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DepED
DEPARTMENT OF EDUCATION

Lesson Exemplar for Science

Quarter 3
Lesson
1

Lesson Exemplar for Science
Quarter 3: Lesson 1 of 8 (Week 1)
SY 2025-2026

Development Team

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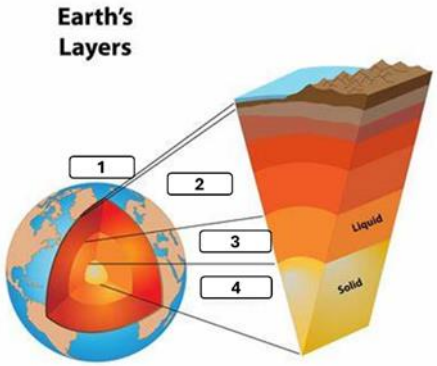
SCIENCE (EARTH AND SPACE) /QUARTER 3 / GRADE 8

I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES	
A. Content Standards	The learners learn that the distribution of continents and oceans on Earth is related to the presence of the oceanic crust and continental crust.
B. Performance Standards	By the end of the Quarter, learners demonstrate an appreciation of the large-scale features of the 'blue planet' Earth and relate those features to the geological characteristics of the upper crustal layers of the Earth.
C. Learning Competencies and Objectives	***Learning Competencies*** *The learners…* 1. identify what proportion of the Earth's surface is covered with water as opposed to land; and 2. gather information from secondary sources to name and describe the upper crustal layers of the solid earth. ***Lesson Objectives*** 1. estimate the proportion in percent of the Earth's surface covered by land compared to water. 2. differentiate between oceanic and continental crusts; and classify landforms based on their location on the type of crust.
D. Content	Crust and Lithospheric Plates
E. Integration	Complementarity of structure and function Geologic Features of the Earth

II. LEARNING RESOURCES
Dodd, C. (2020, December 16). What are the layers of the Earth? WorldAtlas. Retrieved from: https://www.worldatlas.com/articles/the-layers-of-the-earth.html Earth2014. (n.d.). Chair of Astronomical and Physical Geodesy. Retrieved from: https://www.asg.ed.tum.de/en/iapg/forschung/topographie/earth2014/ In, G. (2024, January 27). The difference between oceanic crust and continental crust. Geology In. Retrieved from: https://www.geologyin.com/2016/01/what-is-difference-between-oceanic.html

Mulko, M. (2022, July 4). Northern and Southern Hemispheres: What are the differences between them? Interesting Engineering. Retrieved from
https://interestingengineering.com/science/northern-and-southern-hemispheres-what-are-the-differences-between-them

III. TEACHING AND LEARNING PROCEDURE		NOTES TO TEACHERS
A. Activating Prior Knowledge	**DAY 1** **1. Short Review** **Activity 1.** Identify and describe the layers of the Earth using the figure below.  Layers of the Earth Source: https://www.worldatlas.com/articles/the-layers-of-the-earth.html **Discussion:** • Inner Core – It is the solid layer of the planet under immense pressure at the center of the Earth. • Outer Core - It is the liquid layer hot enough to be molten. • Mantle – It is the thickest layer that makes up most of the Earth. This can be further divided into upper and lower mantle. • Crust – It is the outermost solid rock layer of the Earth that is further classified as oceanic and continental crust.	The teacher may modify or change the activity to suit the type of learners. In processing the answers, make sure to emphasize crust to easily steer it to the next part on its classifications.

