

THINKING CRITICALLY**● Mixed-Up Minerals**

Cheryl Mason works for Geotech, Inc., a geology laboratory. While moving the laboratory's rock and mineral collection to a new building, she discovered five mineral samples that did not have labels. Two samples were white, one was brown, and two were colorless.

Cheryl labeled the samples A, B, C, D, and E. The two white samples, A and B, looked very similar. They had the same texture and appeared to have the same density. However, sample A bubbled when a drop of dilute hydrochloric acid was placed on it. Sample B did not react with the dilute hydrochloric acid. Sample C, the brown mineral, attracted iron filings.

After making these observations, Cheryl found five labels that had no samples to go with them: Diamond, Quartz, Calcite, Halite, and Magnetite.

Your Turn to Think

1. Based on Cheryl's observations, which is the calcite sample? Explain your choice.
2. Which is the magnetite sample? Explain your choice.
3. What test could Cheryl perform to clearly identify the diamond sample?
4. What test should Cheryl use to clearly identify the quartz and halite samples?
5. What other test could Cheryl perform to further confirm that she had correctly identified the halite sample?