



Rocks Makin' Rocks: Rock Cycle Simulation

Pam Blanchard

Based on NY Regents Earth Science: Rock Cycle Activity, accessed Summer 2003 (no longer available online)

Focus on Inquiry

The student will collect and analyze data on the journey of a mineral through a model of the rock cycle.

Lesson Overview

Students will participate in a simulation model of the rock cycle. Collecting data by throwing die, students will develop an understanding of the changes that rocks undergo through the rock cycle and how they relate to surface and subsurface events.

Duration		Setting	Grouping	PTI Inquiry Subskills	
45 minutes		Classroom	individually or in pairs	1.3, 3.1, 3.7, 4.2, 4.3, 5.2, 5.3, 5.5, 5.7, 5.8, 5.9, 7.2, 7.3	
Lesson Components	Estimated Time	Inquiry Subskills Used	Technology Used	Level of Student Engagement	Brief Description
Engage	5 min	4.2, 5.8, 7.3	none	1	Begin by recalling prior knowledge of the rock cycle by drawing what they remember.
Explore	20 min	1.3, 3.1, 3.7, 4.3, 5.3, 5.8	countdown timer app	3	Students collect data about their journey through the rock cycle stations.
Explain	10 min	4.2, 4.3, 5.2, 5.3, 5.5, 5.7, 5.8, 5.9, 7.2, 7.3	none	2	Students answer questions based on their journey through the rock cycle. Students work in small teams to draw a graphic that represents their journey.
Expand	5 min	7.3	none	2	Students can choose one of the following: write an essay from the view point of a rock particle as it moves through the rock cycle or rewrite the lyrics of a popular song to include primary concepts about the rock cycle.
Evaluate	5 min	7.3	none	1	Blackline Master #3.

Level of Student Engagement

1	Low	Listen to lecture, observe the teacher, individual reading, teacher demonstration, teacher-centered instruction
2	Moderate	Raise questions, lecture with discussion, record data, make predictions, technology interaction with assistance
3	High	Hands-on activity or inquiry; critique others, draw conclusions, make connections, problem-solve, student-centered

Next Generation Science Standards – Inquiry

NGSS Practice 2: Developing and Using Models
 NGSS Practice 4: Analyzing and Interpreting Data
 NGSS Practice 8: Obtaining, Evaluating and Communicating Information



Next Generation Science Standards – Earth Science

MS-ESS2-1 Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.

Florida Science Standards – Nature of Science

SC.7.N.1.1: Define a problem from the curriculum: use appropriate reference materials to support scientific understanding; plan and carry out scientific investigations of various types, such as systematic observations or experiments; identify variables; collect and organize data; interpret data in charts, tables, and graphics; analyze information; make predictions; and defend conclusions.
 SC.7.N.3.2 Identify the benefits and limitations of the use of scientific models .

Florida Science Standards – Earth Science

SC.7.E.6.2 Identify the patterns within the rock cycle and relate them to surface events (weathering and erosion) and subsurface events (plate tectonics and mountain building)

Materials and Advance Preparation Materials List

Class set:

- One or two set of dice per station
- Station directions and labels (**Blackline Master #1**)
- Rock Cycle songs (3) (to display on Elmo or on Smart Board; **Blackline Master #4**)

Student materials:

- One piece of notebook paper per student
- Lab sheet (**Blackline Master #2**, 1 copy per student)
- Check for Understanding (**Blackline Master #3**, 1 copy per student)

Blackline Masters

1. Station directions and labels
2. Rock Cycle Lab Sheet (two pages)
3. Check for Understanding (Evaluation)
4. Rock Cycle songs (3)

Advance Preparation

1. Print and cut out the directions for each station (**Blackline Master #1**).
2. Prepare 11 station labels (preferably standup station labels) to identify each station for the simulation.
3. Run copies of **Blackline Master #2** for each student.

Lesson Information

Learning Objectives

1. The student will be able to use the data collected in this lesson (*condition*) to correctly (*standard*) describe their path through the rock cycle (*task*).
2. The student will be able to correctly (*standard*) state, based on their data (*condition*), that their journey through the rock cycle did not necessarily represent the whole rock cycle and that their journey may have taken longer in some places in the rock cycle (*task*).

Prior Knowledge Needed by the Students

- general familiarity with three types of rocks and rock cycle processes.

