Laarman Lesson Plan

Class: Earth Science Unit: Earth-System Science Standards: ESS2-6

Topic: Rocks Date: 11/28/16

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| **Materials, Prep** | Local rock samples, rock testing materials, laptop cart |
| **Procedure** | Student groups identify rock samples they brought in plus ones collected from our area. |
| **Homework** | Write what you think your rocks are and your reasons for reaching that conclusion. |

Topic: Local History Date: 11/29/16

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| **Materials, Prep** | Local rock samples, rock testing materials, laptop cart |
| **Objective** | Students identify local rock samples to piece together a geologic history of our area. |
| **Procedure** | 1. Student groups identify local rock samples. 2. Class discussion: what were the rocks found in our local area? What does this tell you about the history of this area? 3. Reveal the surprising facts about our local geologic history. |

Topic: Earth’s Systems Date: 11/30/16

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| **Materials, Prep** | Earth’s Systems Slideshow |
| **Anticipatory Set**  **-connection, motivation, relevance** | 1. Introduce the concept of “Earth-System Science” covered in 2.2  2. Review cycles covered in last unit: rock cycle, water cycle |
| **Procedure** | 1. Student groups come up with examples of systems, and from that devise a definition of systems 2. Present diagrams of phosphorus, nitrogen, cycles |

Topic: The Nitrogen Cycle Date: 12/1/16

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| **Materials, Prep** | Nitrogen Cycle Game Materials |
| **Procedure** | Perform the Nitrogen Cycle game from <http://www.windows2universe.org/teacher_resources/teach_nitrogen.html> |

Topic: The Carbon Cycle Date: 12/2/16

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| **Materials, Prep** | Laptops |
| **Procedure** | In small groups, students create carbon cycle models   1. Where do you think carbon reservoirs are 2. How do you think carbon travels from one reservoir to another? 3. Use laptops to find information to fill in the gaps: how much carbon is in each reservoir? How much carbon moves from one to another through each mode of travel? |