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

|  |  |  |
| --- | --- | --- |
| 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