Background Information

The rock cycle explains how one rock may transform from one type to another through a variety of geological processes. The rock types are metamorphic, sedimentary and igneous. Metamorphic rock is created through the processes of heating and/or pressure. Igneous rock is created when molten rock (magma below ground or lava above ground) cools and hardens. If these processes take a long time, then crystals in igneous rock have time to grow large (like you find in granites). If the cooling and hardening takes place rapidly, then crystals can be tiny or even nonexistent (in the case of obsidian). When rocks (this can be igneous, metamorphic or sedimentary rocks) are broken down into smaller pieces (sediment), transported by wind, water or ice, and deposited, they can then undergo compaction and cementation to form sedimentary rock. However, different parts of the cycle may take longer than others... so the journey is not necessarily a smooth one or one that takes place at a constant rate.

Citation: Dawes, R.L. & Dawes, C.D. (07/14/13). Geology of the Pacific Northwest: Basics--*The Rock Cycle*
© 2001 Accessed at <http://commons.wvc.edu/rdawes/Basics/rockcycle.html>

Lesson Procedure

Engage

1. Say to the students, "Today we are going to work through a simulation on the Rock Cycle. Let's start by recalling some of the words associated with the rock cycle."
2. Write the words on the board in the order they are called out (*example: metamorphic rock, igneous rock, sedimentary rock, compaction & cementation, high temperature & pressure, weathering & erosion, sediments, to the surface, melting, magma, cooling & hardening*).
 - a (Note: Words will be used by students to construct their initial version of the rock cycle in the next step of the Engage.)
3. Say to the students, "What do you recall about how the Earth's rocks change from one form to another through the rock cycle. Show me what you can remember about the rock cycle by drawing it on a piece of notebook paper."
4. Allow students about 2-3 minutes to complete their rock cycle.
5. Distribute **Blackline Master #2** (lab sheet) to the students for today's lesson – one per student.

Explore

1. Place the dice, along with the appropriate station labels around the classroom. Introduce students to the locations of each station.
2. Say to students, "From what you know about the rock cycle, which station do you PREDICT you will visit the most? Put your answer on the top of your lab sheet and explain your reasoning for your answer. (**Blackline Master #2**)."
3. Go over the directions at the top of the lab sheet. Model how to do two or three die tosses and how to record that data on the lab sheet. Discuss what to do if students toss the same station more than once (they write down each toss every time). Emphasize to students that dice should stay on top of the desks and off the floor.
4. Assign students to their starting stations. Make sure students push in their chairs and stow their bookbags so that tripping hazards are reduced.
5. Allow data collection to take about 15-20 minutes (consider putting a countdown timer on your SmartBoard, for example: <http://www.classtools.net/education-games-php/timer>).
 - a Display the timer full screen so that the web page advertisements will not be seen. In addition, please be on the look-out for any pop-up ads that may appear while using the timer.
6. Circulate around the room to make sure that students are properly recording their data.
7. When students have begun finishing the collection of their data, have them start answering the remaining questions on the lab sheet (back of **Blackline Master #2, p. 2**).

Explain

1. Some questions you might ask students while circulating around the room and at the conclusion of data collection include,
 - *Did your prediction turn out to be correct?*
 - *Let's have a few volunteers to tell us about their journey through the rock cycle.*
 - *Did everyone follow the same route through the rock cycle? Do you think this is like the real rock cycle?*
 - *Was there anything surprising about your journey through the rock cycle?*
 - *What were some places that you spent the most time?*
 - *Why might it take a long time to leave one of the places where you spent a lot of time?*
 - *How does this simulation resemble the rock cycle? What could we do to improve this simulation's attempt to represent the rock cycle?*
 - *How do you think scientists figured out all the parts to the rock cycle?*
 - *Did just one scientist figure out the rock cycle by themselves? Explain your answer.*
 - *Who can give me their definition of "rock cycle"?*

- *Why do you think the rock cycle is called a cycle?*
2. Say to students, "Working with at least another one or two students, use your data to draw a graphic that represents your collective journey through the rock cycle. Keep in mind that your team may not actually complete a journey through all the processes and rock types."
 3. Have students present their collective journey diagram through the rock cycle to their classmates.

Expand

Students can choose one of the following:

- Have students write an essay from the view point of a rock particle as it moves through the rock cycle. Your essay could include the lengths of time spent in each location (station).
- Have students rewrite the lyrics of a popular song so that the primary concepts about the rock cycle are included. Students can sing their song for the class.

