

Name: _____

POISONOUS PAINT

In “Standing Guard” (p. 12), you read about China’s terra-cotta warriors. Many of the brightly colored pigments ancient artists used to paint the statues are toxic to humans. Lead (Pb) is one hazardous ingredient commonly used in paints from ancient times until the 1970s, when it was outlawed in the U.S. Breathing in or ingesting this element can cause serious health problems. The diagram below shows how lead poisoning can affect the body. Use the information, along with that from the article, to answer the questions that follow.

HOW DOES LEAD HARM THE BODY?



No amount of lead exposure is considered safe. Ingesting lead can severely affect children’s mental and physical development. Children younger than 6 are particularly vulnerable to lead’s toxic effects because their brains are growing rapidly. Lead is also dangerous because it accumulates in growing bones, making it difficult or impossible to remove from the body. As lead levels increase, so do the severity and range of problems.

NERVOUS SYSTEM:

Lead attacks nerves and the brain, causing difficulties with attention, learning, and behavior, as well as hearing loss. In high enough doses, lead can cause convulsions, coma, and even death.

BONES:

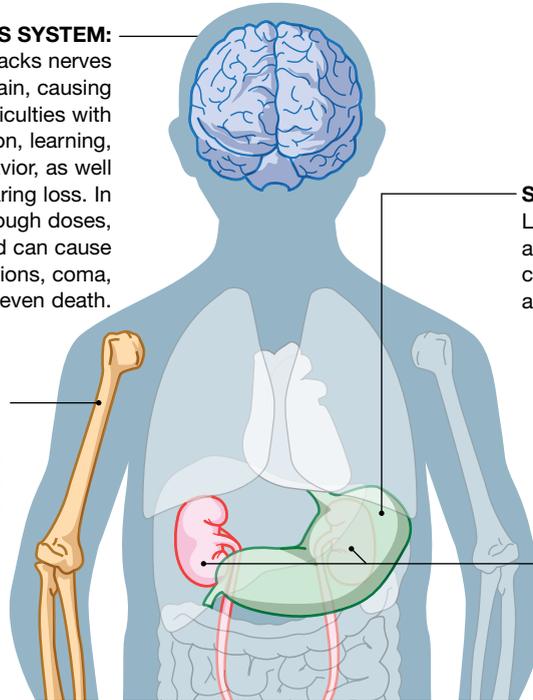
Lead accumulates in bones and stunts their growth.

STOMACH:

Lead can cause abdominal pain, constipation, nausea, and lack of appetite.

KIDNEYS:

Lead damages the *kidneys*, the organs that filter waste products from the blood. In adults, long-term exposure to lead can cause kidney damage and chronic kidney failure.



QUESTIONS

1. Why are children particularly at risk for lead poisoning?
2. Why might archaeologists unearthing the terra-cotta soldiers be at risk of lead exposure? Use information from the article to support your answer.
3. Do you think spraying the warriors with polyethylene glycol will increase or decrease the risk of lead exposure for the people who work with them?
4. Many famous painters in history, including Michelangelo and Vincent van Gogh, had serious health problems. Their symptoms included fatigue, painful stomach aches, and unusual behavior. Scientists now believe many of these artists suffered from lead poisoning. Describe two pieces of evidence that help support this theory.
5. How might scientists be able to confirm that certain people from the past had lead poisoning by studying their remains?