

CHAPTER 9 LESSON 1

DAY 1

SPI 0707.7.1 Use a table of physical properties to classify minerals.

What You Will Learn

- To Identify the difference between a mineral and rock
- What a mineral is and how it is formed
- That minerals have properties that are used to classify minerals

Essential Questions

- What is a rock?
- What is a mineral?
- How do minerals form?
- How are minerals classified?

What Mastery Looks Like

18 Students observed an unknown mineral. The mineral was yellow, had a white streak, and was able to be scratched by quartz.

Mineral Properties

Name	Hardness	Common colors	Streak color
Sulfur	2	Yellow, yellow-brown	Yellow
Calcite	3	White, colorless, yellow, pink	White
Quartz	7	White, colorless, pink, gray	White
Topaz	8	Clear, yellow, orange	White
Diamond	10	White, colorless, yellow, brown	White

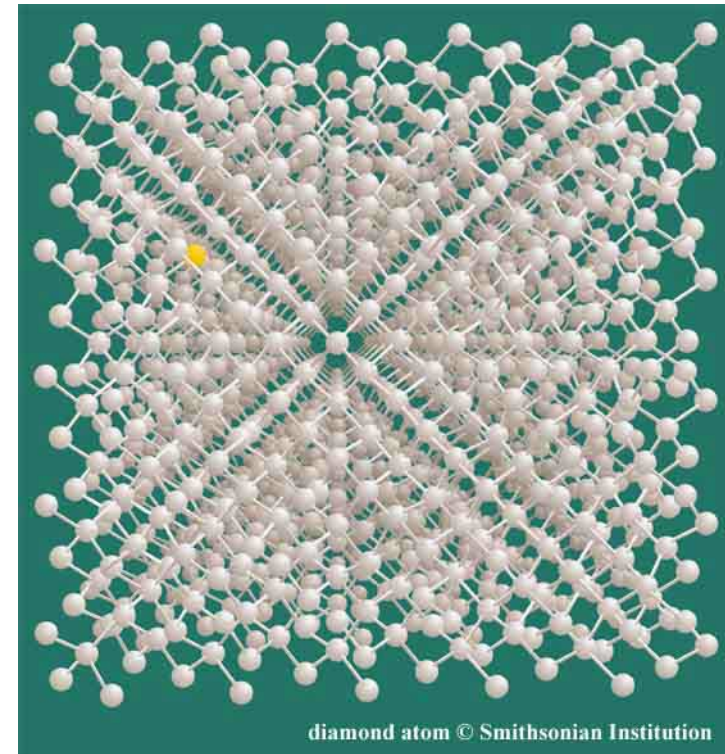
Based on the table, which of these minerals were the students most likely observing?

- F** Sulfur
- G** Calcite
- H** Topaz
- J** Diamond

What is a mineral?

Inorganic = not from living matter

- [Mineral Video](#) (10:00)
- A mineral is an inorganic, solid material found in nature.
- Most minerals occur naturally as crystals. Every crystal has an orderly, internal pattern of atoms, with a distinctive way of locking new atoms into that pattern to repeat it again and again.
- Chemical makeup and arrangement is unique to each mineral.
- Rocks: made of 1 or more minerals



The colored atom in the upper left corner is an impurity in the structure of this diamond. Impurities such as this cause the different colors of diamonds.

How do minerals form?

- From melted rock inside Earth (magma)
 - ▣ As magma cools, atoms combine in orderly fashions
 - ▣ Also form from magma that reaches Earth's surface (lava)
- Evaporation
 - ▣ Salt will appear when seawater evaporates
- Precipitation
 - ▣ Water can hold only so much
 - ▣ Any extra that can't be held in the water, separates and falls out as a solid.

How does cooling affect minerals?

- When magma cools, crystals form because the solution is super-saturated with respect to some minerals.
 - ▣ If magma cools QUICKLY, the crystals don't have much time to form, so they are very small.
 - ▣ If magma cools SLOWLY, the crystals have enough time to grow and become large.

Granite, a slow-cooled igneous rock with the same minerals and composition as the fast-cooled yet fine-textured Rhyolite.



Preview

- Tomorrow, we will dive deeper into the properties of minerals.

What's the answer?

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Exit Ticket

- Write one new thing you learned about rocks or minerals today.
- How will you use the information you learned today in real life?