

# Proficient

# Sample Body of Evidence

# Science

## Grade 4 – First Reporting Period

## Earth Science/Investigation & Experimentation

This sample is intended to demonstrate the essential elements of a body of evidence. The evidence includes:

- Student responses to Grade Level Prompts (identified in the Recommended Body of Evidence)
- Work from in-class investigations

*In this SAMPLE Body of Evidence, the essential elements are incorporated in a student's science notebook.*

*Important Note:*

*For the first two grading periods, students are evaluated based upon their progress toward end-of-year standards. Students who receive a mark of "proficient" for the first and second grading periods are making consistent and adequate progress toward achieving end-of-year expectations. In the final reporting period, the report card marks reflect a student's actual achievement of the cumulated skills, strategies, and concepts identified in the California frameworks and content standards (SBRC, 2007).*

**Standards Based Report Card  
Science Marking Worksheet – First Reporting Period  
Fourth Grade**

**Student: SAMPLE Body of Evidence**

Strand	Evidence	Notes on Quality	Report Card Mark
<p><b>EARTH SCIENCE</b></p> <p>The properties of rocks and minerals reflect the processes that formed them.</p> <p>Waves, wind, water, and ice shape and reshape Earth's land surface.</p>	<p><u>Prompt #3</u> No. 7 – Science Notebook</p>	<p><u>Academic Language</u> Minerals, gravel, salt crystals, transparent,</p>	<p>Advanced</p>
	<p><u>Prompt #4</u> No. 10 Science Notebook</p>	<p>properties, hardness, luster, cleavage, streak, granite, weathering, canyons</p>	<p>Proficient</p>
	<p><u>Prompt #5</u> No. 15 Science Notebook</p>	<p><u>Scientific Concept</u></p>	<p>Basic</p>
	<p><u>Prompt #6</u> No. 19 Science Notebook</p> <p>"How does weathering affect rocks?"</p> <p>"How does acid rain affect rocks?"</p> <p>"How do sand and rocks get deposited?"</p>	<p>"Mineral #2: triangle-shaped, white, non-sharp edges, hard, bumpy, shiney, non-transparent"</p> <p>"put vinegar to see if it bubbles, if it bubbles it has calcite, but if it doesn't than it doesn't have calcite."</p> <p>"shaked the container for 2 mins." "I noticed all this "powder" that came from the rock and that's when I thought that all 4 rocks got a little smaller."</p> <p>Properties are, "color, hardness, shreak (<i>streak</i>), luster, cleavage"</p> <p>"igneus: formed from magma or lava that hardens and crystallize"</p> <p>"metamorphic: formed from high pressure..."</p> <p>"sedimentary: tiny bits of rock and minerals get "stuck" together...under pressure"</p> <p>"the water... form the delta that formed space for the water to flow through"</p>	<p>Below Basic</p> <p>Not Assessed</p>

**Science Marking Worksheet – First Reporting Period (continued)**  
**Fourth Grade**

<p><b>INVESTIGATION &amp; EXPERIMENTATION</b></p> <p>Scientific progress is made by asking meaningful questions and conducting careful investigations.</p>	<p>"What properties can geologists use to study rocks?"</p> <p>Scratch Test - Mineral Hardness</p> <p><u>Granite Materials</u> No. 19 Science Notebook</p> <p>"How can we determine which minerals are in the rock granite?"</p>	<p><u>Data Collection</u> Mock Rock: Diameter: 4 ½ cm circumference: 16 cm Depth: 1 ½ cm Mass: 44g</p> <p>Scratch Test table (science notebook page 8)</p> <p>Properties of Minerals #1-4 table (notebook page 13) Granite Materials Data</p> <p><u>Use of Data</u> Uses data to determine order of mineral hardness</p> <p>Uses data to determine which minerals are in granite</p> <p>"I think we can use the properties of minerals... some of the properties are the color of the mineral, harness, shreak. luster, cleavage, and if the mineral is magnetic or not... testing it with calcite by putting vinegar on a mineral and seeing if it bubbles..."</p>	<p>Advanced</p> <p><b>Proficient</b></p> <p>Basic</p> <p>Below Basic</p> <p>Not Assessed</p>
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San Diego Unified School District  
**Body of Evidence Rubric**  
**Science**

