

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 (subscriptions)

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 (subscriptions)

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 (subscriptions)

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

Created by Tyra Brown, Nicole Riemer, Eric Snodgrass and Anna Ortiz at the University of Illinois at Urbana-Champaign. 2015-2016. Supported by the National Science Foundation CAREER Grant #1254428.

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