

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: CLEARING THE AIR ABOUT OXYGEN

For release the week of: April 26, 2010

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

Subject Areas: The following information regarding oxygen will be discussed:

- Oxygen and combustion
- Gases in the air
- Ozone facts

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. In what ways do animals and plants “need” each other?
2. Oxygen is needed for something to burn. What else is needed?

Activity Ideas

- Draw a pie chart showing how much of the air you breathe consists of oxygen. You could also research other gases that are in the air and draw their pie chart “slices.”
- What is ozone? Is it good or bad for living things? What is pollution doing to the ozone layer around the earth? Research and record the answer to these questions.

Use the News

Scheele and Priestly were important scientists who discovered oxygen. What scientists

are reported on in your newspaper? What kinds of scientists are they? Chemists? Doctors? Geologists? Etc.

Answers to the Quiz

1.) a, 2.) c, 3.) a, 4.) b, 5.) b, 6.) a, 7.) Combustion, 8.) oxidation, 9.) 35%, 10.) 4/5

Quick Quiz – Oxygen

- Oxygen is the most common element on earth.
a. True b. False
- Nearly all the oxygen in our atmosphere was created by _____.
a. animals b. storms c. plants d. insects
- Liquid oxygen is magnetic.
a. True b. False
- Oxygen is normally found as a molecule made of _____ oxygen atoms.
a. one b. two c. three d. four
- About 90% of the air you breathe is oxygen.
a. True b. False
- _____ in the earth's atmosphere protects living organisms from deadly ultraviolet rays from the sun.
a. Ozone b. Heat c. Water d. Helium

Vocabulary Comprehension

- _____ is a reaction between oxygen and some other substance that creates heat and light.
- Rusting of metal or decomposing of leaves is called _____.

Math Comprehension (subtraction, division, addition, fractions)

- If 65% of your body is oxygen, how much is not oxygen?
- If 1/5 of the air you breathe is oxygen, how many fifths is not oxygen?