Indicators	Advanced	Proficient	Basic	Below Basic
Academic Language	Student uses precise vocabulary and extends to new contexts.	Student correctly uses vocabulary related to the content and learning experiences.	Student can use some of the specific vocabulary they have been learning.	Student does not yet use specific vocabulary they have been learning.
Scientific Concept	Student is able to extend and apply what they have learned to new contexts by building explanations and stating claims supported by evidence. Student raises new questions and/or applies learning to new contexts.	Student shows understanding of content. Student can make simple claims and provide evidence to support the content. Connections are made between relevant pieces of information.	Student shows some understanding of the content and/or misconceptions. May be able to state a fact, or identify a simple procedure to be performed.	Student work shows limited understanding. Student presents an incorrect explanation of the science content.
Use of Data/Communication	Student uses data from multiple sources to make connections and cites evidence to support scientific concepts	Student uses data as evidence to support scientific claims and conclusions.	Student gives relevant information and responses correlate with the concept, but explanation is limited or incorrect.	Student uses data incorrectly and/or does not support claims with evidence.
Data Collection/Use of Tools	Accurately uses appropriate grade level appropriate tools to gather, display, and analyze.	Data is accurate and appropriately displayed and labeled.	Data collected is accurate but not displayed appropriately OR Data collected is incorrect and displayed appropriately.	Errors in data interfere with ability to use the data collected.

This rubric is intended for the analysis of the science portion of a student's Body of Evidence. Each individual piece of student work may not include all four categories, however a complete body of evidence should. A student must show proficiency in all four categories to earn a Proficient mark on the report card.

SAMPLE BODY OF EVIDENCE  
 Grade 4 Earth Science  
 In-class Investigation

Question

What properties can geologists use to describe rocks?

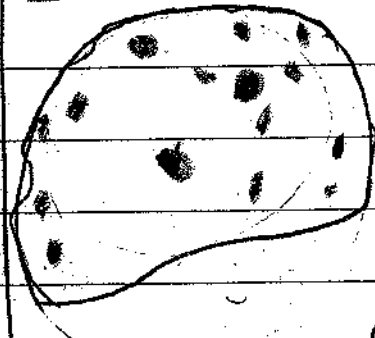
Prediction

I think that geologists use the color of the rock, what shape a rock is, or maybe even how the rock looks and feels.

Evidence

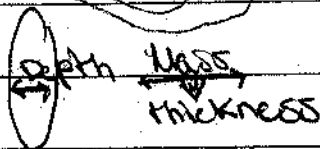
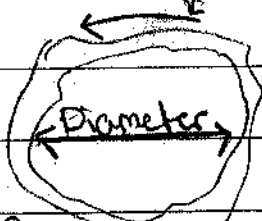
Geologists - Person who studies the earth  
 a person who studies earth

Mock Rocks - pretend



Written observation:  
 • there is 10 green dots  
 • there is 4 red dots  
 • there is more dots on one side than the other  
 • there is 14 dots all together

Circumference



View of your rock

Diameter:  $4\frac{1}{2}$  cm there is one white  
 Circumference: 16 cm dot on the rock  
 Depth:  $1\frac{1}{2}$  cm it looks like a fo  
 Mass: 44g it's very rough  
 the shape is like an oval

SAMPLE BODY OF EVIDENCE  
Grade 4 Earth Science  
In-class Investigation

Analysis

Some things that a geologist could use to identify a rock could be feeling how it feels, what it looks like, what it has on it, and maybe even what type of rock it is.

Question

What ingredients make up a mock rock? How does this help us with a real rock.

Prediction

Some ingredients can be clay or minerals. This helps us with a real rock because this rock can have the same things as the fake mock rocks.

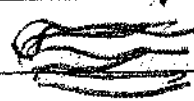
Evidence

Geologists use picks to take apart a rock

Gravel ↓



Water ↓



Sand ↓



Analysis

I think that the ingredients of the mock rock were →

SAMPLE BODY OF EVIDENCE  
 Grade 4 Earth Science  
 In-class Investigation

gravel, sand, and a little bit of water. I think this because every thing is made to make a fake mock rocks and these things look like what I said.

