



UNIT: ARTFUL EARTH–EXPLORING ROCKS AND SOILS
THE ROCK CYCLE DANCE (Lesson 1 of 3)
Grade Band: 3, 4
Content Focus: Dance & Science



LEARNING DESCRIPTION

In this arts integrated lesson, students will model the rock cycle by composing small group dance compositions. Students will use the dance concepts: Body shapes and non-locomotor/locomotor movements to depict how rocks change their form based on physical and chemical changes that naturally occur over time. Groups will observe their peers and evaluate the dance pieces based on their understanding of how rocks are formed.

LEARNING TARGETS

Essential Questions	“I Can” Statements
How are the three types of rocks formed?	I can identify the three types of rocks: Igneous, sedimentary, and metamorphic.
How can I use movement to represent the rock cycle?	I can use movement to represent the rock cycle.
What is the difference between the three types of rocks?	I can identify how the changes in nature result in a new type of rock forming.



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	I can identify all of the steps in the rock cycle.
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GEORGIA STANDARDS

Curriculum Standards	Arts Standards
Grade 3: S3E1 Obtain, evaluate, and communicate information about the physical attributes of rocks and soils. S3E1.a Ask questions and analyze data to classify rocks by their physical attributes (color, texture, luster, and hardness) using simple tests. S3E1.b Plan and carry out investigations to describe properties (color, texture, capacity to retain water, and ability to support growth of plants) of soils and soil types (sand, clay, loam). S3E1.c Make observations of the local environment to construct an explanation of how water and/or wind have made changes to soil and/or rocks over time.	Grade 3: ESD3.CR.1 Demonstrate an understanding of the choreographic process. ESD3.CR.2 Demonstrate an understanding of dance as a form of communication.

SOUTH CAROLINA STANDARDS

Curriculum Standards	Arts Standards
Grade 4: 4-ESS1-1. Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.	Anchor Standard 1: I can use movement exploration to discover and create artistic ideas and works. Anchor Standard 2: I can choreograph a dance.

KEY VOCABULARY

Content Vocabulary	Arts Vocabulary
<ul style="list-style-type: none"> Rock - A naturally occurring solid substance composed of one or more minerals, mineraloids, or organic materials Sedimentary rocks - A type of rock that forms from the accumulation, 	<ul style="list-style-type: none"> Body shapes - Refers to an interesting and interrelated arrangement of body parts of one dancer; the visual makeup or molding of the body parts of a singular dancer; the overall visible appearance of a group of dancers (they may be curved/angular,



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<p>compaction, and cementation of sediments over time</p> <ul style="list-style-type: none"> • <u>Metamorphic rocks</u> - A type of rock that forms when existing rocks—either igneous, sedimentary, or other metamorphic rocks—are subjected to high heat, pressure, and/or chemically active fluids over long periods of time • <u>Igneous rocks</u> - A type of rock that is formed from the cooling and solidification of molten rock (magma or lava) • <u>Magma</u> - Molten rock that is found beneath the Earth's surface • <u>Weathering</u> - The process by which rocks and minerals break down into smaller pieces or change chemically due to exposure to environmental conditions such as wind, water, temperature changes, and biological activity • <u>Sediments</u> - Small particles of rock, minerals, organic materials, or other substances that have been broken down or weathered from larger rocks over time 	<p>symmetrical/asymmetrical, positive/negative)</p> <ul style="list-style-type: none"> • <u>Levels</u> - One of the aspects of movement (there are three basic levels in dance: high, middle, and low) • <u>Locomotor movement</u> - A movement that travels through space • <u>Non-locomotor movement</u> - A movement that does not travel through space • <u>Choreography</u> - The art of designing and arranging sequences of movements, steps, and gestures to create a dance piece
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MATERIALS

