

## **DOCUMENT 1: Learning Module**

### **Transcript**

- Intended as a resource for educators to guide students through video lectures
- Consists of
  - Embedded video lectures (video times in parentheses)
  - Transcript of videos
  - Summary notes
- Cross-referenced with academic standards (subscripts)

### **Pre-Class Activity**

- Intended to be distributed prior to completing learning module
- Consists of
  - 5 multiple choice questions
  - 1 discussion question - Intended for students to brainstorm answers and begin class with discussion with teacher
  - Supplemental materials for in-class demonstrations
- Cross-referenced with academic standards (subscripts)

### **In-Class Activity**

- Intended to be completed with teacher in the classroom
- For the following modules: Temperature, Pressure, Water
- Consists of:
  - Multiple choice
  - True/False
  - Short answer
  - Calculations
- All other modules consist of:
  - Activity where students are put into groups and given a set of tasks based on the group's role which consist of:
    - Technical tasks
    - Calculations
    - A presentation of their completed tasks to share with the class what they have learned
- Cross-referenced with academic standards (subscripts)

## **DOCUMENT 2: Module Assessment**

### **Teacher Survey**

- Intended to receive feedback from educators
- Consist of:
  - 4 short answer questions

### **Student Survey**

- Intended to evaluate the interest level of students before and after completing each module
- Consist of:
  - 5 multiple choice questions

### **Effectiveness Assessment**

- Part 1: Student Evaluation (Pre and Post Assessment)
  - Intended to be distributed and scored before and after completing module
  - Consists of:
    - 10 questions worth 1 point each
  - Score based on solutions
- Part 2: Math & Science Proficiency Assessment
  - Intended to assess students' ability to complete a multistep procedure and demonstrate proficiency in math and science
  - Consists of:
    - 1 section from module predetermined based on academic standards
  - Cross-referenced with academic standard (table)
  - Score based on rubric and solutions

**DOCUMENT 3: Solutions**

**Solutions**

- Intended to be distributed to educators only via email submission
- Consists of:
  - Answers shown in red; point values not assigned
- Solutions for:
  - Pre-Class Activity
  - In-Class Activity
  - Take Home Assignment
  - Student Evaluation

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### **Take Home Assignment**

- Intended to be completed at home
- Consist of:
  - Multiple choice
  - True/False
  - Short answer
  - Calculations
- Cross-referenced with academic standards (subscripts)

### **Student Evaluation (Pre and Post Assessment)**

- Intended to be taken before and after completing module for evaluation on effectiveness of modules
- Consist of:
  - 8 multiple choice or true/false
  - 1 short answer
  - 1 calculation
- Cross-referenced with academic standards (subscripts)

### **Academic Standards Summary and Links**

- Intended as a resource for educators
- Consist of:
  - Links to learn more about Common Core and Next Generation Science Standards
  - Subscript representing the standard throughout the learning module
  - Standard code and link
  - Summary of standard directly taken from CCSS and NGSS webpages
  - Location of where standards are met within the learning module