**21st Century Literacy and Innovation**

**Blue Unit: Seeing and Solving**

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| **Stage 1 - Desired Results** | |
| Big Idea: Identifying, researching, refining, and solving problems is the catalyst of innovation and can be carried out by everyone. | |
| Established Goal(s): To prepare students to understand the process through which problems are identified and solved. They will be able to identify their skill sets and utilize these and their existing knowledge sets to generate new ideas and solutions. They will be able to follow the following sequence when solving problems: | |
| Essential Question(s):  What is innovation and why do we innovate?  How do we identify, research, and solve problems?  Is innovation essential to solve problems? | |
| Students will know how to…  Identify a problem.  Examine and define the problem.  Explore what they already know about underlying issues related to it.  Determine what they need to learn and where they can acquire the information and tools necessary to solve the problem.  Evaluate possible ways to solve the problem.  Solve the problem.  Report on their findings. | Students will be able to…  Create an accurate problem statement in which they identify the factors contributing to a problem and stakeholders affected by it.  Work through the problem solving process to identify solutions and how to implement them.  Implement a solution for a problem in their personal communities |

*Template modified from: Integrating: Differentiated Instruction and Understanding by Desgin. Carol Ann Tomlinson & Jay McTighe*

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| **Lesson Overview** Brief description of what the learning will be each lesson | |
| **Lesson** | Topics to be Covered |
| 1 | 9-Dot Challenge  Basics of Problem Solving and the steps of doing so:   * Examine and define the problem. * Explore what they already know about underlying issues related to it. * Determine what they need to learn and where they can acquire the information and tools necessary to solve the problem. * Evaluate possible ways to solve the problem. * Solve the problem. * Report on their findings. |
| 2 | Problems Inventory: come together to identify and list problems affecting student communities. |
| 3 | Refining, ordering, and categorizing Problems. Select collaboration teams. |
| 4 | Researching Problems: gathering data, conducting interviews, identifying stakeholders, identify initial needs. |
| 5 | Brainstorming Solutions: Students will begin to brainstorm solutions to their problems. They are expected to maintain this brainstorming in online collaborative environment. |
| 6 | Ken Watanabe: Problem Solving 101:  Problem Solving Toolkit: Understand the Situation>Identify the root cause of the problem.develop and effective action plan>Execute, and modify, until the problem is solved.  Logic Tree: It doesn’t feel like students want to be involved.  Yes/No Tree: Requires yes no question  PS Design Plan: Concert Goers  Impact v. Ease:  Pros & Cons + Criteria & Evaluation:  Watanabe, K. (2009). Problem Solving 101: A simple book for smart people. Portfolio. United States. |
| 7 | Seeking another purpose activity: Using a simple item, determine alternative uses for that item.  CREATE: Clarify your intention, Round up ideas, Explore and Experiment, Analyze and Act, Take a Breather, Execute, Evaluate, and Enjoy  Convergent v Divergent : One Solution v Many  Poreba, D.M., (2015) Unlocking Your Creativity. Alpha Books, Penguin Random House LLC. New York |
| 8 | Watching an episode of *Abstract* and evaluating the process Tinker Hatfield went through to become the innovator he has become known as today.  Pantaleo, M. [Producer] (2017). Abstract: The Art of Design: Episode 2: Tinker Hatfield: Footwear Design. Netflix |
| 9 | Revisiting Solutions. Team Check-in and evaluation of progress on mastery and problem resolutions. |