

Station 1: Minerals Uses

1. Identify A.
2. Identify B.
3. Identify C.

**Match the use with the Mineral: A. Ore of Aluminum B. Abrasive
C. Electronics D. Food Additive E. Ceramics**

4. What is a use of mineral A?
5. What is a use of mineral B?
6. What is a use of mineral C?

Station 2: Ore minerals

1. Identify A.
2. What metal is an important ore of mineral A?
A. Zinc B. Silver C. Manganese D. Antimony E. Strontium
3. Identify B.
4. What metal is an important ore of mineral B?
A. Gold B. Iron C. Lithium D. Sulfur E. Nickel
5. Identify C.
6. What metal is an important ore of mineral C?
A. Lead B. Magnesium C. Iron D. Potassium E. Aluminum
7. Which of the following minerals can be an ore of sulfur?
A. Calcite B. Malachite C. Augite D. Pyrite E. Feldspar

Station 3: Mineral Habit

1. Identify A.
2. What is mineral A's habit?
A. Fibrous B. Botryoidal C. Acicular D. Bladed E. Radiating
3. Identify B.
4. What is mineral B's habit?
A. Massive B. Granular C. Dendritic D. Cubic E. prismatic
5. Identify C.
6. What is mineral C's habit?
A. Massive B. Columnar C. Prismatic D. Striated E. Bladed

Station 4: Igneous Rocks

1. Identify A.
2. Which statement best describes rock A?
A. Fine grained B. Ultramafic C. Intrusive D. Extrusive E. Mafic
3. Identify B.
4. What mineral commonly makes up rock B?
A. Olivine B. Augite C. Tourmaline D. Hematite E. Feldspar
5. Identify C.
6. True or false? Basalt is an aphanitic igneous rock.
A. True B. False

Station 5: Igneous rocks

1. Identify A.
2. What statement is true about rock A?
 - A. It formed over millions of years in an igneous intrusion.**
 - B. Because of its large holes it floats in water.**
 - C. It is composed of light, felsic minerals.**
 - D. It doesn't float in water even with its large air pockets because its density is greater than waters.**
 - E. It doesn't float in water because of its aluminum and oxygen composition.**
3. Identify B.
4. What is the texture of rock B?
 - A. Intrusive**
 - B. Extrusive**
 - C. Aphanitic**
 - D. Phaneritic**
 - E. Mafic**
5. Identify C.
6. True or false? The Andes Mountains have an abundance of rock C.
 - A. True**
 - B. False**
7. Order these from the longest to shortest cooling times.

Station 6: Sedimentary Rocks

1. Identify A.
2. How was this rock most likely formed?
 - A. Compaction and Cementation**
 - B. Heat and Pressure**
 - C. Quickly cooling magma**
 - D. Burial and deposition**
 - E. Slowly cooling magma**
3. Identify B.

4. What is the size range of the compacted sediments in rock B?
A. Less than 0.0004cm B. 0.0004-0.006cm C. 0.006-0.2cm D. 0.2-6.4cm
E. Greater than 6.4cm
5. Identify C.
6. What is the texture of rock C?
A. Bioclastic B. Crystalline C. Chemical D. Foliated E. Clastic
7. Which rock formed at the lowest energy environment?
A, B, C

Station 7: Sedimentary Rocks

1. Identify A.
2. Identify B.
3. Identify C.
4. What are all of these samples?
A. Quartz variety B. Types of Limestone C. Sandstone
5. What are all these rocks classified as?
A. Inorganic B. Clastic C. Bioclastic D. Banded E. Fragmental
6. What mineral are all these samples composed of?
A. Quartz B. Hematite C. Calcite D. Gypsum E. Halite

Station 8: Metamorphic Rocks/Parent Rocks

1. Identify A.
2. What is the parent rock of rock A?
A. Sandstone B. Breccia C. Bituminous Coal D. Limestone E. Shale
3. Identify B.
4. What is the parent rock of rock B?
A. Sandstone B. Breccia C. Bituminous Coal D. Limestone E. Shale
5. Identify C.
6. What is the parent rock of rock C?
A. Sandstone B. Breccia C. Bituminous Coal D. Limestone E. Shale
7. Which rock has the highest grade of metamorphism?
A. Phyllite B. Schist C. Slate

Station 9: Metamorphic Rocks

1. Identify A.
2. True or false? All banding is foliation, but not all foliation is banding.
A. True B. False
3. Identify B.
4. What type of environment did rock B's parent rock form in?
A. An igneous intrusion B. Arid desert C. Ancient Swamp D. Inside a volcano E. At the bottom of the ocean floor.
5. Identify C.