Evaluate**FORMAL EVALUATION****Blackline Master #3****INFORMAL or OPTIONAL EVALUATIONS**

1. The journey through the Rock Cycle story can be graded.
2. The rewritten lyrics of a popular song can also be graded. Students can sing their song for the class.

WRAP UP.

Bring the lesson to a conclusion by singing one of the rock cycle songs (see **Blackline Master #4**).

Supplementary Resources**Teachers**

Annenberg. (1992). *Earth Revealed* (video-on-demand series) Retrieved from

<http://www.learner.org/resources/series78.html>

Video-on-demand videos on various aspects of the Earth's rock cycle. 26 videos.

Students

McDougall-Littell, Exploring Earth: *How Do Rocks Undergo Change?* Interactive Rock Cycle Animation

<http://www.washington.edu/uwired/outreach/teched/projects/web/rockteam/WebSite/rockcycle.htm>

A visual simulation that shows the rock cycle in the context of a convergent plate boundary.

Annenberg Learner Interactives: Rock Cycle

<http://www.learner.org/interactives/rockcycle/diagram.html>

Annenberg Learner Interactives: How Rocks Change

<http://www.learner.org/interactives/rockcycle/change.html>

Provides a three page complete overview of the rock cycle complete with animations for each page. Includes a six minute challenge over the five processes that are involved in the rock cycle.

Please be aware of ads and pop-ups when using these supplemental resources.

CITATION OF SOURCES.

Based on **Regents Earth Science: Rock Cycle Activity**, accessed Summer 2003, no longer available online.

Volcano Photo Retrieved from <https://pixabay.com/en/earth-smoke-volcano-lava-erupt-46570/>

Yes, I cited all materials and resources used in this lesson.

Pamela Blanchard

Lesson author signature

Blackline Master #1

Station Directions

Compaction and Cementation		
IF you roll a:	Then this happened to you:	Then Go to:
1	After millions of years of being stuck under layers of sediment, you are now cemented together into a sedimentary rock!	Sedimentary Rock
2	You've been washed out to sea (erosion) and have been deposited (deposition) under layers of sediment in a river delta.	Stay
3	After millions of years of being stuck under layers of sediment, you are now cemented together into a sedimentary rock!	Sedimentary Rock
4	You've been washed out into a lake (erosion) and have been deposited (deposition) under layers of sediment in a river delta.	Stay
5	After millions of years of being stuck under layers of sediment, you are now cemented together into a sedimentary rock!	Sedimentary Rock
6	You've been washed into a calm part of a river (erosion) and have come to rest near the shore (deposition) under layers of sediment.	Stay

High Pressure and Temperature		
IF you roll a:	Then this happened to you:	Then Go to:
1	After millions of years of being heated and squeezed together from the pressure of the rocks around you, you have been transformed into a metamorphic rock!	Metamorphic Rock
2	You are being crushed and squeezed by the heat and pressure at a convergent plate boundary.	Stay
3	After millions of years of being heated and squeezed together from the pressure of the rocks around you, you have been transformed into a metamorphic rock!	Metamorphic Rock
4	You are being crushed and squeezed by the heat and pressure at a transform boundary.	Stay
5	After millions of years of being heated and squeezed together from the pressure of the rocks around you, you have been transformed into a metamorphic rock!	Metamorphic Rock
6	You are being crushed and squeezed by the heat and pressure at a subduction zone (convergent plates).	Stay

Sediments		
IF you roll a:	Then this happened to you:	Then Go to:
1	Water is beating the rocky shoreline and breaking off tiny pieces of sediment (physical weathering) which drift to the bottom of the ocean (erosion) where you are then deposited (deposition) in layers.	Compaction and Cementation
2	Acid rain is breaking off tiny bits of rock and forming sediments (chemical weathering).	Stay
3	Ice is wedging in between a crack in a rock and breaking off little pieces of sediment (physical weathering).	Stay
4	Water is beating the rocky shoreline and breaking off tiny pieces of sediment (physical weathering).	Stay
5	Plant roots are growing into a tiny crack in the rock and breaking off tiny pieces of sediment (physical weathering).	Stay
6	Acid rain is breaking off tiny bits of rock and forming sediments (chemical weathering) which wash down into the layers of the Earth (erosion) where you are deposited (deposition) in existing soil layers.	Compaction and Cementation

