**After School S.A.F.E. Curriculum**

Title of Activity: EGG Drop Team Challenge Date: March 26, 2020\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Instructor: Ms. Alice In-wonderland

Grade/Group: 3rd/4th Grade

1.Physical Activity 2. Health/Wellness **3. 21st Cent/STEM** 4. Leadership/ Asset Dev 5. Art Education

6. Literacy/Math **7. College & Career** 8. Service Learning 9. Global Learning

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| **Sequenced** | Explain step by step the activity | **Back End Info:** Students will work in groups of 3 or 4 to design and build an egg drop device. The students will be given a budget and defined list of materials that they can ‘purchase’ to protect their egg. Pre work: Budget sheet  **Purchase materials:** Materials Available to “Purchase”: Toothpicks, String, Paperclips, Straws, Cotton Balls, Pipe Cleaners, Rubber Bands, Paper, Cotton, Newspaper, Balloons, Plastic Sheet  **Start activity by:** Hold an uncooked egg on your hand and ask students, “if I dropped the egg directly on the floor from my neck high, will it break?”  10 Minutes –**Identify** the objectives; go over background information, sight words & definitions and careers. Have students group & discuss pair and share. And go over the Engineering process steps  ( Handout Visual of Engineering process)  **Objective is to protect the Egg** Packaging Engineers: Packaging engineering, also package engineering, packaging technology and packaging science, is a broad topic ranging from design conceptualization to product placement. All steps along the manufacturing process, and more, must be taken into account in the design of the package for any given product. 10 Minutes – **Brainstorm ideas:** instruct students to work with their team and have all students share ideas, based on their budget and materials, 1 student should scribe all ideas. Make sure all students get to share.  10 Minutes – **Choose**: review notes from brainstorming, choose and draw your blue print on how will you execute your plan, and send 1 team member to gather all supplies.  30 Minutes – **Design** using the materials provided. During this time walk around and assist students in questions, ensure all students are being engaged and that the teams are working together.  20 Minutes – **Test** egg drop devices  10 Minutes – **Show** and share your learnings, Wrap up discussion, review best designs and ways to improve future attempts  **Option:** you have the option to expand this activity to a second day and Redesign, perhaps have a higher drop to increase challenge and redesign project |
| **Active** | Hands on | * Student s will scribe notes * Students will draw blue prints * Students will choose their materials * Students will build their product using the materials |
| **Focus** | Skills being developed | * Start your activity by asking an opening question to catch student’s attention. * Embed objectives in lesson planning documents – Emphasize that the objective is to protect the egg from breaking and write it on the board. * Print a copy of the Engineering Process and post it for visual focus * Open activities with introduction that covers the skills to be developed |
| **Explicit** | Define Skill Learned & **Objective** | After testing students will be able to present their findings to the class and:   * Identify weather the objective of the activity was successful (protect the egg)   -explain why the group was successful or un-successful   * Use and define language/sight words related to the activity * Reflect on what would they do different if they had a chance to redesign |
| **Alignment** | List of common core standards being met | This lesson aligns with the following National Science Content Standards:Unifying Concepts and Processes in Science, K-12, 5-8Physical Science, K-4, 5-8  * Science and Technology, K-4, 5-8 |
| **Language** | List of site words learned | Gravity: the force that attracts a body toward the center of the earth, or toward any other physical body having mass. For most purposes Newton's laws of gravity apply, with minor modifications to take the general theory of relativity into account.  Engineer: a person who designs, builds, or maintains engines, machines, or public works.  Packaging: materials used to wrap or protect goods. |