**Pequea Valley School District**

**STEM Department**

**Unit: Concrete Testing Course: STEM 9 Conceptual Physics Grade: 9**

|  |
| --- |
| **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)**  Why is materials testing important to our society’s infrastructure and how do companies go about doing it? |
| **Keystone Eligible Content/PA Core Standard**    **3.1.12.A** Apply concepts of systems, subsystems, feedback and control to solve complex technological problems.  **3.1.12.B** Apply concepts of models as a method to predict and understand science and technology.  **3.1.12.C** Assess and apply patterns in science and technology.  **3.4.10.C** Distinguish among the principles of force and motion |
| **Pacing: Approximate number of class sessions per unit**  **5** |
| **Tier 3 Vocabulary (Content specific vocabulary)**  force, pressure, area, p.s.i., Pascal, data analysis, cure rate |
| **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”.***   * How to calculate Area * How to calculate Pressure * Units for Force, Pressure, and Area * How to communicate with others * How to make a graph * How to operate a materials tester |
| **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 Force, Pressure, and Area relate to each other * How the cure rate of concrete changes over time * The methods of gathering data * How to analyze large collections of data |
| **Learning Outcome -** What do students need to be able to **accomplish** by the unit’s end? ***List skills and competencies.***  Learners will be able to design an experiment to discover the cure rate of concrete.  Learners will be able to communicate their experimental setup and results through a lab report.  Learners will be able to analyze a collection of data, create graphs with that data, and come to a conclusion regarding cure rate of concrete. |
| **Assessments:**   * Lab Report * Lab Result Analysis |
| **Software/Resources:**   * Schoology * Google Drive * EdPuzzle * Materials Tester |