Igneous Rock		
IF you roll a:	Then this happened to you:	Then Go to:
1	You are on the surface of a volcano. Strong rain and wind has started to chip away (weathering) at your tough surface.	Weathering and Erosion
2	You are on the surface of a dormant (inactive) volcano. Plants are starting to grow into your cracks and are breaking off (weathering) small pieces of rock.	Weathering and Erosion
3	You are the bottom layer of rock on a very active volcano. Layers and layers of hot rock are above you and below you.	High Temperature and Pressure
4	Your volcanic island is close to a subduction zone. You are being pushed and squeezed by layers of Earth colliding.	High Temperature and Pressure
5	After erupting out of a volcano and cooling into rock, you fall back into the hot, molten crater.	Melting
6	Your volcanic island is close to a subduction zone. You are pushed back into the Earth's mantle.	Melting

To the Surface		
IF you roll a:	Then this happened to you:	Then Go to:
1	Once pushed to the surface, strong rain and wind has started to chip away (weathering) at you.	Weathering and Erosion
2	The plates have shifted and you are exposed to the elements of nature. Water, wind, ice, and plants are starting to break you and chip away at your surface (weathering).	Weathering and Erosion
3	The plates have shifted exposing a new part of the mountain, but there are several layers of rock still above you.	Stay
4	You've been pushed to the surface but there is a thick layer of soil covering your rock layer.	Stay
5	The rock above you has been weathered and eroded and you are now exposed to the elements of nature.	Weathering and Erosion
6	The plates have shifted and you are exposed to the elements of nature. Water, wind, ice, and plants are starting to break you and chip away at your surface (weathering).	Weathering and Erosion

Metamorphic Rock		
IF you roll a:	Then this happened to you:	Then Go to:
1	Your rock layer is close to a subduction zone. You are pushed into the Earth's mantle.	Melting
2	Your rock layer is close to an active volcano. You are pushed into the magma chamber.	Melting
3	Your rock layer is near an active convergent plate boundary. The rock layers have shifted and you are exposed.	To the Surface
4	To make way for a new road, humans have blasted through your mountain, leaving you exposed.	To the Surface
5	You are the bottom layer of rock in a very active tectonic area. Layers and layers of hot rock are above you and below you.	High Temperature and Pressure
6	Your mountain base is close to a subduction zone. You are being pushed and squeezed by layers of Earth colliding.	High Temperature and Pressure

Sedimentary Rock		
IF you roll a:	Then this happened to you:	Then Go to:
1	Your rock layer is close to a subduction zone. You are pushed into the Earth's mantle.	Melting
2	Your rock layer is close to an active volcano. You are pushed into the magma chamber.	Melting
3	The rock above you has been weathered and eroded and you are now exposed to the elements of nature.	Weathering and Erosion
4	Your rock layer has been pushed to the surface and you are now exposed to the elements of nature.	Weathering and Erosion
5	You are the bottom layer of rock in a very active tectonic area. Layers and layers of hot rock are above you and below you.	High Temperature and Pressure
6	Your rock layer is close to a transform boundary. You are being pushed and squeezed by layers of Earth sliding past each other.	High Temperature and Pressure

Melting		
IF you roll a:	Then this happened to you:	Then Go to:
1	You have melted into liquid rock under the surface of Earth.	Magma
2	As you are pushed further and further into the Earth, it's really starting to heat up!	Stay
3	You have melted into liquid rock in Earth's mantle.	Magma
4	After being pushed into a subduction zone, you are getting closer and closer to the mantle.	Stay
5	You have melted into liquid rock in the magma chamber of a volcano.	Magma
6	After being pushed toward a volcano's magma chamber, you are really starting to heat up!	Stay

Cooling and Hardening		
IF you roll a:	Then this happened to you:	Then Go to:
1	You have been erupted out of a volcano!	Igneous Rock
2	After being erupted as part of a lava flow, you are slowly making your way down the side of the volcano.	Stay
3	You were erupted out of a hydrothermal vent at a divergent boundary in the ocean floor.	Igneous Rock
4	You are beginning to ooze out of a hydrothermal vent at a divergent boundary at the bottom of the ocean.	Stay
5	You have seeped out of a weak spot in the Earth's crust and have cooled in the cracks of existing rock layers.	Igneous Rock
6	You are in the crater of a volcano that is actively erupting. You keep getting exposed to molten rock as the volcano continues to erupt.	Stay

