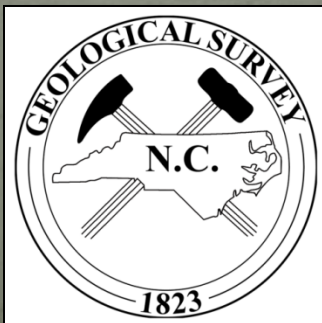


# Rockin the Elementary Grades



2014 NCSTA-PDI  
Thursday, Nov. 6<sup>th</sup>  
Winston-Salem

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



Randy Bechtel, [Randy.Bechtel@ncdenr.gov](mailto:Randy.Bechtel@ncdenr.gov) : 919-707-9204  
North Carolina Geological Survey (NCGS) : 919-707-9210  
New website [portal.ncdenr.org/web/lr/geological\\_home](http://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>

## Overview of Session

### 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)

Essential Standards 4.P.2.; 4.E.2.3; 3.E.2; 3.E.1 and 2; 1.E.2;  
7.G.2; 6.G.1; 3.G.1

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).



## 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 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.*



Rock Samples

## 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.

Rock ID cards



## 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.
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?



## 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.
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 4<sup>th</sup> 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>
- 1991 Generalized Geologic Map (downloadable) from NCGS
- NCDOT Highway Map  
[www.ncdot.gov/travel/mappubs/default.html](http://www.ncdot.gov/travel/mappubs/default.html)

## 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

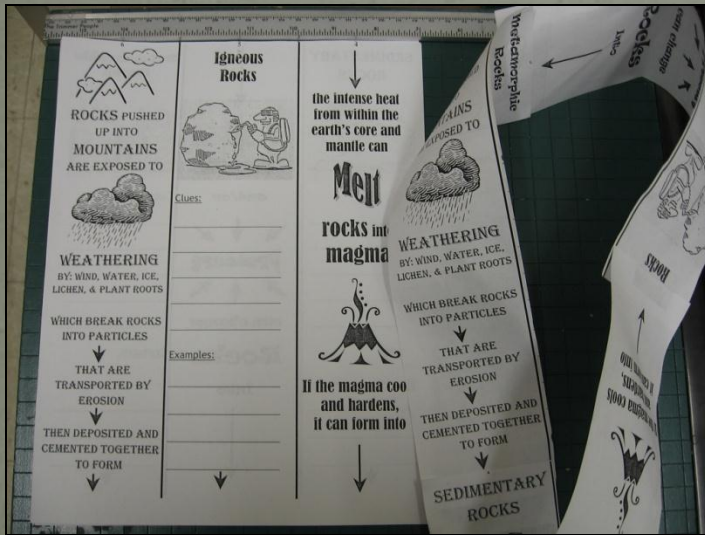
Set up: Three stations, each with a Rock Cycle poster for one rock type (igneous, sedimentary, metamorphic).

*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.*



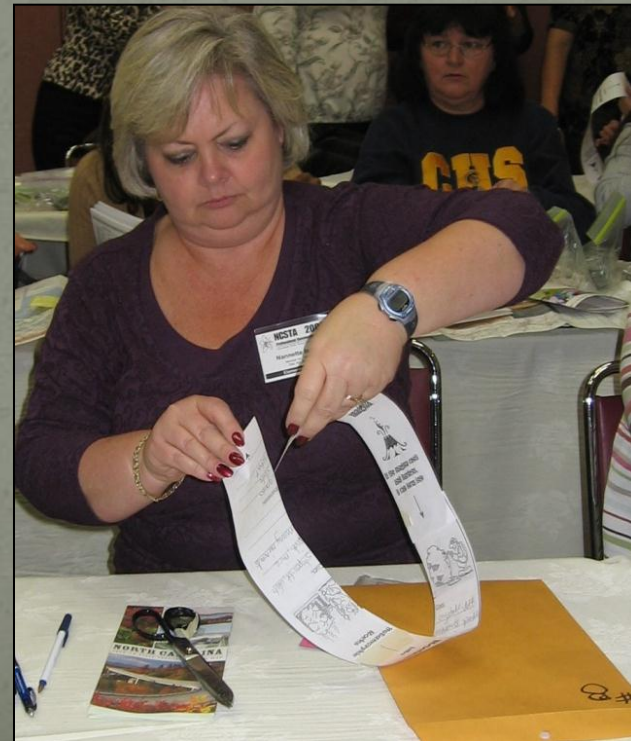
## Activity 2: Rock Cycle posters and mobius strip

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).



## Activity 2: Rock Cycle posters and mobius strip

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](http://www.wardsci.com)

Carolina Biological - <http://www.carolina.com/>

DJ's Minerals- [www.djminerals.com/](http://www.djminerals.com/)

List of N.C. Gem and Mineral Clubs and Museums:

[www.rockhounds.com/rockshop/clubs/north\\_carolina.shtml](http://www.rockhounds.com/rockshop/clubs/north_carolina.shtml)

THE END

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](mailto:Randy.Bechtel@ncdenr.gov)  
and put '*rockin activities*' in  
the subject line.

Thank you  
Randy B