	2. Feedback (Optional)	
B. Establishing Lesson Purpose	**1. Lesson Purpose** • Let the learners read the objectives aloud. • At the end of the lesson, the learners are expected to: 1. estimate the proportion in percent of the Earth's surface covered by land compared to water; 2. differentiate between oceanic and continental crusts; and 3. classify landforms based on their location on the type of crust. **2. Unlocking Content Area Vocabulary** **Activity 2.** *Unjumble the Jumble!* Present the following items and let the students unjumble the letters to identify the hidden word. a. YDNESTI – the constant ratio between the mass and volume of matter. b. REPHESIEHM – half of the celestial sphere such as the globe divided by an imaginary line. c. OAENICC – anything that relates to oceans d. TTCNOALINEN – anything that relates to continents	The teacher may opt for a different strategy in presenting the lesson's purpose. **ANSWER KEY:** a. Density b. Hemisphere c. Oceanic d. Continental
C. Developing and Deepening Understanding	**1. Explicitation** **Activity 3.** • Material: World Map and Handkerchief • Objective: The activity aims to estimate the proportion in percent of the Earth's surface covered by land compared to water. • Procedure: 1. Divide the class into groups with at most five (5) members. 2. Lay down the world map on a flat surface. 3. One member must be blindfolded and use his/her index finger to point to the map ten times to different parts of the map. 4. For every trial, record in Table 1 whether the finger points on land (L) or water (W). 5. Repeat steps 3 and 4 for all the members of the group.	See Learning Activity Sheet: *Activity #1: Point on Your Map!*

Table 1.

Member	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10
1										
2										
3										
4										
5										

6. After all members take turns, count how many L and W were recorded.

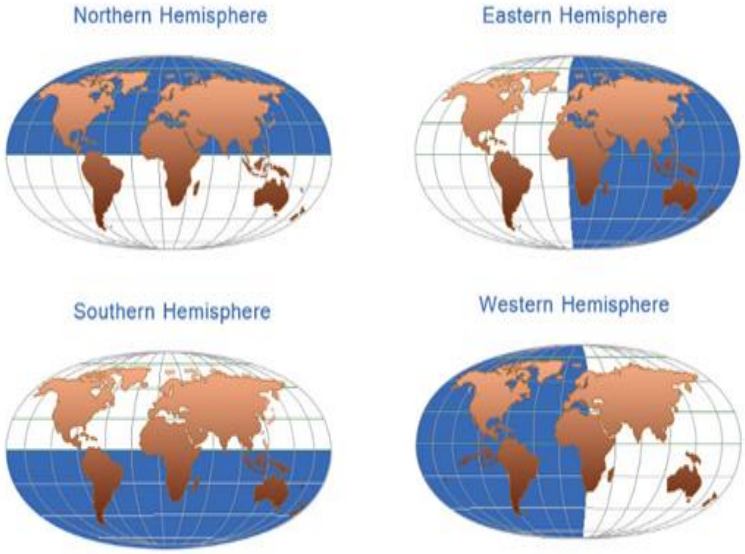
Guide Questions:

1. What is the percentage of recorded "L" in Table 1?
2. What is the percentage of recorded "W" in Table 1?
3. What can you infer from the difference in the percentages of L and W?

DAY 2

2. Worked Example

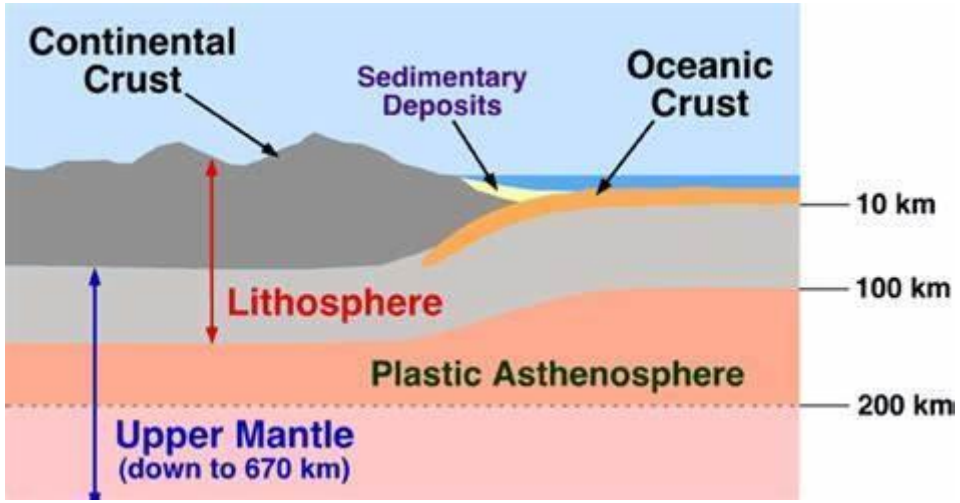
- Show figures of Earth contrasting land and water distribution per hemisphere.