Magma		
IF you roll a:	Then this happened to you:	Then Go to:
1	You are on the move toward the crater of an active volcano.	Cooling and Hardening
2	You are on the move toward a crack in the ocean floor.	Cooling and Hardening
3	You are being held in the magma chamber under Earth's surface.	Stay
4	You are part of the Earth's mantle.	Stay
5	You are being held in the magma chamber under Earth's surface.	Stay
6	You are part of the Earth's mantle.	Stay

Weathering and Erosion		
IF you roll a:	Then this happened to you:	Then Go to:
1	The pressure of ice wedging (physical weathering) has broken off tiny pieces of sediment.	Sediments
2	It has started to rain in your area. You can start to feel your rocky surface loosening.	Stay
3	There is an archaeological dig in your area and the scientists have been chipping away (physical weathering) at your layers to get to the fossils.	Sediments
4	The temperatures in your area are starting to drop. There is water in between the cracks of your rocky surface.	Stay
5	Heavy rain and high winds has broken pieces of your rock surface away (physical & chemical weathering).	Sediments
6	A nearby tree has released its seeds and some have landed in the cracks of your rocky surface.	Stay

Originally from NY Regents Earth Science: Rock Cycle Activity, accessed Summer 2003 (no longer available online)

STATION 1

Compaction & Cementation

STATION 1

Compaction & Cementation

High Temperature & Pressure

STATION 2

STATION 2

High Temperature & Pressure

Sediments

STATION 3

STATION 3

Sediments

STATION 4
Igneous Rock

STATION 4
Igneous Rock

To the Surface

STATION 5

To the Surface

STATION 5

Metamorphic Rock

STATION 6

Metamorphic Rock

STATION 6

Sedimentary Rock

STATION 7

Sedimentary Rock

STATION 7

Melting

STATION 8

Melting

STATION 8

STATION 9

Cooling and Hardening

STATION 9

Cooling and Hardening

Magma

STATION 10

Magma

STATION 10

Weathering and Erosion

STATION 11

STATION 11

Weathering and Erosion

Rock Cycle Simulation

Thinking Ahead and Making a Prediction.

From what you know about the rock cycle, do you PREDICT that rocks will spend the same amount of time at each station? Do rocks cycle through all of the parts of the rock cycle equally?

Prediction: _____

Explain your answer: _____

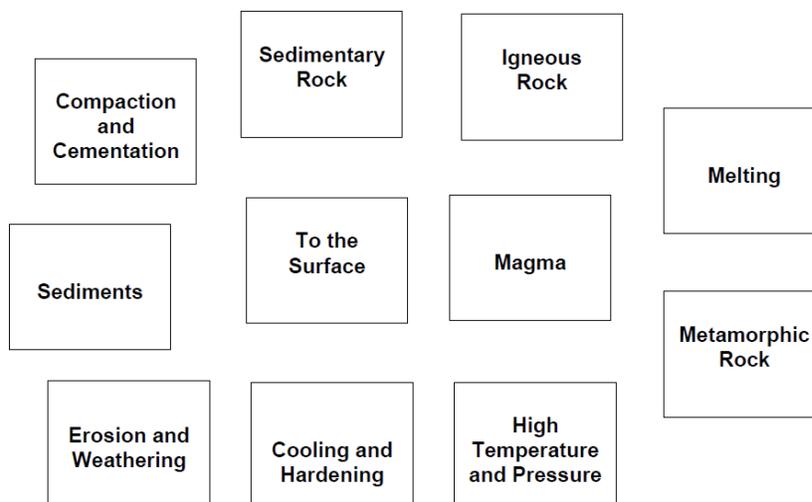
Directions. Record the station where you are starting your rock cycle journey below. Roll the die at your station and record where it tells you to go next to the Number 1. Go to the station that your die indicated. You will do this each time you roll the die. If you roll the die and it indicates you are to stay at the station, then write the station that you are remaining at for that roll number and wait your turn to roll the die again.

Data. Record the station that you visit during your journey as a rock.

