CCPS Collier County Public Schools
Curriculum and Instruction

Course: Oakridge Middle School - PLTW Engineering: Automation & Robotics
Content Support/Contact: Carlos Artime, Carlos.Artime@collierschools.com; Lisa Souza Lisa.Souza@collierschools.com
Technology Support/Content: Lisa Souza Lisa.Souza@collierschools.com

Week 1	**Day 1**	**Day 2**	**Day 3**	**Day 4**	**Day 5**
Lesson/Topic:	**Robot Presentation**	**Robot Presentation**	**Robot Presentation**	**Robot Presentation**	**Reflection: Robot Presentation**
Resource:	GCFLearnFree.org PowerPoint Quick Tips: https://edu.gcfglobal.org/en/powerpoint-tips/GCFLearnFree.org PowerPoint Lessons: https://edu.gcfglobal.org/en/powerpoint2016/			GCFLearnFree.org Simples Rules for a Better PowerPoint: https://edu.gcfglobal.org/en/powerpoint-tips/simple-rules-for-better-powerpoint-presentations/1/	
Task: Robots are powerful machines that give us access to places that are otherwise inaccessible to humans and perform tasks that are dangerous or tedious. In this activity you will explore the field of robotics through your own research.	• For this project you will research and create a PowerPoint presentation with information about the use of your chosen robot in today's society. • Research and choose a robot that is currently used in today's society. • Create a 11 slide PowerPoint with the following titles on each slide: – **Title Slide** – **Function** – **Work Environment** – **Tasks** – **Education & Learning** – **Sensors**	• On each slide listed below answer the questions provided. • Do not copy/paste from the internet, provide the information in condensed bulleted format (not in paragraphs). • All content must be in your own words. – **Title Slide** ○ What robot you will be creating the presentation about, your first & last name, school, date and teacher – **Function** ○ What task does the robot perform? What human function or	• On each slide listed below answer the questions provided. • Do not copy/paste from the internet, provide the information in condensed bulleted format (not in paragraphs). • All content must be in your own words. – **Advantages & Disadvantages** ○ Name some advantages and disadvantages of using a robot to complete this task. – **Impact** ○ Describe the impact that this robot has had or could have on	• Finalize your PowerPoint presentation by formatting it and adding pictures and graphics. • Review your slides and try to follow the 5/5/5 rule by keeping the text on each slide short and to the point. Use no more than five words per line of text, five lines of text per slide, or five text-heavy slides in a row. • Choose readable colors and fonts • Use graphics and animations but don't overload your presentation	• On a separate Microsoft Word document, write a reflection about this activity. • Include the following information: – What was the hardest part of creating the presentation? – What was something new that you learned about this robot or robots in general that you did not know before this project? – Do you think your robot will have or has a significant impact on humans? Why or why not? – Is there a function in today's society that you

	– **Advantages & Disadvantages** – **Impact** – **Job & Career Creation** – **Future Uses** – **Awareness**	task does this robot simulate? – **Work Environment** ○ Where is the robot used? What is its work envelope (how many degrees of freedom or flexible joints does it have)? – **Tasks** ○ Is the robotic end effector multi-functional? If so, what other tasks can it perform? – **Education & Learning** ○ How is the robot taught to perform its task? – **Sensors** ○ What sensors does the robot have and how does the robot use these sensors?	its intended audience. – **Job & Career Creation** ○ What type of jobs/careers did the creation of this robot provide for employment for people? – **Future Uses** ○ Predict and explain how this robot may be altered to perform more or different tasks in the future – **Awareness** ○ What concerns do you have about the future use of robots in society? What do you think about "giving up" control to a machine?		think could benefit if a robot was created to meet that need? Explain how the robot would function.
Recommended Duration:	50 minutes	50 minutes	50 minutes	50 minutes	50 minutes

Week 2	**Day 6**	**Day 7**	**Day 8**	**Day 9**	**Day 10**
Resource:	Occupational Outlook Handbook: https://www.bls.gov/ooh/ Florida Shines: https://www.floridashines.org/ Engineer Girl: https://www.engineergirl.org/ Career Videos/Career One Stop: https://www.careeronestop.org/Videos/video-library.aspx eGFI Dream up the Future: http://egfi-k12.org/	Adobe Spark Brochure Templates: https://spark.adobe.com/templates/brochures/ Microsoft Office Brochure Templates: https://templates.office.com/en-us/brochures			

	Career Cornerstone: https://www.careercornerstone.org/fields.htm O-NET Online: https://www.onetonline.org/ Careers/College Grad: https://collegegrad.com/careers				
Lesson/Topic:	**Engineering as A Career Brochure**	**Engineering as A Career Brochure**	**Engineering as A Career Brochure**	**Engineering as A Career Brochure**	**Reflection: Engineering as A Career Brochure**
Task: Engineers need to continually adapt as new technologies are developed. Some of the careers that you will consider after you finish school don't exist today. As new technologies are developed, new careers are created, and engineers with new skills are needed. In this activity, you will investigate an engineering career.	• For this project you will research and create a brochure that highlights the responsibilities, salary range, best location, education requirements, and future demands for the engineering career of your choice. • Think about as many types of engineers as you can and write them down on a list. Then use Google to identify some other engineering careers that you may be interested in learning more about and add them to your list. • From the careers listed, select an engineering career that you want to learn more about. • Research your chosen engineering career and take notes about: – What type of work do people in this career perform? – What is the current salary of this occupation? – What are the working conditions?	• Finalize all of your research from the day before • Create a tri-fold brochure. Consider using Microsoft Publisher, Microsoft Word, Adobe Spark or another software or online platform that you are familiar with. • On your brochure you must include all of the following information: – What type of work do people in this career perform? – What is the current salary of this occupation? – What are the working conditions? ○ Inside/outside? ○ Office/plant/lab? – What are the major job responsibilities? – Is there a demand for this job in the future? – What kind of education is needed for this type of work?	• Continue working on your brochure, remember you must include all of the following information: – What type of work do people in this career perform? – What is the current salary of this occupation? – What are the working conditions? ○ Inside/outside? ○ Office/plant/lab? – What are the major job responsibilities? – Is there a demand for this job in the future? – What kind of education is needed for this type of work?	• Finalize your Brochure by formatting it and adding pictures and graphics. • Tips for formatting your brochure: ○ Be creative and unique ○ Design for your audience/readers ○ Choose fonts and colors that are easy to read ○ Answer all of the questions but do not provide too much information ○ Use logical sections, concise and compelling headlines, bulleted lists to highlight main points, and short text passages ○ Add compelling photos and graphics	• On a separate Microsoft Word document, write a reflection about this activity. • Include the following information: – What was the hardest part of creating the brochure? – What was something new that you learned about this engineering career that you did not know before this project? – After researching this type of engineering, is it something you may pursue as a career in the future? Why or why not? – What impact do you think engineers will have on your future? – One of the oldest engineering categories is Civil engineering, what do you think is the newest?

	○ Inside/outside? ○ Office/plant/lab? – What are the major job responsibilities? – Is there a demand for this job in the future? – What kind of education is needed for this type of work?				
Recommended Duration:	50 minutes	50 minutes	50 minutes	50 minutes	50 minutes