Rockin the Elementary Grades

2014 NCSTA-PDI
Thursday, Nov. 6th
Winston-Salem

Grades: Elementary School
Subjects: Earth/Space Science
Strands: Science Literacy, Inquiry

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New website portal.ncdenr.org/web/lr/geological_home
Overview of Session

1. We will do parts of 2 activities
2. The actual activities take longer
3. All activities are downloadable from our website

Google - N.C. Geological Survey - Geoscience Education

http://portal.ncdenr.org/web/lr/earth-science-outreach
Activities with Curriculum Correlation

• Activity 1: Lesson 7 from NCDPI - 'Are They From North Carolina?'
  ✓ Essential Standards:
  Physical Science 4.P.2.;
  Earth Science 4.E.2.3; 1.E.2; 3.E.2; 8.E.2.2
  Social Studies 3.G.1; 3.E.1; 6.G.1; 7.G.2; and 2; EEn 2.2

• Activity 2: Rock Cycle poster set with Mobius Strip
  ✓ Essential Standards:
  Physical Science 4.P.2.;
  Earth Science 4.E.2.3; 1.E.2;
Activity 1: Lesson 7 “Are these Rocks from North Carolina?”
(developed by Catherine Alligood)


Are these Rocks from N.C.?

What you need:
1. NCDOT Highway Map
2. Card set #1: County Names
3. Card set #2: Rock ID
4. Rock Giveaway Samples
5. Marker
Activity 1: Lesson 7 “Are these Rocks from North Carolina?”

1. Each group open up the NCDOT Highway map.
2. Match the 'County' cards to the corresponding county on the map (Hint: use the province to help you find them-Blue Ridge, Piedmont, or Coastal Plain).
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2. Match the ‘County’ cards to the corresponding county on the map (Hint: use the province to help you find them—Blue Ridge, Piedmont, or Coastal Plain).

3. Match the **Rock Samples** to the corresponding county number on the map. Use the marker to write the number on one piece from the sample bag - Do you see any patterns?

*Rock samples from the Rock Giveaway, held alternating years - see description of samples too.*
Activity 1: Lesson 7 “Are these Rocks from North Carolina?”

1. Each group open up the NCDOT Highway map.
2. Match the ‘County’ cards to the corresponding county on the map (Hint: use the province to help you find them—Blue Ridge, Piedmont, or Coastal Plain).
3. Match the rock sample to the corresponding county number on the map. Use the marker to write the number on one piece from the sample bag - Do you see any patterns?
4. Match the 'Rock ID' cards to the rock sample on the map and read a bullet on the card, to the group, to find out more about the sample.
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2. Match the ‘County’ cards to the corresponding county on the map (Hint: use the province to help you find them—Blue Ridge, Piedmont, or Coastal Plain).
3. Match the rock sample to the corresponding county number on the map. Use the marker to write the number on one piece from the sample bag—Do you see any patterns?
4. Match the ‘Rock ID’ cards to the rock sample on the map and read a bullet on the card, to the group, to find out more about the sample.
5. Where do you see sediments and sedimentary rocks? Igneous rocks? Metamorphic rocks? What do the limestone and marble tell you about the geologic history of NC? Has the shoreline in North Carolina moved?
1. Each group open up the NCDOT Highway map.
2. Match the ‘County’ cards to the corresponding county on the map (Hint: use the province to help you find them-Blue Ridge, Piedmont, or Coastal Plain).
3. Match the rock sample to the corresponding county number on the map. Use the marker to write the number on one piece from the sample bag - Do you see any patterns?
4. Match the ‘Rock ID’ cards to the rock sample on the map and read a bullet on the card, to the group, to find out more about the sample.
5. Where do you see sediments and sedimentary rocks? Igneous rocks? Metamorphic rocks? What do the limestone and marble tell you about the geologic history of NC? Has the shoreline of North Carolina moved?
6. If time, compare to the 1991 Generalized Geologic map.
Activity 1: Lesson 7 “Are these Rocks from North Carolina?”

- Lesson 7, is one of seven 4th grade Rocks and Minerals lessons developed for NCDPI by teachers. These are downloadable from our website - Google - N.C. Geological Survey - Geoscience Education
  - [http://portal.ncdenr.org/web/lr/earth-science-outreach](http://portal.ncdenr.org/web/lr/earth-science-outreach)

- 1991 Generalized Geologic Map (downloadable) from NCGS

- NCDOT Highway Map
Activity 2: Rock Cycle posters, mobius strip

Rock Cycle with Mobius strip

What you need:
1. Rock Cycle posters to make stations
2. Mobius Strip 8.5x11 sheet
3. Mobius Strip directions (separate sheet)
4. Pencil
5. Scissors
6. Tape
Activity 2: Rock Cycle posters and mobius strip

Set up: Three stations, each with a Rock Cycle poster for one rock type (igneous, sedimentary, metamorphic).

If available, at each station put out rock samples and their parts, i.e. sand is in sandstone; quartz, feldspar, biotite mica are in granite; mica is in schist.
Activity 2: Rock Cycle posters and mobius strip

1. As a group, take the Rock Cycle Mobius sheet to each of the 3 rock cycle stations (igneous, sedimentary, metamorphic) and fill out the 'Clues' and 'Examples' for that rock type.
Activity 2: Rock Cycle posters and mobius strip

1. As a group, take the Rock Cycle mobius strip sheet to each of the 3 rock cycle stations (igneous, sedimentary, metamorphic) and fill out the 'Clues' and 'Examples' for that rock type.

2. Follow mobius strip direction sheet to make the Rock Cycle mobius strip (scissors and tape are needed).
Rock Cycle posters, slide show and other materials are downloadable for free from NCGS website - Geoscience Education:
http://portal.ncdenr.org/web/lr/earth-science-outreach

Suggestions for other samples to include:
**Sedimentary:** Rocks - sandstone, conglomerate, shale
**Igneous:** Rocks - Granite; Minerals - white feldspar, pink feldspar, quartz, biotite mica, hornblende
**Metamorphic:** Rocks - schist, slate; Minerals - garnet, kyanite

**Rock and mineral suppliers:**
- Ward’s Science - www.wardsci.com
- Carolina Biological - http://www.carolina.com/
- DJ’s Minerals - www.djminerals.com/

**List of N.C. Gem and Mineral Clubs and Museums:**
www.rockhounds.com/rockshop/clubs/north_carolina.shtml
1. If you have any comments or suggestions on these activities OR
Would like to share other geology related activities...

Please email me at Randy.Bechtel@ncdenr.gov and put 'rockin activities' in the subject line.

Thank you
Randy B