Emphasize in the processing that the higher percentage of W indicates more water distribution than land on Earth.

Earth's Topography per Hemisphere

Image Source: interestingengineering.com

	Essential Questions: 1. What have you observed on the water and land distributions? 2. Why do you think the Northern Hemisphere is also known as the land hemisphere and the Southern Hemisphere as the water hemisphere? **Processing/Discussion:** The outermost layer of the solid surface of the planet, known as the Earth's crust, is what gives the planet its thin, inflexible shell. Earth's surface is home to a vast range of landforms and landscapes, which are the result of the interaction of various minerals, rocks, and geological characteristics. Continental crust and oceanic crust are the two primary categories of crust. **3. Lesson Activity** • Have the students analyze Figure 3 of Earth's surface contrasting the oceanic and continental crusts and answer the guide questions that follow.  Figure 3. Oceanic and Continental crusts. Image Source: th.bing.com	The processing of item #2 must lead to discussion on the description of crusts and the categories of crust, namely the continental and oceanic crusts.

	Guide Questions: 1. Based on Figure 3, which is thicker – continental or oceanic crust? 2. What happens when the oceanic crust collides with the continental crust? 3. What does your answer in item 2 imply about the densities of continental and oceanic crusts? **Processing/Discussion:** *Continental Crust:* Made mostly of granitic rocks, this form of crust is thicker and less dense than other types. The Earth's continental crust, which is made up of plains, mountain ranges, and a variety of geological features, creates the continents and bigger landmasses. Because of its composition and thickness, it is less dense than the oceanic crust. *Oceanic Crust:* Mostly composed of basaltic rocks, the oceanic crust is thinner and denser than the continental crust. Underwater volcanic activity, deep-sea trenches, and mid-ocean ridges are characteristics of this type of crust, which resides beneath the ocean basins. The seafloor spreading and subduction processes constantly build and destroy oceanic crust. **DAY 3** **Activity 4.** **Earth's Crust Characteristics** Divide the class into groups of at most five (5) members and do the activity that follows. Materials: Small basaltic and granitic rock samples, hand lens/smartphone cameras, 500-mL graduated cylinder, tap water, string, and weighing scale 1. Provide each group with basaltic and granitic rock samples and ask them to observe the physical characteristics of each rock. 2. Encourage them to use hand lenses or magnifying glasses for closer inspection. Smartphone cameras can be used as a substitute for handheld lenses. 3. Measure the mass of the basaltic rock sample using the weighing scales. Record this in Table 2. 4. Pour 100 mL of water into the graduated cylinder. This will be the initial volume of water.	The processing of the guide questions must lead to differentiating continental and oceanic crusts in terms of their properties. See Learning Activity Sheet: *Activity #2: Earth's Crust Characteristics* The rock samples should fit inside the graduated cylinder.

5. Tie the string to each rock sample.
6. Gradually submerge the small basaltic rock sample without touching the bottom of the graduated cylinder.
7. Read the increase in the volume of water. Then, record the difference between the final and initial volume of water in Table 2.
8. Compute the density of the basaltic rock sample by dividing its mass by the difference between the final and initial volume of water. Record this in Table 2.
9. Repeat steps 3 to 8 for the granitic rock sample.

Table 2.

Rock Sample	**Observation**	**Mass (g)**	**Final Volume (mL)**	**Volume Difference (mL)**	**Density (g/mL)**
Basalt					
Granite					

Guide Questions:

1. What are your notable observations?
2. Based on the computed densities, what will happen when the oceanic crust collides with the continental crust?

