

# ***What's Under my Feet?***

**Upper Primary (2<sup>nd</sup> & 3<sup>rd</sup> grade)  
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**Approximate Timeline:** 5 weeks

**Organizers:**

What's down in the ground and how can I use it?

**Essential Questions:**

1. What is the ground made of?
2. How can rocks be classified?
3. How can we use what is in the ground?

**Academic Expectations and Demonstrators:**

-1.16 Students use computers and other kinds of technology to collect, organize, and communicate information and ideas.

- Use a variety of technologies in various ways.*
- Use technology to display information in various ways.*
- Gather and manipulate data using technology.*
- Express information and ideas using technology.*

-2.6 Students understand how living and nonliving things change over time and the factors that influence the changes.

- Use senses to observe items; communicate similarities and/or differences.*
- Classify objects according to more than one property or attribute.*
- Describe situations where one change causes another change.*

-5.2 Students use creative thinking skills to develop or invent novel, constructive ideas or products.

-6.1 Students connect knowledge and experiences from different subject areas.

**Culminating Performance:**

Each student will choose one rock from a collection of igneous, metamorphic, and sedimentary rocks. Each student will use multiple resources to create an informational brochure highlighting their rock. The brochures will be combined into a class rock museum to be on display for other students.

**Scoring Guide****Level 4:**

- My brochure has a picture of my rock, tells what kind of rock it is, how it was formed, and two or more interesting facts.
- My brochure contains a picture of an igneous rock and at least three facts about this kind of rock.
- My brochure contains a picture of a sedimentary rock and at least three facts about this kind of rock.
- My brochure contains a picture of a metamorphic rock and at least three facts about this kind of rock.

**Level 3:**

- My brochure has a picture of my rock, tells what kind of rock it is, how it was formed, and at least one interesting fact.
- My brochure contains a picture of an igneous rock and at least two facts about this kind of rock.
- My brochure contains a picture of a sedimentary rock and at least two facts about this kind of rock.
- My brochure contains a picture of a metamorphic rock and at least two facts about this kind of rock.

**Level 2:**

- My brochure has two of these things: a picture of my rock, tells what kind of rock it is, how it was formed, and at least one interesting fact.
- My brochure contains a picture of an igneous rock and one fact about this kind of rock.
- My brochure contains a picture of a sedimentary rock and one fact about this kind of rock.

- My brochure contains a picture of a metamorphic rock and one fact about this kind of rock.

**Level 1:**

- My brochure has one or none of these things: a picture of my rock, tells what kind of rock it is, how it was formed, and at least one interesting fact.
- My brochure may or may not contain a picture of an igneous rock and one or no facts about this kind of rock.
- My brochure may or may not contain a picture of a sedimentary rock and one or no facts about this kind of rock.
- My brochure may or may not contain a picture of a metamorphic rock and one or no facts about this kind of rock.

Mechanics and Creativity Rubric	
4	<ul style="list-style-type: none"> <li>➤ My brochure contains no or only one C.U.P.S. errors.</li> <li>➤ I used complete sentences, my writing makes sense, and my work is interesting to the reader.</li> <li>➤ My work is very neat, colorful, and shows my very best effort.</li> </ul>
3	<ul style="list-style-type: none"> <li>➤ My brochure has only two or three C.U.P.S. errors.</li> <li>➤ I used complete sentences and my writing makes sense.</li> <li>➤ My work is neat, colorful, and shows my best effort.</li> </ul>
2	<ul style="list-style-type: none"> <li>➤ My brochure has four or five C.U.P.S. errors.</li> <li>➤ I used some complete sentences and my writing mostly makes sense.</li> <li>➤ Most of my work is neat, colorful and shows good effort.</li> </ul>
1	<ul style="list-style-type: none"> <li>➤ My brochure has more than five C.U.P.S. errors.</li> <li>➤ I used only a few complete sentences and my writing does not make sense.</li> <li>➤ My work is not neat, colorful and shows little effort.</li> </ul>

**Core Content:**

-SC-E-2.1.1 Earth materials include solid rocks and soils, water, and the gases of the atmosphere. Minerals that make up rocks have properties of color, texture, and hardness. Soils have properties of color, texture, the capacity to retain water, and the ability to support plant growth. Water on Earth and in the atmosphere can be a solid, liquid, or gas.

