**Pequea Valley School District**

**STEM Department**

**Unit: Concrete Testing Course: STEM 9 Conceptual Physics 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)**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
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| **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
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| **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
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| **Software/Resources:*** Schoology
* Google Drive
* EdPuzzle
* Materials Tester
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