

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: DISCOVERING NICOLAUS COPERNICUS

For release the week of: February 10, 2014

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

Subject Areas: The following information about Nicolaus Copernicus will be discussed:

- Comparing Copernicus and Galileo
- Comparing Ptolemy's view of the universe with Copernicus' view
- Why was it controversial to believe the Earth was not the center of the universe?

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 fact about space do you know that even Copernicus probably didn't know?
2. Were Copernicus' ideas the same or different from Galileo's?

Activity Ideas

- Before Copernicus wrote his book, most people thought Earth was the center of the universe. They thought everything orbited around the Earth. Now we know that Earth is just one planet that orbits around our sun in the solar system. For your activity, draw two different diagrams: one showing how our solar system really looks, the other showing how people may have imagined it looked with the Earth at the center, and everything else (including the sun) orbiting around it.
- Why do you think people eventually got upset that Copernicus thought the Earth was not the center of the universe? Why was this a disturbing idea for many of them? Write your opinion about why they might have been upset. Then research this controversy and compare your thoughts with what they actually believed.

Use the News

- What time does the sun rise where you live? What time does it set? What phase is the moon in? What planets are visible in your night sky? Your newspaper may have this information printed for you. Read the paper to learn these astronomical facts as they are currently listed for your time and location. Do you think the time of sunrise and sunset are the same for everybody on Earth? Why or why not?

Answers to the Quiz

1.) b, 2.) b, 3.) b, 4.) c, 5.) a, 6.) d , 7.) Spheres, 8.) astronomer, 9.) 168 hrs. , 10.) 9 hrs.

Quick Quiz — Nicolaus Copernicus

1. Copernicus was the first person to say the Earth was not the center of the Universe.
a. True b. False
2. Nicolaus Copernicus was born in _____
a. Italy b. Poland c. China d. Greece
3. Copernicus died before his book was published.
a. True b. False
4. Copernicus lived about _____ years ago.
a. 50 b. 100 c. 500 d. 2000
5. Copernicus was the first to correctly explain how the Earth takes one year to orbit around the Sun.
a. True b. False
6. Copernicus is often called the father of modern _____.
a. science b. mathematics c. astrology d. astronomy

Vocabulary Comprehension

7. Copernicus wrote a work called “Six Books on the Revolutions of the Heavenly _____.”
8. Someone who studies space and the planets is called an _____.

Math Comprehension (subtraction, division, addition, fractions)

9. If one day takes 24 hours, how many hours are there in a week?
10. If you read a book for one hour on Monday, then read for two hours more than that on Tuesday, then on Wednesday you read for two hours more than you did on Tuesday, how many hours in total did you read on those three days?