Date: Jan 6, 2016

Science Rocks & Minerals Grade: 3 & 4 multiage 10:37am – 12:19pm

General Learner Outcomes:

*Students will:*

**3-1 investigate the nature of things, demonstrating purposeful action that leads to observations and inferences**

**3-2 Identify patterns and order objects and events studied; and, with guidance, record observations, using pictures, words and charts; and make predictions and generalizations, based on observations**

**3-4 Demonstrate positive attitudes for the study of science and for the application of science in responsible ways.**

**3-5 Demonstrate knowledge of materials that comprise Earth’s crust, and demonstrate skill in classifying these materials**

Specific Learner Outcomes:

*Students will:*

1. **Compare samples of various kinds of rock, and identify similarities and difference.**
2. **Given a description of properties. Properties that students should be able to describe and interpret include:**

**. colour**

**luster or “shininess”; e.g. shiny, dull, glassy, metallic, earthy**

**. texture: e.g. rough, smooth, uneven**

**. hardness, based on scratch test with available materials**

1. **Describe and classify a group of rocks and minerals based upon the above properties**
2. **Recognize that rocks are composed of a variety of materials; and given a course-grained rock and magnifier, describe some of the component materials.**

Learning Objectives

*Students will:*

. recall properties of rocks and minerals

. identify the three types of rocks

. apply the types of rocks and how they are formed to understand the rock cycle

Evidence of Learning

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| Observations | Key Questions | Written / Performance Assessment |
| . students working together. staying on task. class participation | . What is a rock?. How is igneous rock formed?. How is sedimentary rock formed?. How is metamorphic rock formed?. What happens to magma when it cools? | . rock & mineral properties review. verbal summarization of types of rocks and how they are formed.. classification of rock types SMART board activity.. completion of Rock Cycle handout |

Materials & Resources

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| Materials | Resources Consulted |
| . SMART board. Lap top. Rock Cycle handout. Rock Types definition handout. Rocks & Minerals review handout | . Alberta program of studies<http://www.layers-of-learning.com/tag/rock-cycle-worksheet/> |

Introduction

*Attention Grabber:*

. start lesson on the carpet

. go over student and teacher expectations during science class and science centers (classroom management)

Body

*Learning Activity 1*: Review

. handout Rocks & Minerals properties review

. ask students what are some properties of rocks & minerals to complete sheet

. write the answers on the whiteboard

. first 2 slides from SMART board

*Assessment:*

. checking student comprehension from last two lessons

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| *Differentiation:*. have a word bank of terms to choose from to complete the hand out. have two separate boxes; 1 for rocks, 1 for minerals, students classify rocks & minerals according to their properties by placing the rock / mineral into the appropriate circle  |

*Learning Activity 2*: Types of Rocks SMART board

. handout Rock Definition worksheet to the students

. work through the slide show for each type of rock

 Ex: Sedimentary – read slide, then ask student to summarize the information

* Pull tag on next slide for short definition (students copy)
* Look at different examples of that type of rock (in sedimentary rocks you can see the layers of the different sediment being compressed together)

. naming the different types of rocks activity slide

*Assessment:*

. students summarizing how different types of rocks are formed

. completing definitions for the different types of rocks on handout

. naming the type of rock SMART board activity

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| *Differentiation:*. have the rock types definition typed out for the students to copy instead of constantly looking up to the board. have sedimentary, igneous, metamorphic rocks for students too look at and categorize  |

*Learning Activity 3*: Rock Cycle

. handout The Rock Cycle worksheet

. on SMART board have the Rock Cycle

. work through the Rock Cycle handout to fill in the blanks. Students have a word bank on their handout to chose the correct answer.

*Assessment:*

. Rock Cycle handout fill in the blanks

. verbal questioning; “What happens to sediment when it is compressed?” (turns into sedimentary rock)

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| *Differentiation:*. some handouts don’t have a word bank and students have to fill in the Rock Cycle by using the diagram on the board. have a manipulative rock cycle created out of Bristol board and actual sedimentary, igneous, metamorphic rocks and sediment in a jar |

Closing

*Consolidation / Assessment of Learning:*

. what are the three different types of rocks?

. how is sedimentary rock formed?

. how is metamorphic rock formed?

. how is igneous rock formed?

. clean up for lunch