

# 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: FOLLOWING THE COMPASS**

For release the week of: May 6, 2013

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

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

- What is a GPS?
- Are shifting magnetic poles dangerous?
- Orienteering

**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. How does a GPS work?
2. How can the stars help you find directions? Have you ever done it?

## **Activity Ideas**

- Earth's magnetic poles are constantly shifting -- it's normal. However, some people think a complete magnetic pole reversal would be a doomsday scenario. NASA doesn't think so. Check out this website that describes how and why the magnetic poles move, and why we shouldn't be too worried about it.  
<http://www.nasa.gov/topics/earth/features/2012-poleReversal.html>
- Orienteering is the skill of using a compass to find your way. You can practice using a compass in your own classroom or out in your school's playground. Here's an example of an activity you can try if you have a compass. Choose a starting point in the classroom (or playground), then choose several "midway" points to travel to using your compass. Finally, choose a destination. Now, write instructions (for your classmates) to follow to find the midway points and the destination. Example: Take 6 steps north, 5 steps west, 10 steps north, 4 steps east. For fun, each new instruction could be placed at each midway point, so they won't know where to go unless they follow the previous directions correctly!

### **Use the News**

- Read the newspaper to find interesting places to figure out compass directions to. For example, if you read an article about Afghanistan, use a map to figure out which direction it is from your hometown. If you flew straight there, which direction would you need to fly? How about the direction to the nearest police station, starting from your school?

# Answers to the Quiz

1.) a, 2.) b, 3.) b, 4.) c, 5.) a, 6.) d , 7.) declination, 8.) gimbals, 9.) 360 deg, 10.) 180 deg

## Quick Quiz — The Compass

1. A mariner's compass is used on ships.  
a. True b. False
2. Our planet has \_\_\_\_\_ sets of poles.  
a. one b. two c. three d. four
3. Magnetic north is located directly on the north polar axis of Earth.  
a. True b. False
4. The first compasses were used in \_\_\_\_\_ more than 1,000 years ago.  
a. Germany b. Africa c. China d. England
5. The accuracy of a compass can be affected by nearby metal objects.  
a. True b. False
6. A “\_\_\_\_\_ rose” is a flower-like pattern that was found on early navigation charts.  
a. red b. water c. tea d. wind

## Vocabulary Comprehension

7. The difference between the true poles and magnetic poles is called \_\_\_\_\_.
8. The mariner's compass is sealed inside a bowl that is filled with liquid and mounted on a series of rings called “\_\_\_\_\_.”

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

9. How many degrees are there in the full circle of a compass?
10. How many degrees is due south?