**Pequea Valley School District**

**STEM Department**

**Unit: Deck Modeling Course: STEM 9 Grade: 9**

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| **Planning the Focus Based on the Desired Result**  **What do you want all students to know, understand and do by the end of the unit?** |
| **Unit Essential Question(s)**  How is a scale model of a deck designed and prototyped? |
| **Keystone Eligible Content/PA Core Standard**  **3.2.10.B** Apply process knowledge and organize scientific and technological phenomena in varied ways  **3.2.10.D** Identify and Apply the technological design process to solve problems.  **3.6.10.C** Apply Physical technologies of structural design, analysis and engineering, personnel relations, financial affairs, structural production, research and design to real world problems.  **3.7.10.A** Identify and safely use a variety of tools, basic machines, materials, and techniques to solve problems and answer questions |
| **Pacing: Approximate number of class sessions per unit**  **20 Days** |
| **Tier 3 Vocabulary (Content specific vocabulary)**  Header, ledger, tread, riser, Joist, end joist, baluster, top rail, cap rail, footing, girder, stringer, decking, architecture scale, miter saw |
| **Know -** What do students need to **know** in order to be able to do and understand? ***List concepts, such as facts, formulas, key vocabulary and knowledge “nuggets”.***   * Proportions * How to read an architecture scale * Parts of a deck |
| **Understand -** What do students need to **understand**? What is the **big idea**? ***List broad concepts or “big ideas” in a statement of enduring understanding.***   * How to use an architectural scale * How Deck parts are properly used * How to create a scale model drawing * How to use tools and materials to construct a scale model |
| **Learning Outcome -** What do students need to be able to **accomplish** by the unit’s end? ***List skills and competencies.***   * Learners will create a scale drawing of a deck that meets specific criteria. * Learners will construct a scale model of a deck that meets specific criteria. * Learners will present and sell their deck designs to the class |
| **Assessments:**   * Learners will take an assessment on deck parts. * Algebra I Keystones |
| **Software/Resources:**  Authentic Learning experience:Jim Stauffer from Ames construction |