

# 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 3<sup>rd</sup> to 4<sup>th</sup>, 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: THE INS AND OUTS OF YOUR RESPIRATORY SYSTEM**

For release the week of: November 18, 2013

**Objective:** After completing the exercises, students should have a better understanding of the respiratory system.

**Subject Areas:** The following information about the respiratory system will be discussed:

- What is asthma?
- How do the lungs inflate?
- How does oxygen get into our blood when we breathe?

**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. What is asthma? How does it affect the respiratory system?
2. How does a baby breathe before it is born?

## **Activity Ideas**

- How do our lungs work? Review the explanation in the Shortcuts comic about how the diaphragm works with the lungs. Then obtain these materials: a balloon, a large plastic bottle, an elastic band and a plastic bag. Next, visit this website and follow the simple video instructions: <http://www.youtube.com/watch?v=vRv2zYH5p9k> The bottle represents your chest. The balloon is like one of your lungs. And the plastic bag acts as your diaphragm.
- How does the oxygen get into your blood from your lungs, and how does the carbon dioxide pass from your blood back out into the lungs? Research and write a report or make a poster describing the process and the path these gases take as they enter and exit your body.

### **Use the News**

- We all need fresh air to survive and live healthy lives. Air pollution can make us sick and cause environmental problems. Most scientists now believe that our climate and weather are affected by the gases that factories, cars and other machines expel into the atmosphere. Read the newspaper for examples of news about air pollution, climate change, and weather. What is the main idea of the news article? Why is being reported? Where did it occur? Write or share the information you discover with the class.

## **Answers to the Quiz**

1.) a, 2.) a, 3.) b, 4.) d, 5.) b, 6.) c , 7.) exhale, 8.) tree, 9.) 360 , 10.) 4

## Quick Quiz — The Respiratory System

1. Your lungs are never completely empty of air.  
a. True b. False
2. Your lungs are divided into sections called \_\_\_\_\_.  
a. lobes b. globes c. diaphragms d. alveoli
3. Babies breathe a little slower than adults.  
a. True b. False
4. In the \_\_\_\_\_, oxygen is transferred into the blood.  
a. nasal passages b. artery c. trachea d. alveoli
5. Your respiratory control center is located at the bottom of your lungs.  
a. True b. False
6. When your \_\_\_\_\_ flattens or curves up, it causes you to breathe.  
a. lung b. trachea c. diaphragm d. alveoli

### Vocabulary Comprehension

7. Another word for breathing out is \_\_\_\_\_.
8. The bronchial \_\_\_\_\_ is a series of tubes located inside the lungs.

### Math Comprehension (subtraction, division, addition, fractions)

9. If a person took 12 breaths every minute for half an hour, how many breaths would that be?
10. If a balloon could hold 6 liters of air, and you could exhale 1.5 liters of air in one breath, how many breaths would you need to exhale to fill 1 balloon?