Roll #	Station Name
Start	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Roll #	Station Name
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
Last roll	

Diagramming your journey. Next, draw an arrow from your starting station to the station that you rolled on your first die toss. Label the arrow with the number "1". If you roll the die and it indicates you are to stay at the station, draw a loop back to the station and label it with the appropriate number. Do this for all your die tosses.



Blackline Master #2, p. 2**Data Analysis. Thinking about your data.**

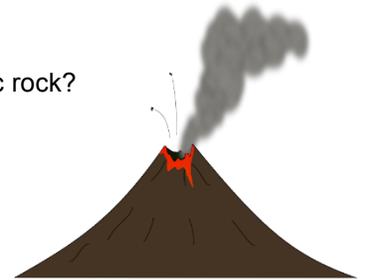
1. Was your prediction that you made at the start of the simulation correct? Explain.
2. What does your data tell you about a rock particle's journey through the rock cycle?
3. Summarize your journey through the stations, noting where you spent the most time and where you did not go.
4. Based on your data and your knowledge of landforms like volcanoes, dunes, mountains, etc., make a prediction about where you think your rock might be located. Explain your thinking.
5. Explain why the rock cycle is called a "cycle."

Blackline Master #3

Name _____ Date _____ Student No. _____

Checking for Understanding: Rock Cycle Journey

- ___ 1. What process happens to change igneous or sedimentary rock to metamorphic rock? (LO#1)
 - A. cooling of magma
 - B. compaction
 - C. weathering and erosion
 - D. heat and pressure



- ___ 2. A rock spends the same amount of time in each stage of the rock cycle. (LO#2)
 - A. True
 - B. False

Explain your answer.

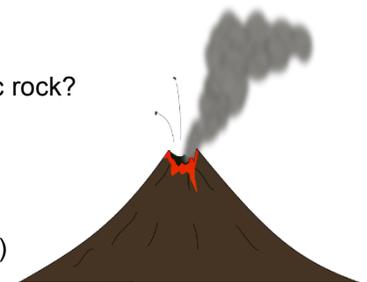
- 3. Briefly explain in your own words why the rock cycle is really a cycle. (SC.7.E.6.2)

- 4. Briefly explain in your own words a limitation of the rock cycle model we used in this activity. (SC.7.N.3.2)

Name _____ Date _____ Student No. _____

Checking for Understanding: Rock Cycle Journey

- ___ 1. What process happens to change igneous or sedimentary rock to metamorphic rock? (LO#1)
 - A. cooling of magma
 - B. compaction
 - C. weathering and erosion
 - D. heat and pressure



- ___ 2. A rock spends the same amount of time in each stage of the rock cycle. (LO#2)
 - A. True
 - B. False

Explain your answer.

- ___ 3. Briefly explain in your own words why the rock cycle is really a cycle. (SC.7.E.6.2)

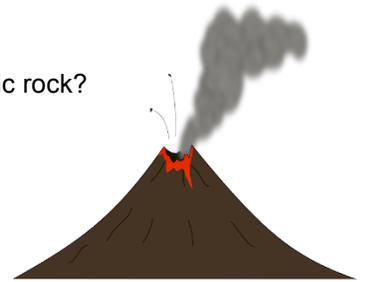
- ___ 4. Briefly explain in your own words a limitation of the rock cycle model we used in this activity. (SC.7.N.3.2)

Name _____ Date _____ Student No. _____

Checking for Understanding: Rock Cycle Journey

- ___ 1. What process happens to change igneous or sedimentary rock to metamorphic rock?
(LO#1)
- A. cooling of magma
B. compaction
C. weathering and erosion
D. heat and pressure CORRECT

- ___ 2. A rock spends the same amount of time in each stage of the rock cycle.
(LO#2)
- A. True
B. False CORRECT



Explain your answer.

Some processes in the Rock Cycle take longer than others to complete. For instance, once magma cools and hardens, it can remain underground for thousands of years before it might be uplifted to the surface and erosion might begin to take place.

