

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: FOCUSING ON SATURN

For release the week of: September 16, 2013

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

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

- The winds of Saturn
- Effects of day length
- Advances in astronomy technology from Galileo to Cassini

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 might the winds on Saturn blow so fast?
2. What are the five planets that can be seen from Earth without a telescope?

Activity Ideas

- A day on Saturn lasts about 10 hours. What would our lives be like if Earth's day were only 10 hours long? If our bodies still needed eight to 10 hours of sleep, and we were awake for about 16 hours, when would we work or go to school? Or would our sleep cycle be completely different? Brainstorm some ideas about this as a class and then write a description of life on Earth with a 10-hour day.
- What happened between the time of Galileo -- 1610, and Cassini -- 1675, that changed the observation of Saturn's "handles" to "many separate rings"? Research and report on how each astronomer made his discovery.

Use the Newspaper

- ❖ What is currently visible in your night sky? Is it a full moon? Are any planets visible? Research and write a brief news article describing what and where to look in your evening sky.

Answers to the Quiz

1.) b, 2.) c, 3.) a, 4.) d, 5.) b, 6.) b, 7.) handles, 8.) ice, 9.) 500 k/ph, 10.) 63

Quick Quiz – Saturn

- Several space probes have been sent to Saturn, but so far none have reached it.
a. True b. False
- Dutch astronomer Christiaan _____ discovered that there were rings around Saturn.
a. Galileo b. Cassini
c. Huygens d. Asimov
- Winds of Saturn blow very fast.
a. True b. False
- The largest moon of Saturn is _____.
a. Saturnalia b. Europa
c. Io d. Titan
- Most of the rings of Saturn are several kilometers thick.
a. True b. False
- One day on Saturn equals about _____ hours.
a. 5 b. 10
c. 20 d. 40

Vocabulary Comprehension

- Galileo thought Saturn appeared to have “_____.”
- The rings of Saturn are made of _____ and debris.

Math Comprehension (subtraction, division, addition, fractions)

- If the winds of Saturn were blowing at 1,500 k/ph and then slowed to $\frac{1}{3}$ that speed, how fast would they be blowing?
- The axis of Saturn is tilted to 27 degrees. How many more degrees would it have to tilt to reach 90 degrees?