Question

How can we find out what materials are in the "gray" materials?

Prediction

I think that we can evaporate the "gray" material so that it can break apart then we can find out what the "gray" thing is.

Evidence

Shaken words

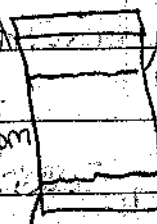
Settled

water words

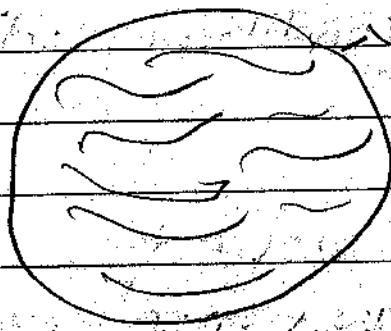
water  
sand  
gray  
pieces



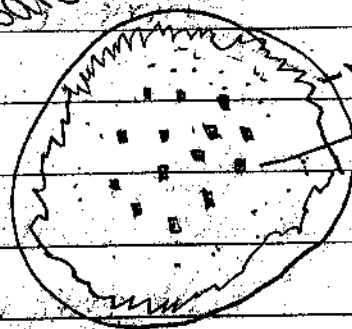
The water turned a yellow color. The water is not seen through. At the bottom there is pieces of gray material and wet sand.



The water turned clear. The gray material is all evaporated and looks nasty.



water



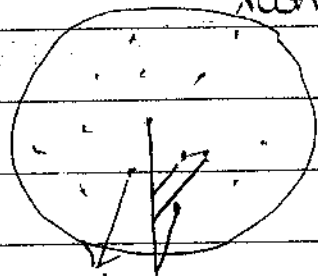
white chemical flakes

SAMPLE BODY OF EVIDENCE  
Grade 4 Earth Science  
In-class Investigation

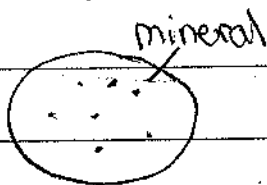
Analysis

We found out that little salt crystals were in the gray material. We also found out that the water evaporated when we let it lay there for 5 days. We did by putting the gray material in the vial then pouring it in the cup and after 5 days crystals grew.

Further Learning



minerals



Rocks have many properties.

- Color
- Shape
- size - diameter
- texture (feel) - mass
- circumference

Geologists use rock properties to identify rocks.

Rocks are made of minerals.

Minerals are materials that cannot be broken down - Pure earth material

• water can separate some rock materials

• some solids, like salt, dissolve in water

• you can separate dissolved solids in water with evaporation

• salt minerals from a crystal

SAMPLE BODY OF EVIDENCE

Grade 4 Earth Science

Prompt #3

Question

What properties can we use to identify minerals?

Prediction

I think that we can use magnifying glasses to look up close into the minerals. We can use the properties of how it feels, what it looks like, and maybe even what type of mineral it is.

Evidence

#1 white, transparent (kind of see through) cube-shaped, sharp edges, flat surfaces, smooth, darker white spots, shiny	#2 triangle-shaped white, non sharp edges kind of yellow, hard, bumpy, shiny, non transparent
#3 white, non trans has little shiny spots, non sharp edges, kind of pink, rough surface	#4 green and some white, shiny, kind transparent, sharp edges, rough surface, looks like a crystal

Analysis

Today I learned that there are many kinds of minerals. Today I wrote about 4 different kinds of minerals. Mineral number 1 was cubed-shaped, number 2 was triangle-shaped, number 3 was a little shiny and number 4 was rough and had kind of sharp edges

**SAMPLE BODY OF EVIDENCE**

**Grade 4 Earth Science**

**Prompt #3 (continued)**

Question

How can we identify minerals based on their hardness?

Prediction

We can do this by maybe hitting it with a hammer or with something like that. We can also maybe scratch it with a sharp tool.

