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 Newspaper**

   Designed to have students use the newspaper 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 Newspaper: 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: WARMING UP TO STOVES

For release the week of: August 19, 2013

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

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

- Types of stoves
- History of stoves
- Stoves for warmth or cooking

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 do many people enjoy fireplaces? Why are they popular?
2. What sources of fuel do we use today to heat our homes? What future sources should we develop to save the environment?

Activity Ideas

- There are many different kinds of wood-burning stoves for cooking and/or warmth. Research and report on one of these designs. For example, the Franklin stove is more efficient than an open fireplace. Why? Include a diagram of the stove design you choose.
- Make a stove that uses free fuel! What fuel? Solar energy. There are many designs available on the Internet, but it's more fun and educational if you design your own. Just keep in mind two factors: black colors absorb heat (they get hot quickly) and shiny surfaces reflect light. Use something like a cardboard box for the oven. It could be painted black inside to increase the internal heat. You'll need to focus the sun's rays inside your oven, so covering the flaps on the box with aluminum foil works well. They should be propped open like flower petals so they gather light and reflect it into the center of the oven box. That's the basic idea. Use your imagination and come up with your own design. Then all you need is a sunny day.

Use the Newspaper

❖ Benjamin Thompson and Benjamin Franklin were inventors who improved stove design to benefit mankind. Look for and summarize a news article dealing with inventions or other endeavors that may improve our lives. Ex. Electric cars, HD television, etc.

Answers to the Quiz

1.) b, 2.) d, 3.) a, 4.) c, 5.) a, 6.) c, 7.) Franklin, 8.) heat, 9.) 1½ hours, 10.) 12

Quick Quiz — Stoves

1. Most early stoves used coal for fuel.
   a. True b. False

2. "Four o'clock stoves" were small stoves used to _____.
   a. cook breakfast b. cook dinner
   c. warm the dining room d. warm the bedroom

3. Sometimes a whole room has been called a stove.
   a. True b. False

4. One of the oldest cast-iron stoves in the world was used in _____ more than 1,800 years ago.
   a. America b. Russia
   c. China d. England

5. Electric stoves were first made in the late 1800s.
   a. True b. False

6. Most people in North America used fireplaces for heating and cooking until metal stoves began to gain popularity in the early _____.
   a. 1600s b. 1700s
   c. 1800s d. 1900s

Vocabulary Comprehension

7. The _____ stove fit into an existing fireplace.

8. The intricate designs increased the surface area of the stove helping it to radiate more _____.

Math Comprehension (subtraction, division, addition, fractions)

9. If a stove could heat a certain room in 3 hours, how fast could it heat a room that is half the size?

10. If a stove burns 4 logs in 3 hours, how many logs does it need to burn for 9 hours?