

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: A CRASH COURSE IN METEORS

For release the week of: November 2, 2009

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

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

- Meteor watching
- Meteor showers and storms
- Do really big meteors hit the Earth?

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 big is the Hoba meteorite? Did it leave a crater?
2. When was the last time a really big meteor hit the Earth? Do scientists think it could happen again?

Activity Ideas

- It's time to do some meteor watching! Meteors can usually be seen any night, approximately 6 per hour (as your Shortcuts article says). However, if you watch on the date of a meteor shower, such as the Leonids on November 17-18, you increase your sightings dramatically. Choose a dark night (a full moon will make them hard to see). Lie on your back or on a lawn chair, and admire the starry skies. Telescopes and binoculars are not needed. You need to keep your gaze open to a large portion of the sky. With patience, you should see several streaks of light from different meteors during your observations. Here's an astronomy website with further information about meteor watching. <http://stardate.org/nightsky/meteors/>
- A meteor shower occurs when lots of meteors radiate from a certain area of the sky. If at least 1,000 meteors appear per hour it is called a meteor storm. There are several popular showers that occur every year. Research and write a report about one of these showers or storms.

Use the News

What would happen if a meteor landed near your school? Imagine what the event would be like. How big was it? Did it hit anything? Who saw it in the sky? Who found it on the ground? Write an imaginary news article reporting what happened.

Answers to the Quiz

- 1.) b, 2.) c, 3.) a, 4.) b 5.) a, 6.) c 7.) Micrometeorites 8.) fall, 9.) 4,200 km,
10.) 6,048,000 km

Quick Quiz — Meteors

1. Most meteorites are very hot after impacting the ground.
a. True b. False
2. When the meteoroid hits the ground it is then called a _____.
a. meteor b. shooting star c. meteorite d. micrometeor
3. On an average night, you can see about 6 meteors every hour.
a. True b. False
4. A meteorite that is collected from an unknown meteor is called a _____.
a. meteoroid b. find c. comet d. fall

5. Our planet travels through space at about 65,000 mph.

a. True b. False

6. The _____ meteorite is the largest meteorite ever discovered on Earth.

a. Loco b. Armageddon c. Hoba d. Baho

Vocabulary Comprehension

7. _____ are dust-sized objects that fall through our atmosphere without burning up.

8. A meteorite that is found after a reported meteor sighting is called a _____.

Math Comprehension (subtraction, division, addition, fractions)

9. If a meteor travels at 70 km/sec, how far will it travel in a minute?

10. How far will the above meteor travel in a day?