6. What do all of these rocks have in common?

- A. Composed of cemented sediments B. All foliated C. All non-foliated
D. All formed in regional metamorphism E. All formed in contact metamorphism**

Station 10: Cleavage

1. Identify A.

2. What type of cleavage is being shown in mineral A?

- A. Rhombohedral B. Orthorhombic C. Cubic D. Basal**

3. Identify B.

4. What type of cleavage is being shown in mineral B?

- A. Rhombohedral B. Orthorhombic C. Cubic D. Basal**

5. Identify C.

6. What type of cleavage is shown in mineral C?

- A. Rhombohedral B. Orthorhombic C. Cubic D. Basal**

7. What causes minerals to cleave?

- A. Element composition B. The amount of flat sides it has C. Arrangement of atoms D. The environment in which it formed**

Station 11: Fracture

1. Identify A.

2. What type of fracture is being shown in mineral A?

- A. Conchoidal B. Uneven C. Hackley D. Splintery E. Fibrous**

3. Identify B.

4. What type of fracture is being shown in rock B?

A. Conchoidal B. Uneven C. Hackley D. Splintery E. Fibrous

5. Identify C.

6. What type of fracture is being shown in mineral C?

A. Conchoidal B. Uneven C. Hackley D. Splintery E. Fibrous

Station 12: Minerals

1. Identify A.

2. Identify B.

3. Identify C.

4. What is the chemical formula for all of these minerals?

A. SiO₂ B. SO₂ C. H₂O D. NaCl E. NH₃

5. Therefore what are all these minerals varieties of?

A. Quartz B. Halite C. Ulexite D. Gypsum E. Fluorite

6. True or False? Mineral B is created when mineral C is heated.

A. True B. False

7. What is the hardness of all these minerals?

A. 7 B. 3 C. 5 D. 2 E. 8

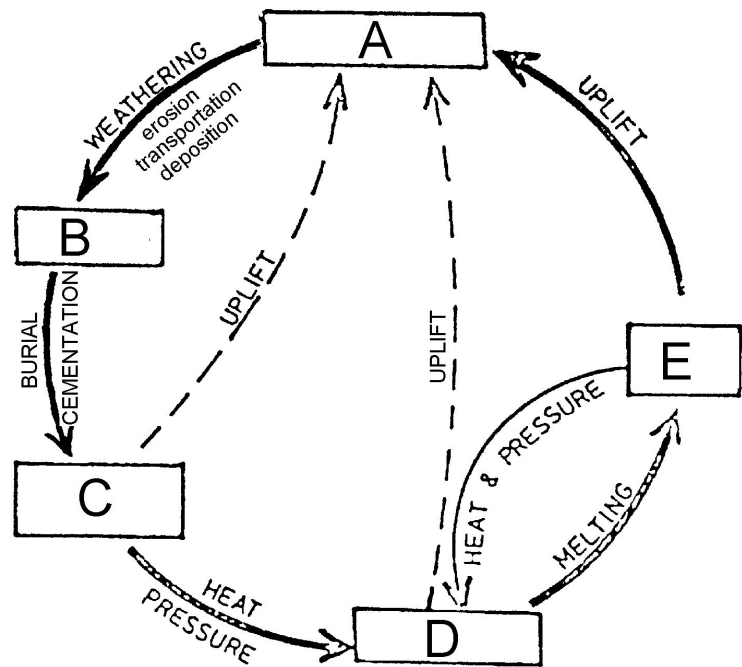
Station 13: Fast Facts

1. What is the inferred composition of the earth's core?
A. Iron and Nickel B. Silicon and Oxygen C. Aluminum and Potassium D. Carbon and Magnesium
2. What language does the name Kaolinite come from?
A. Greek B. French C. Chinese D. Latin
3. Which is not true about Quartz?
A. It has a piezoelectricity property B. It has hexagonal Cleavage C. It scratches glass, but cannot scratch Topaz D. Jasper is a form of quartz.
4. Which mineral family does Ulexite belong to?
A. Silicates B. Sulfates C. Borates D. Carbonates
5. Which of the following is a use of barite?
A. Abrasive B. Ceramics C. Drilling mud D. Ore of boron
6. Which of the following is a Phosphate?
A. Goethite B. Sodalite C. Tremolite D. Apatite
7. How many silicon atoms are in a Silicon Tetrahedron?
A. 1 B. 2 C. 3 D. 4
8. Which of the following characteristics does Opal not have making it not a mineral?
A. Inorganic B. Definite crystal system C. Definite chemical composition D. Naturally occurring
9. Which of the following is the hardest?

A. Gypsum B. Apatite C. Calcite D. Feldspar

Station 14: Rock Cycle

1. Identify A.
2. Identify B.
3. Identify C.
4. Which rock would most likely be represented by letter D on the chart?
A, B, C
5. Which rock would most likely be represented by letter C?
A, B, C
6. What does letter B on the chart most likely represent?
A. Sediments B. Magma C. Erosion D. Metamorphic Rock



Station 15: Rocks

1. Which of the following will never be in granite?
A. Feldspar B. Biotite C. Hornblende D. Olivine
2. Which of the following can form from contact metamorphism?
A. Gneiss B. Slate C. Marble D. Anthracite Coal
3. What almost completely makes up Coals composition?
A. Carbon B. Calcium C. Silicon D. Iron
4. What organism is chalk made of?

A. Coccolithophores B. Diatoms C. Phytoplankton D. Algae

5. What is the crystal size range of basalt?

A. No crystals B. Less than 1mm C. 1mm-10mm D. Greater than 10mm

6. Which cooled at the fastest rate?

A. Granite B. Andesite C. Pumice D. Rhyolite

7. Which word best fit Pegmatite?

A. Clastic B. Organic C. Plutonic D. Mafic

8. True or false? The only glassy texture igneous rock is Obsidian.

A. True B. False