



الإدارة المركزية للتعليم العام

مستشار مادة العلوم

Weekly Home Work

UNIT 4: LESSON TWO

**Materials Composing Lithosphere and Their
Role in Earth's Stability and Continuity**

Integrated Science Secondary one Second Term 2026

مراجعة

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**Lesson Two(Part 1): Materials Composing Lithosphere
and Their Role in Earth's Stability and Continuity**

Choose the correct answer

- 1- The lithosphere consists of minerals that are chemically bonded to form

A) Soil	B) Rocks
C) Crystals	D) Gases

- 2- The hardness of quartz on the Mohs scale isapproximately

A) 2	B) 4
C) 7	D) 10

- 3- The statue of Sphinx of Giza was made of Limestone rock, which has a hardness of ...

A) 2 : 3	B) 3 : 4
C) 6 : 7	D) 7

- 4- The material used in making glass tools due to its resistance to scratching is ...

A) Gypsum	B) Mica
C) Calcite	D) Quartz

- 5- "Fool's Gold" is a name given to the mineral

A) pyrite	B) Malachite
C) Galena	D) Feldspar

- 6- The mineral characterized by perfect cleavage in one direction, appearing as thin sheets, is

A) Quartz	B) Mica
C) Feldspar	D) Calcite

- 7) Specific gravity is measured by comparing the mass of a volume of a mineral to the mass of the same volume of water at a temperature of

A) 0°C	B) 4°C
C) 25°C	D) 100°C

8- Which of the following rocks is most resistant to natural erosion processes?

- A) Limestone
- B) Calcite-rich rocks
- C) Gypsum
- D) Granite

9 - The mineral malachite always appears in thecolour

- A) Yellow
- B) Red
- C) Green
- D) Blue

10- The pattern that appears when a mineral breaks irregularly and does not follow cleavage planes is called

- A) Streak
- B) Fracture
- C) Luster
- D) Hardness

11- Minerals with high hardness are used in crowded areas to ensure

- A) Resistance to wear and scratching
- B) Floor shine
- C) Ease of cleaning
- D) Cost reduction

12- Which of the following minerals possesses a metallic luster?

- A) Quartz
- B) Basalt
- C) Calcite
- D) Pyrite

13- The specific gravity of the mineral galena is considered high because it ...

- A) contains silica
- B) contains the heavy element Lead
- C) has a glassy luster
- D) has high hardness



Essay Questions

1- Given an iron nail and an Alabaster sample, how can you practically prove that Alabaster is less hard?

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2- Compare glassy luster and metallic luster, providing an example for each from your study.

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3- Explain: how studying the physical properties of minerals contributes to maintaining the stability and continuity of the lithosphere's balance.

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4- "All that glitters is not gold." Apply this saying scientifically to Gold and Pyrite, explaining the fundamental differences between them.

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Weekly Assessment

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رئيس الإدارة المركزية للتعليم العام

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المواد الدراسية

**Lesson Two(Part 1): Materials Composing Lithosphere
and Their Role in Earth's Stability and Continuity**

Model (A)

Choose the correct answer:

- 1) Which of the following physical properties expresses the degree of resistance of a mineral to scratching?
 - a) Luster
 - b) Cleavage
 - c) Hardness
 - d) Specific Gravity
- 2) If you have a sample of Calcite (Hardness 3), which tool can scratch it according to field hardness tests?
 - a) Fingernail
 - b) Copper coin
 - c) Gypsum piece
 - d) Iron nail
- 3) Why is Granite preferred for flooring in high-traffic areas like stations and hospitals instead of Limestone?
 - a) Because Granite has an attractive glassy luster
 - b) Due to Granite's high hardness and resistance to erosion
 - c) Because Granite exhibits cleavage in one direction
 - d) Due to Granite's low specific gravity, making it easier to transport
- 4) Which of the following minerals exhibits perfect cleavage in one direction, allowing it to separate into thin sheets?
 - a) Mica
 - b) Quartz
 - c) Chert
 - d) Feldspar

Essay Question

5- Cleavage is a property that must be studied accurately when selecting rocks for construction." Discuss this statement, explaining the engineering risks that may arise from neglecting this property.

Model (B)Choose the correct answer:

- 1) **what is the scientific term for the extent of light reflection from a mineral's surface?**
 - a) Luster
 - b) Streak
 - c) Hardness
 - d) Fracture

- 2) **A student tried to scratch a rock sample with its fingernail and failed, but it was scratched by a metal coin. What is the approximate hardness of this sample?**
 - a) 1.2
 - b) 2
 - c) 2.8
 - d) 5

- 3) **Although the similarity in color and luster between Gold and Pyrite, how can a geological engineer definitively distinguish between them on-field?**
 - a) By observing the color only
 - b) By using a hardness test or measuring specific gravity
 - c) By examining the cleavage in one direction
 - d) By checking the transparency of the sample

- 4) **What is the scientific explanation for the "conchoidal fracture" observed in Quartz?**
 - a) Presence of weak bonding planes
 - b) High Lead content
 - c) Exposure to atmospheric humidity
 - d) Strong chemical bonds in all directions and absence of cleavage

Essay Question

5- - Explain: "Mineral color alone cannot be depended as a primary identifying characteristic." give two examples from your studied to support your answer.

Model (C)

Choose the correct answer

- 1) Which of the following minerals represents degree (10), the highest level of hardness on the Mohs scale?
 - a) Quartz
 - b) Gypsum
 - c) Diamond
 - d) Feldspar
- 2) Given that Galena is rich in Lead, which physical property distinguishes it when compared to Feldspar ?
 - a) Basal cleavage.
 - b) High specific gravity
 - c) glassy luster
 - d) Distinct green color
- 3) Why is the conchoidal fracture of Quartz considered evidence of strong chemical bonds in all directions within its crystal structure?
 - a) Because it cleaves easily under pressure
 - b) Because its color changes based on the type of impurities
 - c) Because it has low hardness on the Mohs scale
 - d) Because it lacks planes of weakness (cleavage), causing it to break irregularly
- 4) Why does the use of rocks with "clear cleavage" pose a risk in constructing quarry walls?
 - a) Because they are extremely heavy
 - b) Because they may split into layers and collapse under mechanical stress
 - c) Because their color change over time
 - d) Because they resist drilling operations

Essay Question

5- - Infer the relationship between the chemical composition of minerals forming rock and their specific gravity, explaining the significance of this relationship in engineering applications .