Example Assessment
Grade 7 Earth and Space Science

This is an example classroom assessment created by Illinois educators as part of the Illinois State Board of Education (ISBE) Local Assessment Support (LAS) Project. ISBE encourages educators to modify example assessments to meet the needs of their individual educational context. Please note that the authors have provided suggestions for grade level use, applicable standards, data use, as well as possible accommodations, modifications, or alternative assessments. These suggestions are not inclusive of all possible uses and applications of this assessment.

This assessment serves as a possible example of a classroom assessment and its use is not required.

More information concerning the LAS project may be found here:
www.isbe.net/assessment/htmls/balanced-asmt.htm

Content: Earth and Space Science
Grade Level: Grade 7

Purpose
The purpose of this assessment is to inform teaching practices and provide information to students about their current level of achievement at a given period of time. Students will demonstrate their ability to construct an explanation based on evidence concerning the form and shape of mountains.

Standards
New Illinois Learning Standards - Science:

- MS-ESS2-2: Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.

Data Use
This assessment may be used to evaluate students understanding of Earth's major systems, plate tectonics, the kind and rate of plate movement, constructive and destructive forces, scale, proportion and quantity within a claim-evidence-reasoning framework.

Accommodations, Modifications, and Alternate Assessments
Students may be allowed extended time, different presentation options, sentence starters and word banks, and an organizational chart to develop scientific explanations.

Materials

- Pictures of two different mountain ranges located in different parts of the world (i.e., Rockies and Himalayas)
- Maps from the last 200 years showing how the continents moved
- Diagrams of the shapes of the continents
- Pictures of the plant and animal fossils found on the different continents
- Lists of rocks found on the different continents
- Assessment tasks/prompts
- Scientific explanation chart
- Pencil and colored pencils
- Claim-Evidence-Reasoning Rubric

Directions
Please note that these tasks take place over multiple lessons.

Task 1: Students develop a model and then use this model to make a claim based on evidence about the following question: Why are some mountains bigger than others?

Session 1: After student investigation on Earthquakes and volcanoes:

1. Distribute paper and pencils.
2. Distribute the Task 1 Prompt: "Why are some mountains bigger than others?"
3. Allow students approximately 20 minutes to complete the task of creating a model.
4. Collect responses.
5. Check for student understanding.

Session 2: After student investigation on mid-ocean ridges and rises and colliding plates:

1. Redistribute student models.
2. Allow students approximately 20 minutes to modify and revise their model based on the new information they learned during their investigation.
3. Collect responses.
4. Check for student understanding.

Session 3: Constructing an explanation using a model:

1. Redistribute student models.
2. Allow students approximately 20 minutes to use their model to construct an explanation about the Task 1 Prompt: "Why are some mountains bigger than others?"
3. (OPTIONAL STEP) Allow students to exchange models and scientific explanations. Students may identify areas where the model doesn't make sense to them, where more evidence may be needed, or areas where the author may need to explain his or her reasoning more clearly.
4. Collect responses.
5. Check for student understanding.

Task 2: Students use scientific reasoning to make a claim based on evidence collected from content covered prior to the interim task about the following question: Can ice change the surface of a mountain?

1. Distribute the scientific explanation chart, which students will use to scaffold their responses.
2. Distribute the Task 2 Prompt: "Can ice change the surface of a mountain?"
3. Allow students approximately 20 minutes to complete the scientific explanation chart and create a written response.
4. (OPTIONAL STEP) After students have completed the task they may exchange papers and use the Claim-Evidence-Reasoning Rubric to evaluate their peer's response. Students may provide written and verbal feedback. This step may take approximately 30 minutes.
5. Collect responses.
6. Evaluate each student's response using the Claim-Evidence-Reasoning Rubric, noting discrepancies between the peer reviewer and his or her own review.
7. Note any themes or common areas of success and challenges for the class. Share these with the class, and if needed, spend additional time on challenging topics.

Task 3: Students use scientific reasoning and evidence gathered in an activity to make a claim about the question: Did the land on Earth start out as one giant continent?

In the activity, students rotate through different stations that include readings and activities where they obtain evidence scientists have collected to investigate this question, such as shapes of the continents, the types of plant and animal fossils found on the different continents, and the types of rocks found on the different continents (adapted from McNeill & Krajcik, 2012).

Repeat the following steps at least three times to ensure all students are able to attend to each artifact station and complete their scientific explanation chart:

1. Set up the artifact stations (prior to start of class).
2. Distribute the scientific explanation charts.
3. Distribute the Task 3 Prompt: "Did the land on Earth start out as one giant continent."
4. Assign students an order to their rotation through the stations.
5. Allow students approximately 30 minutes to explore each artifact station and begin filling out the scientific explanation chart.
6. Collect students' scientific explanation charts.
7. Check for student understanding.

The teacher then evaluates each student's scientific explanation chart using the Claim-Evidence-Reasoning Rubric. The teacher should note any themes or common areas of success/challenges and spend additional time addressing any challenges identified.

Task 4: Students use scientific reasoning and evidence gathered throughout the instructional unit to make a claim about the question: Why do these mountain ranges look different?

1. Distribute the scientific explanation charts.
2. Distribute the Task 4 Prompt: "Why do these mount ranges look different?"
3. Allow students an appropriate amount of time to complete the chart, create a written extended response, and prepare a brief oral presentation.

4. Collect the written responses and have students present their oral presentations.
5. Evaluate each student's response and presentation using the Claim-Evidence-Reasoning Rubric.
6. The teacher should note any themes or common areas of success/challenges and spend additional time addressing any challenges identified.

Additional Materials

Scientific Explanation Chart

Name:
Period:
Date:

The QUESTION: _____

_____

CLAIM: When you start your response to the question, state your claim.

_____

_____

_____

EVIDENCE: Support the claim with accurate, sufficient, and appropriate evidence. Use the chart below to state your evidence and explain what the evidence means.

	My Evidence Support your claim with accurate evidence form your investigations, readings, discussions, and research. Be SPECIFIC and RELATE DIRECTLY to your CLAIM!	**My Interpretations** Explain what your evidence means. How does it relate to the claim? Use words such as: means, tells, shows, and demonstrates.
Evidence #1		
Evidence #2		
Evidence #3		

Evidence #4		
Evidence #5		
Evidence #6		

REASONING: Thoroughly relate your evidence to a scientific principle in order to support the claim.

The scientific principle states _____

_____

_____

The evidence shows _____

_____

_____

Therefore, _____

_____

_____

Claim-Evidence-Reasoning Rubric

	Below	Approaching	Meeting	Exceeding
Claim	The claim does not address the purpose of the lab, is unclear or incomplete, and does not address the critical content or concept of the lab.	The claim addresses the purpose of the lab but is unclear or incomplete and may be missing some critical content or concepts of the lab.	The claim addresses the purpose of the lab, is clear and complete, and contains all critical content or concepts of the lab.	The claim addresses the purpose of the lab, is clear and complete, and contains all critical content or concepts of the lab. In addition, the student includes original ideas or predictions.
Evidence	The evidence does not support the claim.	The evidence supports the claim but data is unclear or incomplete.	The evidence supports the claim using clear and complete data.	The evidence supports the claim using clear and complete data. In addition, the student presents the evidence in a narrative form.
Reasoning	The reasoning does not explain the connection between the evidence and the claim.	The reasoning explains the connection between the evidence and the claim but is unclear or incomplete.	The reasoning clearly explains the connection between all the evidence and the claim.	The reasoning clearly explains the connection between all of the evidence and the claim. In addition, the student includes original ideas or applications.
Notes:				