

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: GRINDING AWAY AT PLATE TECTONICS

For release the week of: August 27, 2012

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

Subject Areas: The following information about plate tectonics will be discussed:

- Volcanoes
- Modeling plate tectonics
- Geology in the news

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. Are geologic events -- earthquakes, volcano eruptions, etc. occurring more frequently today?
2. What is a super-volcano? Check out this History Channel video clip:
<http://www.youtube.com/watch?v=1Vn6kxfD3Ek>

Activity Ideas

- Pictures, diagrams, and animations at this website guide you on a webquest for information about plate tectonics. Follow the links and directions on each page to learn more about how the Earth moves from within.
http://www.uen.org/utahlink/tours/tourFames.cgi?tour_id=13380
- Use visual aids to demonstrate the three types of boundaries between tectonic plates: divergent, convergent, and transform. Diagrams could be drawn. Pieces of sponge foam or other material could be manipulated to show movement. Clay or paper mache could be sculpted into models. Research and create your tectonic plate demonstration for the class.

Use the News

- What earth science -- geology, oceanography, etc. can you identify in the news? Articles dealing directly about science discoveries could be read, or articles that report on geologic issues indirectly could be cited, i.e. Oil, gold, natural gas news, etc.

Answers to the Quiz

1.) a, 2.) b, 3.) b, 4.) b, 5.) a, 6.) d, 7.) mantle, 8.) Convergent 9.) 13, 10.) 3 yrs.

Quick Quiz — Plate Tectonics

1. Scientists predict the Pacific Ocean is growing smaller.
a. True b. False
2. Tectonic plates float on a layer of extremely hot _____.
a. gas b. rock c. water d. metal
3. Most earthquakes and volcanoes occur in the center of tectonic plates.
a. True b. False
4. Scientists believe that all of the continents were grouped together into a super continent called _____.
a. Gaia b. Pangaea c. Gondwanaland d. Panthalassa
5. There are three types of boundaries between plates.
a. True b. False
6. _____ boundaries are where two or more plates slowly grind past one another.
a. Convergent b. Divergent c. Volcanic d. Transform

Vocabulary Comprehension

7. Tectonic plates are made of Earth's crust and the outer layers of its _____.
8. _____ boundaries are where plates bump together, causing one plate to be forced under the other plate.

Math Comprehension (subtraction, division, addition, fractions)

9. If 30 plates are divided into 2 groups, with 17 in one group, how many would be in the other group?
10. If a plate moves about 4 inches every year, how long would it take to move one foot?