistory/divide.php">http://www.asktooltalk.com/articles/toolhistory/divide.php</a>  <a href="http://www.actden.com/pp/index.htm">http://www.actden.com/pp/index.htm</a></p>
<b>Assessment Based on Objectives</b>	<p>At the end of the lesson, the teacher will grade the PowerPoint presentations using the rubric as well as their graphic organizer using a rubric. Please see the rubric on the website.</p>
<b>Extensions</b>	<ul style="list-style-type: none"> <li>• Have students locate and explore other websites on these inventions to find additional information.</li> <li>• Students can do interviews of technology experts as well as additional resources to learn more about these inventions/inventors.</li> <li>• Follow the same lesson format with three different inventions. This time after the group presentations in Session 3, allow students to work individually, with a partner, or with their investigational groups to use the Venn diagram.</li> <li>• The students will be required to write a summary and complete a self-reflection sheet of what they did.</li> </ul>
<b>Online Classroom Management</b>	<p>The teacher needs to make sure all of the objective and expectations clear and all materials as well as technology resources are available. Constant monitoring of each group's activities by accessing their work and communication around is essential to demonstrate online presence among the students as they work. Students will also be allowed to collaborate in the many different activities, not designed to keep them busy, but to keep them excited and engaged. Students who requests for assistance will be facilitated as expeditiously as possible, or directed to another source where they may be best assisted.</p>

<p><b>Accommodations (special needs/ gifted &amp; talented)</b></p>	<p>Individualized accommodations will be put into place to help learners at risk and students with special needs to have success in their IEP or academic program.</p> <ul style="list-style-type: none"> <li>• Initially, the teacher will group students based on interest and ability to ensure groups are working on inventions to support each other's experiences weaknesses.</li> <li>• I will provide audio and written notes to help students with disabilities.</li> <li>• I will also make use of Graphic Organizers</li> <li>• I will allow multiple means of expression (PowerPoint, slideshare, VoiceThread and utube technology for gifted and talented students)</li> </ul>
<p><b>Comments / Notes:</b></p>	<p>The Technology Education computer lab is fully equipped for a project of this nature. Students are also encouraged to work on the project after school by using the computers in the media center. Students returning from absences will be accommodated during lunch break and after school.</p>