Old Mill Elementary – STEAM Lab – Cox

Grade Levels: 3, 5

Rotation C – 11/9-11/13 – Osborne & Lumpkins
*Wednesday 11/ 11 – No 5th grade due to Veteran's Day Tribute Concert

Overview
Unit Title: The Superhero Journey and Making the World a Better Place – **INNOVATION + Digital Citizenship**
Target Grade Levels: Intermediate (3-5)
Big Ideas: A successful maker/innovator/change agent/superhero has qualities that contribute to his or her success. Digital Citizenship means being safe, responsible, respectful and knowledgeable while using technology. A good Digital Citizen knows how to type so he or she can communicate.
Unit Summary: Innovators help make the world a better place. We try to understand people, identify problems and create solutions. Good Digital Citizens know how to be leaders online, including communicating correctly.
Essential Questions: What value does imaginative and fearless thinking add to something I create or something I do? How does engaging in making and creating make me a change agent? How can I learn to communicate effectively online? (grades 3-5 via Typing Agent) **Interdisciplinary connections:** **Science –** Invention, Manufacturing, Ingenuity, Human effect on environment **Technology –** Use of tools, construction, typing/word processing, Digital Citizenship **Engineering –** Design process, construction **Arts –** Invention, Creativity, Imagination **Math –** Measurement, Problem Solving, Perseverance
Standards Addressed
Technology/21st Century Skills: Creativity and Innovation, Critical Thinking, Problem Solving and Decision Making, Typing/Wordprocessing, Digital Citizenship **Engineering:** 3-5-ETS1-1. – Define a simple design problem reflecting a need or want that includes specified criteria for success and constraints on materials, time, or cost. 3-5-ETS1-2. – Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. 3-5-ETS1-3. – Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. **Arts:** AH-I-SA-U-2 – Understand the principles of design and the elements of visual arts. AH-I-SA-U-4 – Understand that existing and emerging technologies can inspire new applications of structural components. RI.5.9 – Integrate information from several texts in order to write or speak about a subject knowledgeably. W.5.9 – Draw evidence from literary or informational texts to support analysis, reflection, and research. **Math:**

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CCSS.Math.Practice.MP2 – Reason abstractly and quantitatively.

CCSS.Math.Practice.MP4 – Model with mathematics.

CCSS.Math.Practice.MP5 – Use appropriate tools strategically.

Learning Targets	Learning Activities/Instructional Strategies	Evaluation/Assessment
I CAN… …define fortitude. …brainstorm. …analyze, by citing evidence, what qualities makers and innovators have that contribute to success. …work towards completing engineering and design challenges demonstrating my ability to think creatively and showing my prowess as a problem solver. ...use the home row keys – ASDFGHJKL; - and correct finger placement to type at 90% accuracy and at least 20 wpm. (Grades 3-5 only) **Critical Vocabulary** Brainstorm SCAMPERR technique Imagination Home Row (Grades 3-5) **Accommodations/Modifications**** Word Processing (Grades 3-5) Visual Timer Redirection Corrective Feedback Preferential Seating	**Daily Structure:** Superhero Briefing (10 minutes, whole group, direct instruction) Training Academy (40 minutes, independent, small group practice) Reflection (10 minutes, whole group, independent reflection) Superhero Journey – What is a superhero? Discuss FORTITUDE as one of four core forces that make superhero and challenge to obtain skills to "level up" in STEAM. Character Kaleidoscope Superhero uniform – The superhero uniform expresses our unique nature and unites us in purpose. Each uniform is handcrafted, designed with a superhero symbol that represents what each superhero stands for. And each cape calls us into the myth of the hero when it communicates to others that we are here to serve. Superpowers *What makes someone creative?* *What qualities do makers and innovators have that contribute to their successes? How do makers and innovators overcome failure?* *What is Brainstorming?* Brainstorming is a process of spontaneous thinking used by an individual or by a group of people to generate numerous alternative ideas while deferring judgment. Introduced by Alex Osborn in his book, "Applied Imagination," brainstorming is the crux of each of the stages of all problem-solving methods. Review Rules for Brainstorming: No Criticism Work for Quantity Hitchhiking Welcome	• Anecdotal notes • Teacher observation • Discovery Journal • Daily Student Reflections • Self-Assessment • DIY Projects • DIY Products **Intervention Resources** Brainpop.com – "Imagination" Selective Attention Test **Questioning** How have today's experiences inspired me? What was my biggest success today? What was my biggest failure today? How would I reteach what I learned? How is what I created… …beautiful? …thoughtful? …personally meaningful?

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Model targeted skills/direction Structured transition w/advanced warning Frequent and positive feedback	Freewheeling Encouraged Options: A: Engineering Design Challenge centers – Group 1- Identify something to improve and brainstorm a solution Group 2 – Design the Ultimate Summer Camp Group 3 – Re-Design Your School Group 4 – Build 3 Quick Prototypes Group 5 – Make a Life Hack Group 6 – Invent a Phobia and Design a Solution B: Design Thinking Challenges – Extraordinaire Cards Typing Agent Daily – 20 minutes/week required **NO HOMEWORK**	…sophisticated? …shareable? …moving? …enduring?

Teacher Reflection/Notes					
Higher Order Thinking	Scaffolding	21st C. Skills	Learning Styles	Student Reflection	Project-based
Student Choice	Global Perspective	Interdisciplinary	Student-Centered	Critical Thinking	Differentiation

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