Lab Activity: Metamorphic Rocks

INTRODUCTION:

Metamorphic rocks are rocks that change form from preexisting rock as a result of heat and/or pressure. Regional metamorphism occurs over large areas and are under extreme temperature and pressures. Contact metamorphism is more localized and changes only due to heat altering the rocks when it is adjacent to magma or lava.

OBJECTIVE:

Learn how to identify metamorphic rocks based on their properties.

VOCABULARY:

Banding -

Foliation -

Nonfoliated -

Contact Metamorphism -

Regional Metamorphism -

PROCEDURE:

1. For each unknown metamorphic rocks, identify the key observable characteristics. Record your answers on the Metamorphic Rock Identification Chart.
2. Determine the name of the metamorphic rock based on the observed characteristics and the Earth Science Reference Tables.

METAMORPHIC ROCK IDENTIFICATION CHART

Texture	Grain Size	Type of Metamorphism	Composition
☐ Foliated [mineral alignment] ☐ Foliated [banding]	☐ Fine ☐ Fine to medium ☐ Medium to coarse	☐ Regional ☐ Contact ☐ Both	
☐ Nonfoliated	☐ Fine ☐ Fine to coarse ☐ Coarse	☐ Regional ☐ Contact ☐ Both	
Rock Name:			

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DISCUSSION QUESTIONS:

1. Why are rocks formed by contact metamorphism usually not that dense as regionally formed.

2. Why is it rare to find fossils in metamorphic rocks?

3. Why do minerals rearrange into layers within a metamorphic rock?

4. Why is quartzite extremely hard and more resistant than its parent rock?

5. Why does the metamorphic rock marble react with HCl acid?

CONCLUSION: On what basis are metamorphic rocks classified?