**GENERAL INFORMATION:** Grade Level(s): 4-9     Lesson Plan Title: Design for a Need     Curriculum Area: Computer Programming

**BENCHMARKS OR LEARNING OBJECTIVES**:

*AASL Skills Indicator 1.1.1: Follow an inquiry-based process in seeking knowledge in curricular subjects, and make real-world connection for using this process in own life.*
Grade 5 Benchmark: Generate questions and practice different ways to locate and evaluate sources that provide needed information.
Grade 8 Benchmark: Use a critical-thinking process that involves asking questions, investigating the answers, and developing new understandings for personal or academic independent-learning activities.
*AASL Skills Indicator 1.1.2: Use prior background knowledge as context for new learning.*
Grade 5 Benchmark: Predict answers to inquiry questions based on background knowledge and beginning observations or experiences.
Grade 8 Benchmark: Observe and analyze an experience, demonstration, or source that introduces a topic, problem, or question to gather background information.
*AASL Skills Indicator 1.1.3*: *Develop and refine a range of questions to frame the search for new understanding.*
Grade 5 Benchmark: With guidance formulate questions about the topic.
Grade 8 Benchmark: Determine what information is needed to support the investigation and answer the questions.
*AASL Skills Indicator 1.1.9*: Collaborate with others to broaden and deepen understanding.
Grade 5 Benchmark: Work in teams to produce original works or solve problems.
Grade 8 Benchmark: Work in self-managed teams to understand concepts and solve problems.
*AASL Skills Indicator 2.1.6*: *Use the writing process, media and visual literacy, and technology skills to create products that express new understandings.*
Grade 5 Benchmark: Experiment with text and visual media to create products.
Grade 8 Benchmark: Create products that incorporate writing, visuals, and other forms of media to convey message and main points.

**ASSESSMENT METHODS & CRITERIA**:
Students will work with a group to identify something that there is a need for. They will work together to come up with an idea for a website or app to solve this problem/need. Students will consider all variables and make a comprehensive document explaining how the website/app will work. Students will then make a presentation of this product and plan.

**RESOURCES AND OTHER LEARNING SUPPORT MATERIALS:**
- Computer or tablet
- Internet access
  - PowerPoint or Google Slides

**INSTRUCTION AND ACTIVITIES:**

1. Teacher will begin by declaring that he/she is hungry and in need of food, but has no car to use. What should be done?
2. Students will respond by naming numerous ways to solve this problem. Specifically pull out/list the ideas connected to apps or websites.
3. Discuss an app like UberEats and break apart the inner workings of the app.
    a. How does one use it?
    b. Where do the food options come from?
    c. How does one pay?
    d. How does the food get delivered?
    e. How long will food take to arrive?
    f. If something's missing, what do you do?
    g. Is tip included?
4. As a class, brainstorm other problems or needs in daily life (things that would make life simpler). List these ideas.
5. Students will then work in pairs or groups and will be instructed to choose one of the items listed, or come up with their own.
6. Together they will analyze the problem and develop an idea for a website or app to solve it.
7. They will identify all of the variables related to how people will access their product and use their product. They will also determine all the potential issues that may arise and figure out how to address them.
8. Students should conduct online research to see what is already out in the market and to help them answer questions.
9. Students will create a comprehensive development plan explaining the inner workings of their potential product.
10. Groups will then work together to develop a brief marketing campaign to "sell" their product and present it to their classmates.