Evidence

MINERAL	TOOL			
	Fingernail	Aluminum (nail)	Steel (paper clip)	How many tools could scratch this mineral?
1 Calcite	NO	Yes	Yes	2
2 Quartz	NO	NO	NO	0
3 Gypsum	Yes	Yes	Yes	3
4 Fluorite	NO	NO	Yes	1

List the four minerals from hardest to softest.

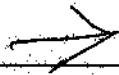
- Quartz
- Fluorite
- Calcite
- Gypsum

Hardness information:

Quartz is hardest.

Gypsum is softest.

Fluorite is harder than Calcite.



SAMPLE BODY OF EVIDENCE  
Grade 4 Earth Science  
Prompt #3 (continued)

Analysis

Today I learned that minerals can sometimes get scratched. We did an experiment and learned that Quartz was the hardest because it didn't get scratched at all. Fluorite was the second hardest, calcite was the third, and Gypsum was the fourth, so it was the mineral that was mostly scratched.

SAMPLE BODY OF EVIDENCE  
Grade 4 Earth Science  
Prompt #4

science

Question

How can we further prove the rocks contain the mineral calcite?

Prediction

I think that we can further prove that the rocks have calcite by comparing calcite to rocks and see the similarities like they both have.

Evidence

Diagrams of rock samples with handwritten notes:

- Basalt: NO Evidence
- Limestone: has calcite, had some white in it
- Sandstone: was a little clear
- Marble: had a lot of white stuff, has calcite in it
- Calcite: very much white things inside it
- Vinegar: was a little clear and a little white

Analysis

Today in science we were trying to further prove that marble and limestone have calcite. We first let the water evaporate. Then we saw if this water turns into residue or not. Last time we dissolved vinegar and a rock and it started to fizz. But today we also saw how the rocks reacted to the calcite and that's when we discovered that limestone and marble had calcite in it.

SAMPLE BODY OF EVIDENCE

Grade 4 Earth Science

Prompt #4 (continued)

Further  
learnings

• sometimes we need more than one test to prove evidence.

• Evaporation separates solids from liquid - vinegar      calcite

• Calcite bubbles <sup>(reacts)</sup> when in contact with acid.

• Calcite is the most common mineral.

• There are ③ types of rocks:

• igneous: formed from magma or lava that hardens and crystallize.

• Metamorphic: formed from high pressure and heat below Earth's surface. They used to be other rocks that changed form.

• Sedimentary: tiny bits of rocks and <sup>and other items/</sup> minerals (sediments) get "stuck" together in layers under pressure.

SAMPLE BODY OF EVIDENCE  
Grade 4 Earth Science  
Prompt #5

**Question** How can we use the properties of minerals to identify them?

**Prediction** I think that we can do this by telling what the minerals look like, shaped like, and stuff like that. I also think that we can draw out what the mineral has on it.

<b>evidence</b>	①	②
	black, shiny, glittery	shiny, silver / gray,
	light gray, rough	more smooth, flat areas
	* <u>streak</u> : blackish red metallic and	* <u>streak</u> : gray (dark)
	* <u>luster</u> : nonmetallic	<u>luster</u> : metallic
	* <u>cleavage</u> : no	<u>cleavage</u> : no
	* <u>magnetic</u> : yes	<u>magnetic</u> : no
	③	④
	gold, brown, rough,	black, some brown,
	sharp edges, shiny	rough, some shiny parts
	<u>streak</u> : black	<u>streak</u> : black
	<u>luster</u> : metallic	<u>luster</u> : metallic
	<u>cleavage</u> : no	<u>cleavage</u> : no
	<u>magnetic</u> : yes	<u>magnetic</u> : yes

**SAMPLE BODY OF EVIDENCE**  
**Grade 4 Earth Science**  
**Prompt #5 (continued)**

#	Mineral	Color	Hard- ness	Streak	Luster	Cleavage	Other
1	Calcite	white/ transparent	3	white	non metallic	Yes	no magnetic
3	Gypsum	white	2	white	non metallic	Yes	no magnetic
4	Fluorite	green	4	white	non metallic	Yes	no magnetic
2	Quartz	white/ some brown	7	clear	non metallic	Yes	no magnetic
1	Hematite	black	5 to 6	blackish red	both	no	yes magnetic
2	Galena	silver/ gray	2.5	dark gray	metallic	no	no magnetic
3	Pyrite	gold/ brown	6 to 6.5	black	metallic	no	yes magnetic
4	Magnetite	black/ brown	3.5 to 4	black	metallic	no	yes magnetic