- ___ 3. Briefly explain in your own words why the rock cycle is really a cycle. (SC.7.E.6.2)
- The Rock Cycle is a cycle because pieces of rocks move through parts of the larger rock cycle and eventually may return to where they start. Sometimes they get "stuck" in a small portion of the cycle, going through two or three processes and/or types of rock. In this simulation, a particular piece of rock (i.e., a student) rarely travels through all 11 stations. However, when everyone compares their experiences, we are able to piece together the entire Rock Cycle.*
- ___ 4. Briefly explain in your own words a limitation of the rock cycle model we used in this activity. (SC.7.N.3.2)
- One limitation is that we cannot accurately account for time in this particular model. These processes move at geologic rates and do not occur in a time span of 45 minutes. Another limitation is that we do not account for where these processes take place in relationship to layers of the Earth, plate tectonics, etc.*

Rock Cycle Song

(Sing to the tune of "Row, Row, Row Your Boat")

SEDIMENTARY rock

Has been formed in layers
Often found near water sources
With fossils from decayers.

Then there's **IGNEOUS** rock
Here since Earth was born
Molten Lava, cooled and hardened
That's how it is formed.

These two types of rocks
Can also be transformed
With pressure, heat and chemicals
METAMORPHIC they'll become.

Source: http://cmase.uark.edu/teacher/workshops/GEMS-lessons/Rock_Cycle_Song.pdf

Karaoke version: <http://www.youtube.com/watch?v=F5YSedeq6i0>

iRock Rap

From Barker, B. (2009) *iRock Rap*. Earth Science Chapter 4 – Song Lyrics. Accessed at <http://brambarker.com/scirave/es4lyrics.htm> Download free mp3: <http://brambarker.com/scirave/FinalMixes/iRock.mp3>

I can rap it, I can rock it
like a volcano so hot I'm
at the center of the Earth
to melt it down and hip and hop it
making magma out of rock
and when it cools again I'll sock it to you
Igneous rock it to ya!

The rock cycle, is elementary
magma cools to form igneous crumbles to sedimentary
Sedimentary rock is compacted naturally
like all those layers that you see in the Grand Canyon,
that's what we call
"strata"

Limestone in the sea is made of remains of tiny organic things that used to be
living but now have become sedimentary rock!
The rock cycle, is elementary magma cools to form igneous crumbles to
sedimentary

From igneous, and sedimentary
to metamorphic
and then of course it
goes back to the beginning
I've got the Ace I've got the King
I hold the cards twenty-four/seven
On a scale of one to ten of the hardest I am eleven
Scratch a diamond every time I find 'em in the rough. I'm into rhymin' science all
the time and so you'll find me talking metamorphic rocks and when their
minerals align to look like pages in a book it's foliated
metamorphic rocks have undergone a change it's how they're made from
pressure, heat, or both and now the most amazing thing is I've still got the
Ace, the King and now your precious diamond ring
my metamorphic bling
I float, I sting
I wrote this thing to gloat and sing of understanding metamorphic rock!

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Mr. Lee - Rock Cycle rap

Rapped to "Still Fly" by Page featuring Drake.

Mr. Lee. (Oct 17, 2010) Rock Cycle Rap. Accessed at <https://www.youtube.com/watch?v=rkGVE6wNAzo>

(Hook)

Rock cycle
Round and round
Like the wheels on the bus rolling over
the ground
Igneous, sedimentary, metamorphic, for
sure it's
Fun just like it sounds
Sedimentary rocks are made
When three things happen over many
days
Deposition, compaction, cementation
Makes them form ok, ok

(Verse 1)

I know there's more exciting things than
rocks
Like chillin' with your friends or playing
Xbox
But I bet that you gon' see it on the MSA
Hear me out, listen to what I'm about to
say
Igneous rocks form when volcanos erupt
Because when the lava finally gets cool
enough
The molten material begins to harden
And igneous rocks are formed, ballin'
Formed underground means intrusive
Formed above ground means extrusive
This song is so nice not abusive
Rocks everywhere they not elusive
Second type is sedimentary
Big words like this sound so scary
Ha, but there's no need to be scared
Just remember that these rocks have a
lot of layers

(Verse 2)

Each layer is made up of sediment
Which is soil, small rocks, and whatever
man
And it was all laid down by deposition
At the bottom of a river then collision
The layers get pressed together by
compaction, there's just so much action
and I'm askin' for you to know that the
top layers push down on the ones below
Cementation yeah glues it all together
sediment that's stuck together is just so
much better
And if you lucky you might discover
some fossils
They even older than the food be at
McDonald's
Clap your hands, we have sedimentary
rock
But there's a third type and I hope that
you haven't forgot
Metamorphic rocks are made with heat
and pressure
Let me sing it to you, "heat and
pressure"

(Hook)