# 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:** TUNING IN TO NEPTUNE

For release the week of: December 26, 2011

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

**Subject Areas:** The following information about Neptune will be discussed:

- Neptune's appearance
- How moons are formed
- Neptune's orbit

**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 are the gas-giant planets far from the sun, while the solid-terrestrial planets are closer?
2. What does the view of Neptune look like through the Hubble Telescope?

# Activity Ideas

- Triton is Neptune's largest moon. It has an interesting orbit, in that it revolves opposite the direction Neptune is spinning. This fact leads scientists to believe Triton came from somewhere else in the solar system. Why do you think astronomers came to this conclusion? How do most moons behave? How did most moons form? Research and write what you find out about how a planet's moons are formed.
- Neptune is currently supposed to be farther away from the Sun than Pluto is. How can this occur? How can Pluto and Neptune "switch positions?" Research Neptune's orbital path, and write and draw a description about how Neptune has moved farther out from the Sun.

**Use the News**

- What kind of product could use the name "Neptune"? How could a company use a planet's name to help sell its product? Which mythological god is Neptune? Think of a good use of the name Neptune, and create an advertisement you might find in the newspaper.

# Answers to the Quiz

1.) a, 2.) d, 3.) b, 4.) d, 5.) a, 6.) c, 7.) winds, 8.) orbit 9.) 700 km/hr , 10.) 112

# Quick Quiz — Neptune

1. Neptune has 13 moons.
a. True b. False

2. Neptune was named after the Roman god of _____.
a. the sky b. war c. night d. the sea

3. Without a telescope, Neptune can only be seen in the winter.
a. True b. False

4. In the 1800s, scientists concluded that some unknown object was affecting the orbit of _____.
a. Mars b. Venus c. Jupiter d. Uranus

5. Neptune is a gas giant.
a. True b. False

6. It takes about 4 _____ for sunlight to reach Neptune.
a. seconds b. minutes c. hours d. days

## Vocabulary Comprehension

7. Neptune has the strongest _____ in the solar system.

8. It takes about 165 earth years for Neptune to make one _____ around the sun.

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

9. Winds on Neptune can blow as fast as 1,400 km/hr. If another planets winds blew half that speed, how fast would that be?

10. A day on Neptune lasts about 16 hours. How many hours are in a Neptune week?