

Diocese of Wheeling-Charleston

Unit Planner

Name of Teacher: Amy Y Parent		Grade Level: 2nd		
Subject Area: Science		Cross Curricular Opportunities: language, religion,		
Unit Title: Robotics Mini Unit for Scholastics Contest		Estimated Duration of Unit: 3 weeks		
Overview of Unit: The children will create a robot to help solve a real world problem. We will discuss robotics and engineering as well as what real world problems we have today that could be helped by a robot.				
Forms of Text (nonfiction/fiction): Robots of the Future: Science and Engineering Contest Boy + Bot by Ame Dyckman A Curious Robot on Mars! by James Duffett-Smith		Teaching Strategies:technology (videos and websites), questioning, experimentation, investigation, group work, individual, think-pair-share,		
Catholic Identity Connections: Helping solve world problems and protecting the blessing of God's gifts				
Assessment (authentic/published - summative/formative): Summative and formative. Students will be required to complete an outline which is provided, create a rough draft and final copy of paragraph of plan of action to solve world problem. Students will create picture of robot and label details.				
Standard Number	Standards	Description of Activity	Resources	Date of Completion
K-2-ETS1-1.	Engineering, Technology, and Applications of Science	Introduce robotics and engineering: what are definitions? Make list of what they think robots do? Think-pair-share then make collaborative list. Both 2nd grades were combined. Intro contest: reading description and answering basic questions. Show timeline of events for unit.	Scholastic Robots of the Future; Science and Engineering Contest http://www.scholastic.com/robots-of-the-future/contest/	wk 1, day 1
K-2-ETS1-1.	Engineering, Technology, and Applications of Science	Video exploration of what robots do. Watch a videos of robots in actions and the creators of robots to inform and lead to a wider view of what robots can do to help our world. Discuss the engineers who make them and how they need to be informed of the job the robot will need to do in order to build it correctly.	https://www.youtube.com/watch?v=m0TVqtE7lyo	wk 1, day 2
ELA2SLC13.1 ELA2SLC13.3 SJ.2RLA.6	Speaking and Listening Plus 1	Review and discuss the reason for the contest. Discuss what real world problems there are that we may be able to help with the use of a robot. Remind them that all things God made are good and deserve conserving. Brainstorming to find reasons we would use robots in	Smartboard Brainstorming map	wk 1, day 3

		everyday life and how they could help others using Smartboard to document ideas.		
ELA2LC17.3	Language	Discuss and brainstorm part of robots that can be useful. Remind them of the video and the real life problems discussed and documented from day before. Create list on Smartboard while children brainstorm ideas.	smartboard, list of real life problems from day before	wk 1, day 4
ELA2SLC13.1 ELA2SLC13.3	Speaking and Listening	Compare and contrast what people thought they would be doing with and using robots for and what they are now. Discuss robots in our homes like the ones used in the videos and the video on day one.	https://youtu.be/e8SC6bny1SA https://youtu.be/9wSiodbKonc	wk 2, day 1
ELA.2LC17.3 SJ.2RLA.6	Language Plus 1	Review and pick one idea from brainstorming sessions, start discussion of outline/thinking map for robot and ideas for paragraph: read parts carefully for full understanding	Thinking map from contest Smartboard	wk 2, day 2
ELA2.SLC13.1 ELA2.SLC13.3	Speaking and Listening	Discuss outline/thinking map begin to fill out outline, think pair and share halfway through for idea sparking and for filling in more complete details	Thinking map from contest Smartboard	wk 2, day 3
ELA2.WC9.2 ELA2.WC10.2 SJ2.RLA.12 SJ2.RLA.18	Writing Language Plus 1	Using outline/thinking map complete rough draft of paragraph, have stop and read moments to connect to writing, read to others when finished to start editing process		wk 2, day 4
K-2-ETS1-2. ELA.2LC15.1 ELA.2LC15.2	Engineering, Technology, and Applications of Science Language	Edit with partners and teachers and begin to write final draft, draw picture to show robot and label the parts as directed on contest	Contest form	wk 3, day 1
K-2-ETS1-2	Engineering, Technology, and Applications of Science	Complete contest final draft and color pictures to submit		wk 3, day 2
K-2-ETS1-2	Engineering, Technology, and Applications of Science	As final (fun project) use recycled materials brought in by the children to make a robot with a group of children. Work in teams (mixed teams with the other 2nd grade for more collaboration between grades). Talk about creations with others and share ideas and tools.	recycled materials parent helpers	wk 3, day 3
K-2-ETS1-1.	Engineering, Technology, and Applications of Science	Watch videos of the creation of robots and their uses for fun last day.	http://www.sciencekids.co.nz/videos/robots.html	wk 4, day 4
Differentiated Instruction Opportunities/Overview: During the think-pair-share, buddy the children who are in need of help with ones that can help with kindness and empathy. When organizing outline, work in teams or have those in need work with a small group with the teacher. Those that are advanced must have more details and more details in their writing. When writing, give word bank to this in need and help self edit and team with someone who will partner edit correctly and with empathy. Write the description of the robot for tem as they dictate. WRite on the small lines for them if needed.				
Cross Curricular Opportunities level:				
Standard Number	Standards	Description of Activity	Resources	Date
		Writing: see above plans		
		Religion: see above plans		

Common Core Checklist	
Writing	
X	Paragraph
	Essay (narratives, fairy tales, realistic fiction)
	Summary
	Research
	Detailed answers (text supported)
X	Notes (note taking skills, outlines)
X	Complete sentences
Reading	
X	Informational text
	Lexile
	Complex literature
X	Speaking
X	Listening
X	Varied strategies and instructional methods
X	Critical thinking in whole class discussion
X	Student led activities
	common core standards (literature circles)
Technology	
X	Smart board
X	Computers
	iPads/Chrome Notebooks
X	PowerPoint, Elmo etc.
Differentiated Instruction	
X	Used multiple resources
	Domain Vocabulary
X	Cross-Curricular

X	Collaborative engagement (meaningful feedback)
x	Higher level learning and teaching
Assessment	
X	Project based
x	Writing prompt
	Portfolio
X	Observation
	Quiz
	Technology based
	Test
	Student created test
X	Presentation
	Journal
X	Think, pair, share
	Summary
X	Oral questioning
	Analogy
	PowerPoint, or movie maker
Authenticity	
X	Various activities
X	Inquiry, research and evidence
	Evidence of time management and planning
X	Problem solving strategies
Summary of Unit:	
<p>The children will be introduced to robotics and engineering through a video from iRobot. They present a number of robots and how they help in the real world. We then discuss the problems the robots seen helped with and come up with a collaborative list of real world problems we could help solve. The children work together to come up with a list of attachments or devices the robots need to do some of the given tasks. We read about robots and how they help and listen to another video of how robots are made. The contest is presented and the parts are described with a time line presented. The children create an outline with steps and ideas. The ideas are narrowed down and one specific real world problem is chosen. Rough drafts are made of the robot as well as they written description.</p>	

Student editing is completed with partners as well as teacher led editing. Final contest forms are completed and sent into the contest by the teacher with parental permission. As an ending to the unit, the children will create a robot out of recycled materials to be on display at school.