-SC-E-2.1.2 Earth materials provide many of the resources humans use. The varied materials have different physical and chemical properties, which make them useful in different ways, for example, as building materials (e.g., stone, clay, marble), as sources of fuel (e.g., petroleum, natural gas), or growing the plants we use as food.

-PL-E-4.1.3 There are different job opportunities in the home, school, and community (e.g., home business, flexible schedule).

-PL-E-4.4.1 Academic skills (e.g., science, physical education, math, health, reading, writing, social studies, art, music) that relate to various jobs and careers are needed for future success.

**Knowledge:**

Types of rocks: igneous, metamorphic and sedimentary

Rock formation

Characteristics/properties of rocks

**Skills/Abilities:**

Observe

Identify

Classify

Create a brochure

Communicate ideas in writing

Using a digital camera

Keyboarding skills

**Technology Standards**

T6.5 Create a presentation or product using application software.

T6.6 Use digital imaging and audio

T5.7 Enter and edit spreadsheet information

T5.1 Use proper keyboarding with speed and accuracy relative to the task

### Instructional/Assessment Activities:

	Mon	Tues	Wed	Thurs	Fri
Week 1	<ul style="list-style-type: none"> <li>Initiating Activity: Scavenger Hunt on school grounds (classify rocks; living/non-living)</li> <li>Writing/Read Aloud: Literary piece with brochure about character, setting, problem solution</li> </ul>	<ul style="list-style-type: none"> <li>Organizing question</li> <li>Pretest</li> <li>Writing/Read Aloud: Literary piece with brochure about character, setting, problem solution</li> </ul>	<ul style="list-style-type: none"> <li>Non-living Things</li> <li>Read aloud</li> <li>Three types of rocks</li> <li>Writing/Read Aloud: Literary piece with brochure about character, setting, problem solution</li> </ul>	<ul style="list-style-type: none"> <li>How rocks are formed (Use Rock Hounds website)</li> <li>Writing/Read Aloud: Literary piece with brochure about character, setting, problem solution</li> </ul>	<ul style="list-style-type: none"> <li>How rocks are formed (continued) (Use Rock Hounds website)</li> <li>Read Aloud: Interview</li> <li>Writing: Brainstorm interview questions</li> </ul>
Week 2	<ul style="list-style-type: none"> <li>How rocks are formed (continued) (Use Rock Hounds website)</li> <li>Writing/Read Aloud: Review, revise interview questions; Ask a Geologist website: <a href="mailto:Ask-A-Geologist@u.sgs.gov">Ask-A-Geologist@u.sgs.gov</a></li> </ul>	<ul style="list-style-type: none"> <li>Guest speaker (Geologist)</li> </ul>	<ul style="list-style-type: none"> <li>What's inside of rocks? (FOSS Lesson #1)</li> </ul>	<ul style="list-style-type: none"> <li>Minerals (FOSS Lesson #2)</li> </ul>	<ul style="list-style-type: none"> <li>Minerals continued (FOSS Lesson #2)</li> </ul>
Week 3	<ul style="list-style-type: none"> <li>How do we use rocks? (<i>Using Rocks</i> book)</li> </ul>	<ul style="list-style-type: none"> <li>Erosion</li> </ul>	<ul style="list-style-type: none"> <li>Show examples of brochure and rubric</li> </ul>	<ul style="list-style-type: none"> <li>Develop brochure</li> </ul>	<ul style="list-style-type: none"> <li>Develop brochure</li> </ul>

Week 4	Computer lab time	Computer lab time	Computer lab time	Computer lab time	Computer lab time
Week 5	Rock Museum	Rock Museum	Post test		

### Critical Resources:

- Rock collection
- Computers
- LCD Projector or scan converter
- Printers
- Microsoft Publisher
- Technology Resource Teacher
- Digital Camera
- Websites:
  - Rockhound: <http://www.fi.edu/fellows/payton/rocks/index2.html>
  - Boxed Rocks and Mineral Collections: <http://www.rocksandminerals.com/boxed/boxed.htm> (to buy rocks)
- Literature
- Guest speaker -geologist
- Earth Materials (FOSS kit)