**MINERAL IDENTIFICATION TABLE**

Date \_\_\_\_\_

**Analysis**

Today in science we were looking at the color, hardness, streak, luster, cleavage, and if it has magnetism of 8 different minerals. In this experiment we scratched the mineral on a tile to find the streak. We looked if a mineral had metal to find the luster. We looked if the mineral had flat faces to find the cleavage. And we put a →

SAMPLE BODY OF EVIDENCE  
Grade 4 Earth Science  
Prompt #5 (continued)

magnate on the mineral. the found out if it was magnetic or not. When we did all these things we recorded our experiment in our properties table. Many of these minerals were not magnetic. Some of these minerals had many properties that other minerals don't have. I did learn a lot from this experiment that we did today in science.

SAMPLE BODY OF EVIDENCE  
Grade 4 Earth Science  
Prompt #6

Question

How can we determine which minerals are in the rock Granite?

Prediction

I think that we can use the properties of minerals to determine which minerals are in the rock granite. I also think that we can use the experiment if a mineral has calcite in it or not. Some of the properties are the color of the mineral, hardness, streaks, luster, cleavage, and if the mineral is magnetic or not. What I mean by testing it with calcite is by putting vinegar on a mineral and seeing if it bubbles. If it bubbles then it has calcite, but if it doesn't then it doesn't have calcite. This is what I would do to determine which minerals are in the rock Granite.

SAMPLE BODY OF EVIDENCE  
Grade 4 Earth Science  
Prompt #6 (continued)

Evidence

**GRANITE MATERIALS**

**FELDSPAR**

Color: pink  
Hardness: fingernail no aluminum no steel no  
Other observations streak: white / non metallic /

**QUARTZ**

Color: white  
Hardness: fingernail no aluminum no steel no } hard  
Other observations streak: clear, non metallic, /  
cleavage

**CALCITE**

Color: white, transparent  
Hardness: fingernail no aluminum yes steel yes } soft  
Other observations streak: white, non metallic, has /  
cleavage

**MICA**

Color: black  
Hardness: fingernail yes aluminum yes steel yes  
Other observations streak: yellowish gold non metallic /  
no cleavage

**HORNBLende**

Color: black  
Hardness: fingernail no aluminum no steel no  
Other observations: streak: white / non metallic /  
no cleavage

**GRANITE**

Which minerals do you think are in granite?  
What is your evidence?

Analysis

for analysis  
flip over paper

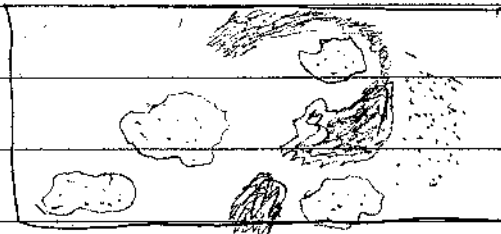
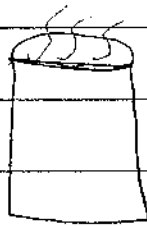
SAMPLE BODY OF EVIDENCE  
Grade 4 Earth Science  
In-class Investigation

Science

**Question** How does weathering affect rocks?

**Prediction** I think that this affects rocks because the weather makes them sometimes changes rocks that bigger some weather breaks them down and make them small.

**Evidence** In the experiment we first put the 4 pieces of granite inside a container and shook the container for 2 minutes. Then, we took the lid off the container and all this smoke came out.

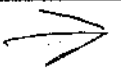


Then, I noticed all this "powder" that came from the rocks and that's

when I thought that all 4 rocks got a little smaller.

abrasion: rocks rub & bump into one another.

Physical Weathering: rocks break into smaller pieces w/o changing what the rock is made of.



