Teaching Guide to *Shortcuts* by Jeff Harris

Introduction

Shortcuts by Jeff Harris is a beautifully illustrated, fact-packed page that makes learning fun. Each week, *Shortcuts'* multicultural cast (Juanita, K., Roland, Junior and James) offers facts, riddles, jokes and puzzles to help kids learn about science, geography, animals, food, history and holidays.

Each teaching guide provides ideas for expanding the lesson and creating discussion and learning activities for your students. The grade level for the guides is usually 3rd to 4th, but they can be adapted for use at other levels. The guides are broken down into four areas :

1. Questions for Discussion and Further Study

Designed to help students think and research, not just give one-word answers

2. Activity Ideas

Designed to allow students to be creative and teach themselves

3. Use the News

Designed to have students use the news in studying each topic

4. Quick Quiz

Designed to be adaptable to several grade levels, evaluate students' comprehension and build vocabulary and math skills

You might use the teaching guides in the following ways:

Questions for Discussion and Further Study: Engage the entire class by asking each question aloud and listing the students' answers on the board. Or have them use reference resources to give their own answers to the questions. Allow them to discuss other students' answers after they've researched the topics. Key words or phrases that can help students search for more information are italicized.

Activity Ideas: Give the students a time limit to research their projects, using library or study time. By having the students cite their resources you can check their work; or, alternatively, tell them which resource(s) you prefer them to use.

Use the News: These can be worked on individually but we suggest they work in groups to learn teamwork skills.

- **Quick Quiz:** We suggest you review the quizzes ahead of time and change the phrasing or difficulty level based on the students' abilities.

Shortcuts: REFLECTING ON SILVER

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Objective: After completing the exercises, students should have a better understanding of silver.

Subject Areas: The following information about silver will be discussed:

- Conductivity of silver
- Germ fighting abilities of silver
- How is silver mined?

Evaluation: Students may be evaluated using the following point scale:

Four points: Information is accurate, organized, shows creative thought/use of materials
Three points: Information is accurate and organized
Two points: Information is mostly accurate; organization needs some work
One point: Significant inaccuracies; lacks organization

Topics for Discussion and Further Study

1. Why is silver such a good conductor of electricity and heat?
2. How is silver put on glass to make a mirror?

Activity Ideas

- Silver is supposed to have antibacterial properties. Research and report on how it is used, and what products use silver to kill germs.

- How is silver mined? Here is a documentary video from the History Channel showing how this precious metal is extracted from the earth. At the end of the video, ecological problems with mining are discussed. What do you think about the pollution mining creates? http://www.youtube.com/watch?v=nWYX1D5M1kU

Use the News

- Silver is a commodity, and its daily price is usually quoted in the business section of your newspaper. What is the current price of silver? Can you research how the price has changed since 1900?

Answers to the Quiz

1.) a, 2.) b, 3.) b, 4.) d, 5.) a, 6.) c , 7.) alloy, 8.) tarnish, 9.) 1,557 deg, 10.) 13

Quick Quiz — Silver

1. The ancient Egyptians valued silver over gold.
a. True b. False

2. _____ produces more silver than any other country.
a. America b. Peru c. China d. Thailand

3. The chemical symbol for silver is “Si.”
a. True b. False

4. Polished silver reflects about ____ of the light that hits it.
a. 10% b. 35% c. 70% d. 95%

5. Most of our coins today do not contain silver.
a. True b. False

6. Pure silver is a very _____ metal.
a. hard b. cold c. soft d. brittle

Vocabulary Comprehension

7. When a metal such as silver is mixed with another metal, the combination is called an _____.

8. Silver objects often get a dull coating on their surface called _____.

Math Comprehension (subtraction, division, addition, fractions)

9. If silver melts at 1,769 deg F, and water boils at 212 deg F, what’s the difference in temperature?

10. If one ounce of silver costs $23, and you have $300, how many ounces can you buy?