<ul style="list-style-type: none"> • Choreography Planning Document (one per group) • Suggested images of diagrams: http://www.rocksandminerals4u.com/images/rock-cycle-diagram-im.jpg, https://s-media-cache-ak0.pinimg.com/236x/ae/9f/e7/ae9fe7b1890fde1b727887c435f5ac26.jpg, http://www.cotf.edu/ete/images/modules/msese/earthsysflr/EFCycleP2.gif • Instrumental music

INSTRUCTIONAL DESIGN

Opening/Activating Strategy
<ul style="list-style-type: none"> • As a whole group/class review the rock cycle together by analyzing a diagram. <ul style="list-style-type: none"> ○ Suggested images of diagrams:



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- <http://www.rocksandminerals4u.com/images/rock-cycle-diagram-im.jpg>
- <https://s-media-cache-ak0.pinimg.com/236x/ae/9f/e7/ae9fe7b1890fde1b727887c435f5ac26.jpg>
- <http://www.cotf.edu/ete/images/modules/mse/earthsysflr/EFCycleP2.gif>

Dance Warm-Up

- Students will move freely through the space of the classroom while the teacher plays instrumental music.
- When the music stops, have students make a body shape. It may help to give them some directions, such as to make a curved or angular shape. Encourage students to use their whole bodies when making shapes.
- Direct students to make shapes at high (standing fully erect), middle, and low levels (low to the ground).
- Next, tell students that locomotor movements in dance are movements that travel from one place to another. Create a class list of examples of locomotor movements with students (ie. zig-zag, skip, slither, jump).
- Next, call out a few of the locomotor movements from the created list, and have the students move freely through the room demonstrating the movements.

Work Session

- Place students in small groups and go over the expectations for the dance composition they will create together.
- Stress that each group must have three group body shapes that depict the three types of rocks and three locomotor movements that depict the chemical/physical changes that occur during the rock cycles that transform the rock into the next type (ie. weathering, heat and pressure).
- Go over the [Choreography Planning Document](#) with students.
- You may need to scaffold the planning of student dances by first having them create three body shapes for their three different rocks.
- Then, have students create the locomotor movements that transform them into each new rock.
- Allow time for the small groups to create and rehearse their choreography.

Closing/Reflection

- Groups will perform their dance pieces for the class. Review audience etiquette and expectations prior to performances.
- The students in the audience will observe and determine which body shapes represent which types of rock. They will also look for the locomotor movements that represent the changes in nature.
- Ask students to reflect on the following after the performances:
 - How did you know which body shape represented which rock?
 - Did the movement choices that the group selected accurately depict the rock cycle?
 - Are there any changes we might suggest these dancers make to their choreography to more effectively show the rock cycle?



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ASSESSMENTS

Formative

- Teachers will observe student discussion, reflection questions, and the choreographic process and planning guide.

Summative

- Students' dances demonstrate that they understand the attributes of each type of rock and the process each rock undergoes in its formation through their use of body shapes and locomotor movements.
- Students demonstrate that they can use body shapes and locomotor movements as tools of communication.

DIFFERENTIATION

Accelerated:

- Have students add a beginning and ending frozen shape to their choreography.
- Have students draw a simple diagram of the rock cycle and annotate it with the movements and body shapes they used for each rock.
- Have students add narration or spoken word in between the dances to explain what's happening in the rock cycle (weathering, melting, cooling, etc.).

Remedial: Have students choreograph a dance composition for one type of rock instead of three.

ADDITIONAL RESOURCES

- The Rock Cycle By Base 12 Innovations, Open iTunes to buy and download apps. Free Category: Education Updated: Apr 03, 2013 Version: 1.3 Size: 28.0 MB Language: English Seller: Sivaraman Sivaswami © 2011 Base 12 Innovations
- [Rock Cycle - BrainPOP](#)

CREDITS

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**This integrated lesson provides differentiated ideas and activities for educators that are aligned to a sampling of standards. Standards referenced at the time of publishing may differ based on each state's adoption of new standards.*

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