SAMPLE BODY OF EVIDENCE

Grade 4 Earth Science

In-class Investigation

Analysis

Today in science we were looking at what would change

weathering

in rocks when it's weathering. The steps that we

steps

did to figure this out were that first, we put 4 pieces

jar

of granite into a jar and then we started to shake

shaking

the jar. Then, we looked at the difference of the rocks.

granite

I noticed that the granite had physical weathering. I

difference

also noticed that the size of the rock changed because

size

at first the rocks were a little big the when we took

abrasion

them out of the jar they got/looked smaller. One other

physical

thing that I noticed is that the rocks (granite) came

weathering

out of the jar with abrasion.



Question

How does acid rain affect rocks?

Prediction

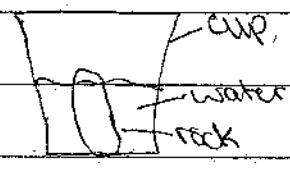
Acid affects rocks because when a rock that has calcite in a rock it starts to bubble. So, acid makes rocks bubble when they have calcite.

Evidence

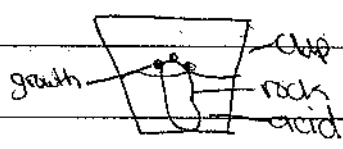


The Limestone did not bubble when I put it in the strong acid.  
 Limestone does not have calcite.  
 Nothing happened when it was put in vinegar.

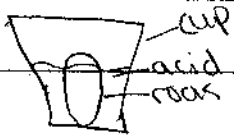
Add on



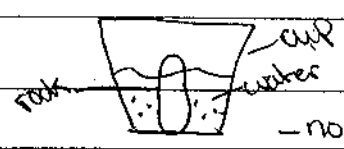
- clear water  
 - rock is wet  
 - do not see any pieces off the rock  
 (no residue)



- liquid is milky  
 - pieces of rock are on bottom of cup  
 - orange stuff is growing on rock



- liquid is milky  
 - rock got a little smaller  
 - there is residue at the bottom of cup

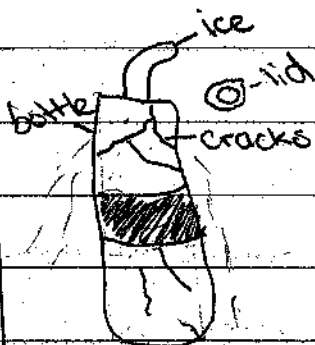


- water is clear  
 - water has a little bubbles  
 - rock is wet  
 - no residue

SAMPLE BODY OF EVIDENCE  
Grade 4 Earth Science  
In-class Investigation

Science

Evidence



- In the bottle there were many cracks
- the ice was sticking out
- the ice broke the lid and the lid fell off.

Analysis

In science we were trying to find out what happens to rocks when they are put in acid. The first thing we did was put limestone in acid water. When we put it in the acid water it did not bubble. So, if it didn't bubble I did know that limestone did not have calcite and it did have any reaction to the acid. Then, we noticed that there were some little dots in the cup where the limestone was. They looked like little pieces of residue. After that experiment we filled a glass jar (which was acting like a rock) with water and closed it. Then, we put it in a plastic bag and put it in the freezer. When we took it out the lid was broken off. So, when you put a rock in acid water it turns into ice and shows some cracks on the rocks.

SAMPLE BODY OF EVIDENCE  
Grade 4 Earth Science  
In-class Investigation

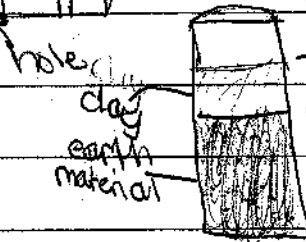
**Question** How do sand and rocks get deposited?

**Prediction** I think that sand and rocks get deposited by weathering because when rain get on sand it makes it form sometimes into rocks.

**Evidence**



When the water started to go, it started to form the delta that formed spaces for the water to flow through.



- the earth material is heavier
- when we mixed it is started to mix
- when stopped shaking it, it started to take place and calm down.

It was moving faster where the arrows are, I think that it was moving faster there because that's where all the water was going