



PREVISIT STUDENT SURVEY GRADES 5-6

TEACHER INFO & ANSWERS

The student survey that appears on pages 3-4 of this document is based on the 2009 New Jersey Core Curriculum Content Standards and is intended for use *before* your students visit Sterling Hill. Directly linked to this document is a post-visit survey that will allow you to assess how much your students learned during their class trip. The surveys, the class trip to Sterling Hill, and the pre- and post-visit activities are cross-curricular by design and are meant to address various aspects of earth science, social studies, and technology. A few of the standards addressed are listed below.

Standards Addressed:

NJ Earth Systems Science Strand 5.4.G, Biogeochemical Cycles

CPI# 5.4.6.G.3: *Personal activities impact the local and global environment.*

- During their visit to Sterling Hill, students will be reminded that their personal lifestyle choices have a direct bearing on the health of the local and global environment. That topic will be explored in depth in a post-visit activity on personal use of the Earth's resources.

NJ Social Studies Strand 6.3.A, Geography, People, and the Environment

CPI# 6.3.8.B.1: *Evaluate alternative land use proposals and make recommendations to the appropriate governmental agency regarding the best course of action.*

- Before students come to Sterling Hill, they will learn about a variety of mineral and rock resources produced from New Jersey. Mining and quarrying illustrate one possible type of land use, but are inherently environmentally disruptive activities.

NJ Technology Strand 8.2.B, Design: Critical Thinking, Problem Solving, Decision-Making

CPI#8.2.4.B.3: *Explain the positive and negative effects of products and systems on humans, other species, and the environment.*

- Students visiting Sterling Hill will be informed of both the positive and negative effects of mining on an industrial scale by touring an actual underground zinc mine.

Time Required for Survey: About 15-20 minutes

Materials Needed: One copy of the two-page survey sheet (p. 3-4) for each student

Answers:

A. Name some things you would expect to see in a mine. Include tools you think a miner might use during his or her work.

Tools: Shovels, picks, rock drills, hammers, dynamite, ore cars, etc.

Other: Mine shaft, tunnels, ladderways (parts of the mine itself)

B. Besides humans, what is the most common animal you might expect to see in an underground mine?

Bats. Others: cave crickets, rats. Visitors: snakes, toads, mice, raccoons, skunks, etc.

C. Underground mines can be dangerous places to work. List some of the dangers a miner might face.

Cave-ins, explosions, poisonous gases, fire, accidents with equipment, falls

D. Circle at least three types of mineral resources that are taken out of mines.

Coal, iron, copper, gold, diamonds

E. What type of landform (shape of the land) might you find at a New Jersey mine? Draw a picture of what you might see on the back of this page.

Answers will vary, but much of New Jersey consists of elongate ridges separated by fairly flat-floored valleys. Students may draw a tunnel leading into a hillside, or a vertical shaft leading straight downward from a ridge crest or valley bottom, or an open pit or trench gouged out of rock at the surface. All were common mine types in New Jersey.

F. What kinds of things are needed by miners AND their families to live and thrive as a community? List as many things as you can.

Houses to live in, land to grow food, grocery stores, schools, hospital, doctors and health clinics, police force, firemen, paramedics (ambulance crew), clothing and shoe stores, hardware stores, recreation facilities (parks, library, swimming pool, movie theater), roads maintenance department, water and sewer service, banks

G. Is mining important to you? Let's find out. For each item listed below, circle Yes (Y) if you think mining was involved in its production or manufacture, or No (N) if you think it was not.

The correct answer for all items is Yes (Y). See the document *What's In It? How Is It Made?* for explanation.

H. Can you think of ways we can reduce our dependence on mining? If you can, write them down here.

Valid answers number in the hundreds (Unplug appliances when not in use, take shorter showers, drive energy-efficient cars, upgrade insulation in your house, etc.), but all of them fall into three major categories:

1. Change our lifestyle to reduce consumption of raw materials;
2. Recycle more;
3. Reduce our population.



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Name: _____ Grade: _____ Date: _____

The questions below are meant to reveal how much you already know about mining and its importance, if any, to your daily lives. This is **NOT** a graded quiz. It is simply a way for us to judge your current level of knowledge.

A. Name some things you would expect to see in a mine. Include tools you think a miner might use during his or her work.

B. Besides humans, what is the most common animal you would expect to see in an underground mine?

C. Underground mines can be dangerous places to work. List some of the dangers a miner might face.

D. Circle at least three types of mineral resources that are taken out of mines.

Coal

Hay

Gold

Iron

Rope

Diamonds

Potatoes

Copper

E. What type of landform (shape of the land) might you find at a New Jersey mine? Draw a picture of what you might see on the back of this page.

F. What kinds of things are needed by miners AND their families to live and thrive as a community? List as many things as you can.

G. Is mining important to you? Let's find out. For each item listed below, check "Yes" if you think mining was involved in its production or manufacture, or "No" if you think it was not.

Item	Yes	No	Item	Yes	No
Pencil			Textbook		
Cotton T-shirt			Coffee cup (ceramic)		
Paper			Coffee cup (plastic)		
House paint			Hairbrush		
Silverware			Toothpaste		
Pennies			Lipstick		
Batteries			Eyeglasses		
Vitamin pills			Chain-link fence		
Stapler			Light bulb		
Candle			Tires		
Toothbrush			Ballpoint pen		
Eraser			Candy bar		
Window glass			Nails (carpenter's)		
DVD			Bubble wrap		
Milkshake			Magnet		
Sponge			Telephone		
Nail polish			Scotch tape		
Tea bag			Leather belt		
Deodorant			Toothpick		

H. Can you think of ways we can reduce our dependence on mining? If you can, write them down here.