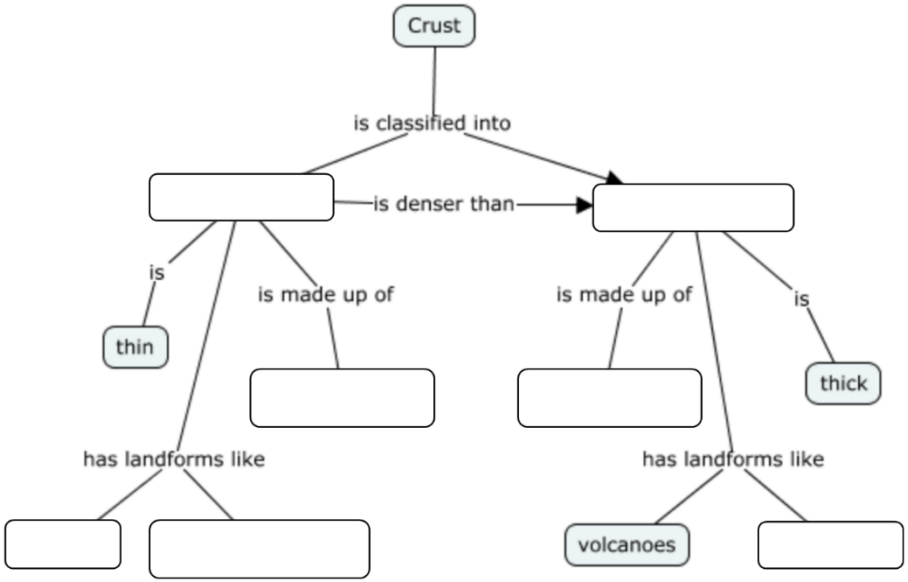
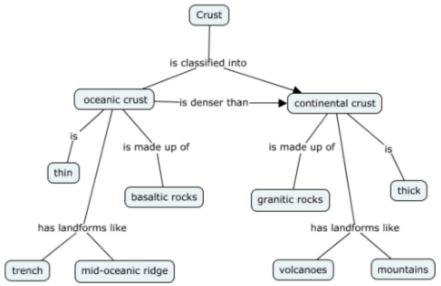
D. Making Generalizations

1. Learners' Takeaways

Let students accomplish the exit ticket to check their understanding and gather feedback on the lesson.

The teacher may propose other activities for the learners to describe their understanding of

	3-2-1 Exit Ticket **Items** / **Response** 3 Things I learned 2 Things I like about the lesson 1 Question I have **2. Reflection on Learning** In their notebook, the students will write a journal entry consisting of 3-4 sentences, answering ANY of the following questions. *a. How did I learn the topics that I think were easy?* *b. How should I learn the topics that I think are hard?*	a concept, idea, and skill covered in the previous topic. The teacher should allow the learners to document their ways on how they think about their learning (metacognition).

IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION		NOTES TO TEACHERS
A. Evaluating Learning	**1. Formative Assessment** Let students complete the concept map below:  **2. Homework (Optional)** **Activity 5.** *Crustal Landforms:* Show images of various landforms that can be classified as located on oceanic or continental crusts. *Guide Questions:* 1. What is common among the landforms located on the oceanic crusts? 2. What is common among the landforms located on the continental crusts? 3. How can these landforms relate to common human activities, constructions, environmental science, or natural resource management?	**ANSWER KEY:**  The teacher may give homework for extended deliberate practice.

A. Teacher's Remarks	*Note observations on any of the following areas:*	**Effective Practices**	**Problems Encountered**	This lesson design component prompts the teacher to record relevant observations and/or critical teaching events that he/she can reflect on to assess the achievement of objectives. The documenting of experiences are guided by possible areas for observation including teaching strategies employed, instructional materials used, learners' engagement in the tasks, and other notable instructional areas. Notes here can also be on tasks that will be continued the next day or additional activities needed.
	strategies explored			
	materials used			
	learner engagement/ interaction			
	Others			

B. Teacher's Reflection	*Reflection guide or prompt can be on:* ▪ *principles behind the teaching* *What principles and beliefs informed my lesson?* *Why did I teach the lesson the way I did?* ▪ *students* *What roles did my students play in my lesson?* *What did my students learn? How did they learn?* ▪ *ways forward* *What could I have done differently?* *What can I explore in the next lesson?*	This lesson design component guides the teacher in reflecting on and for practice. Entries on this component will serve as inputs for the LAC sessions, which can center on sharing the best practices discussing problems encountered and actions to be taken; and identifying anticipated challenges and intended solutions. Guide questions or prompts may be provided here.