### Books:

CALL #	Title	School
070.4 Fit	Fitz-Gerald, Christine Maloney. I can be a reporter. Chicago: Childrens Press, c1986. Discusses the work reporters do in gathering material for stories and then writing them.	Arlington
070.4 MAB	Mabery, D. L. Tell me about yourself: how to interview anyone, from your friends to famous people. Minneapolis: Lerner Publications Co., c1985. Describes how to arrange, prepare for, and conduct an interview, with examples and suggestions of interview opportunities in school and various careers.	Cardinal Valley, Clays Mill, Squires
331.1 Cra	Craig, Janet. What's it like to be a newspaper reporter. Mahwah, N.J.: Troll Associates, c1990. Follows a newspaper reporter as he covers different assignments and describes the activities of editors, proofreaders, and others inside and outside the newsroom who help publish and distribute the newspaper.	Cardinal Valley, Lansdowne, Picadome, Squires, Stonewall
549 Har	Harris, Susan. Gems and minerals. New York: F. Watts, 1980. Describes in simple language the characteristics and uses of minerals and gems.	Arlington, Breckinridge, JLAllen, Johnson, Linlee, Meadowthorpe, Russell
549 Pel	Pellant, Chris. Rocks and minerals / by Chris Pellant ; Helen Pellant, editorial consultant ;	Julius Marks

	photography by Harry Taylor. New York: Boston, Mass.: Dorling Kindersley; Distributed by Houghton Mifflin, 1992.	
550 Sip	Sipiera, Paul P. I can be a geologist. Chicago: Childrens Press, 1986. Briefly describes a variety of jobs and topics of study in the field of geology and highlights the necessary education and training.	Arlington, Garden Springs
551.1 COL (B SET)	COLE, J. THE MAGIC SCHOOL BUS INSIDE THE EARTH (BOOK SET).	Tates Creek Elementary
552 GAN	Gans, Roma, 1894- Let's go rock collecting. New York: Harper Collins Publishers, c1997. Describes the formation and characteristics of igneous, metamorphic, and sedimentary rocks and how to recognize and collect them.	Millcreek
552 Pod	Podendorf, Illa. Rocks and minerals. Chicago: Childrens Press, c1982. An introduction to the formation and identification of a variety of rocks and minerals.	Arlington, Ashland, Athens, Cvalley, Deep Springs, Garden Springs, JAllen, Johnson, JREwan, Lansdowne, Linlee, Meadowthorpe, Northern, Russell, Russell Cave, Southern, Squires, Stonewall, Veterans Park, Yates
552 Sym	Symes, R. F. Rocks & minerals. New York: Knopf, 1988. Text and photographs examine the creation, importance, erosion, mining, and uses of rocks and minerals.	Millcreek
624 Lan	Langley, Andrew. Under the ground. New York: Bookwright Press, 1986, c1985. Describes things which are found underground such as worms, coal, caves, tunnels, cables, and artifacts.	Garden Springs, Squires
E B	Baylor, Byrd. Everybody needs a rock. New York : Scribner, [1974] Describes the qualities to consider in selecting the perfect rock for play and pleasure.	Ashland, Breckinridge, BTW, Cassidy, Clays Mill, Deep Springs, Dixie, Harrison, JREwan, Mary Todd, Northern, Picadome, Rosa Parks, Russell, Southern, Squires, Tates Creek Elem, Veterans Park, Yates
VR 552 All	All about rocks & minerals. Schlessinger Media, c2000. Minerals are an important part of everything around us, from the pencils we write with to the airplanes in the sky. Even the Earth beneath our feet is packed solid with these essential building blocks.	Millcreek

**Evaluation Component:**

Pre- and Post test

1. Which is NOT a type of rock?

- a. igneous
- b. cement
- c. metamorphic
- d. sedimentary

2. How are igneous rocks formed?

- a. when magma cools
- b. when magma heats up
- c. when magma evaporates
- d. when magma falls

3. Which is a sedimentary rock?

- a. gneiss
- b. granite
- c. scoria
- d. limestone

4. What is erosion? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

5. Explain two ways we use what is in the ground.

a. \_\_\_\_\_

\_\_\_\_\_

b. \_\_\_\_\_

\_\_\_\_\_

6. What do you call a person who studies rocks?

- a. astronaut
- b. geologist
- c. meteorologist
- d. oceanographer

7. Rocks have matter inside of them that give them color called:

- a. dirt
- b. water
- c. minerals
- d. chemicals