

Franklin Jr./Sr High School Reading Article

Your Poop Could be a Literal Goldmine of Precious Metals

Reading Strategy for the Article: Students will take turns reading aloud. Mark the text and write in the margins as you read.

1170L

Instructions: COMPLETE ALL QUESTIONS AND WRITE NOTES in the margin box. This requires reading of the article more than once.

Step 1: Skim the article using these symbols as you read:

(+) agree, (-) disagree, (*) important, (!) surprising, (?) wondering

Step 2: Number the paragraphs. **Read** the article **carefully** and **make notes in the margin**.

Notes should include:

- Comments that show that you **understand** the article. A summary or statement of the main idea of important sections may serve this purpose.
- Questions you have that show what you are **wondering** about as you read
- Notes that differentiate between **fact** and **opinion**.
- Observations about how the **writer's strategies** (organization, word choice, perspective, support) and choices affect the article.

Step 3: A final quick read noting anything you may have missed during the first two reads.

Your margin notes will be assessed by your teacher along with your answers to the questions.

Your poop could be a literal goldmine of precious metals

You have no idea what you're flushing away.

You may know that you can earn \$13,000 a year selling your own feces, but now it seems that the U.S. government stands to make bank on your solid waste, as well. According to new research presented at the national meeting of the American Chemical Society, the itty-bitty particles of gold, lead, copper and other valuable metals found in biosolids (which you probably just call poop) could be worth "mining."

Put your tiny pick-ax away and flush the toilet: It's not that simple.

Led by Kathleen Smith of the U.S. Geological Survey, the team of researchers initially set out to find better ways of extracting foreign particles from human waste. They weren't looking to mine that silver and gold, but rather to toss it out. Once human waste is treated, about half of it (3.5 million tons, in the United States) is used to fertilize farms and forests across the country. The primary goal is to get metals — which get into our waste by way of their presence in cleaning agents, beauty and hygiene products, and clothing — out of this ferti-

Notes on my thoughts, reactions and questions as I read.

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lizer end-product to keep them from impeding its usefulness.

But by thinking like miners, Smith said, wastewater treaters could get two poop byproducts for their trouble: fertilizer and reusable metals. In fact, a recent study estimated that a city of 1 million people might produce \$13 million worth of these biosolid metals every year.

Smith and her team are still figuring out the best methods for extracting these metals, but they've had a lot of luck using the same chemicals used to leach tiny particles of metal from rock. Indeed, Smith told the ACS, a lot of human waste seems to have high enough concentrations of leachable metals that it would be considered commercially viable to mine it — if it was rock, that is.

Since biosolid metal extraction would require new procedures and facilities, it's obviously not a given that anyone will decide to go spelunking for cellphone-building alloys in human poop. But Smith and her team say the feasibility of the process should be considered on a case-by-case basis and could end up providing a valuable income boost to local economies.

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Comprehension Questions— you may answer in phrases.

1. What three main product categories contain human waste with precious metals?
2. What two byproducts does the author believe wastewater treaters could mine?
2. Define **spelunking** as used in the article.
3. What does the acronym ACS mean?
4. Define **impeding** as used in the text.

Answer the following questions in one or more complete sentences.

1. Explain what the author means when stating “by thinking like miners.”
2. What was the original purpose of this research study?
3. Why does the author use the word “literal” in the title of the article?

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1. The process of leaching valuable metals out of sewage waste treatment plants seems to have both benefits and negative aspects. Make a list of four benefits and four negative results of the process. If the item listed comes directly from the text, cite the paragraph number. If the item listed is based on inference, label with an "I"

2. Based on the information provided, do you believe the mining process of waste treatment plant is ready to start or is some research and development still required. State your claim with evidence from the text in a well-developed paragraph.