STEM
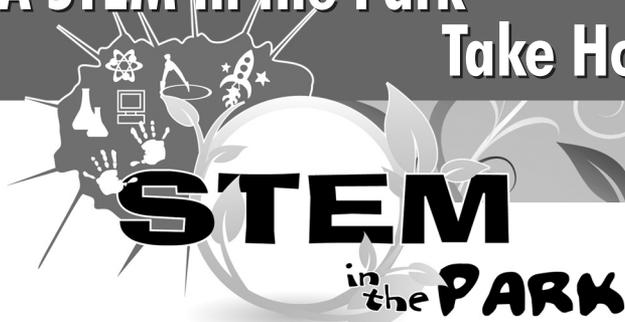### in the PARK

Science, Technology, Engineering, and Mathematics

Quick Cookie Mining

What You Need

- Bags of Chips-ahoy cookies (or similar hard grocery store cookie with lots of chocolate chips)
- Paper towels or paper plates
- Toothpicks

What To Do

1. Put a cookie on a paper towel or plate and grab a toothpick.

2. Use the toothpick to "excavate" the chocolate chips from the cookie. The chips represent coal in the ground and the goal is to remove the chocolate chips from the cookie without damaging the chips at all and causing as little damage as possible to the cookie (which represents the earth around the cookie).

3. Count the quantity of coal (chips) you were able to "unearth" and observe the quality of the "earth" around the coal.

What To Do cont.

4. Now "clean up" your mining site by using your digestive systems to *bioremediate* the mining wastes and extracted ore deposits (in other words - eat the cookie).

5. Try again with another cookie and see if you are a more efficient miner now that you have had some practice.

Learn...

Coal generates more environmental impacts than any other energy source. Coal mining disturbs large areas of land creating surface water quality problems and ecosystem impacts. Using new and better mining technologies to extract coal may help lessen the impact to the environment. Scientists and engineers are working on ways to diminish the negative impact and still provide the coal we need to generate electricity just as other scientists and engineers are working on new ways to generate power from the sun and other sources. Check out eia.gov/kids.

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