

Name: _____

MUMMY MAKEUP

In “Mysterious Mummies” (p. 8), you read about scientists studying the world’s oldest-known mummies from Chile. To learn more about how the mummies were made, the scientists analyzed materials in and on the mummies, including clay inside the bodies and black paint on the mummies’ masks. By determining which *compounds* (substances made of two or more elements that are chemically combined) are in these materials, the scientists were able to learn more about where the ancient people found their mummy-making materials. The chart below, titled “Compounds found in Chilean Mummies’ Clay Layer,” shows the chemical compounds found in the clay layer beneath the black paint on the mummies. Read the chart and then answer the questions below.

Compounds Found in Chilean Mummies’ Clay Layer

Compound	Chemical Name	Percent in the Clay
Al ₂ O ₃	Aluminum oxide	13
CaO	Calcium oxide	3
Fe ₂ O ₃	Iron oxide	7
K ₂ O	Potassium oxide	4
SiO ₂	Silicon dioxide	68
Other	—	5

SOURCE: ARRIAZA ET AL, 2012

GRAPH IT

Use a separate sheet of paper to create a pie chart that shows the percentages of the compounds found in the Chilean mummies’ clay. Don’t forget to label the pie slices and give your chart a title.

ANALYZE IT

1. What is the chemical name for K₂O?
2. Which compound makes up 7 percent of the compounds found in the mummies’ clay?
3. Which compound accounts for more than half of the compounds found in the clay?
4. Suppose the scientists are trying to determine which of two clay-type rocks was the likeliest source for the clay in the mummies. They analyzed the rocks, and then listed the percentages of the compounds in the samples in the charts below, labeled “Sample A” and “Sample B”. Which sample do you think is the likeliest source for the clay in the mummies? Explain your answer.

Sample A

Compound	Percent
Al ₂ O ₃	22
CaO	13
Fe ₂ O ₃	7
K ₂ O	4
SiO ₂	50
Other	4

Sample B

Compound	Percent
Al ₂ O ₃	12
CaO	2
Fe ₂ O ₃	8
K ₂ O	4
SiO ₂	67
Other	7