

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 LITTLE LOOK AT SEEDS

For release the week of: April 2, 2012

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

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

- Pros and cons of bioengineered seeds
- Germination facts
- Observing germination

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. Make a list of seeds or seed products you can find in your house.
2. What are bioengineered seeds, and are they a good idea?

Activity Ideas

- Here is a link to a seed germination lesson for young students. There are many pictures, sounds, and short time-lapse videos to interest the students and present the information: <http://www.wix.com/philzrollinson/seed-germination-lesson#!>
- Watching your own seeds germinate and grow is fascinating. Here are simple instructions for germinating bean seeds that will be visible to the whole class for at least a week. If the sprouts are handled carefully, they could be planted and observed as they continue to grow. (paper towels can be used instead of cotton if needed) <http://mumsgather.blogspot.ca/2009/06/home-science-experiment-germinating.html>

Use the News

- Seeds are spread naturally on air currents, on fur and even inside animals. How do we transport objects? Read the newspaper to identify ways people move things. For example: we carry them, mail them, put them on airplanes, boats, and trucks, throw them, and drive them. Make a list of as many ways as you can find.

Answers to the Quiz

1.) b, 2.) a, 3.) a, 4.) b, 5.) a, 6.) c , 7.) dormant, 8.) coat 9.) .92 mm , 10.) 8

Quick Quiz — Seeds

1. The largest seeds produce the largest plants.
a. True b. False
2. Many seeds are found in fruits and _____.
a. berries b. vegetables c. roots d. stems
3. Some seeds travel like a helicopter.
a. True b. False
4. The estimated value of the world's commercial seed markets is more than \$25 _____.
a. thousand b. million c. billion d. trillion
5. Some seeds are carried in animal droppings.
a. True b. False
6. _____ have some of the smallest seeds in the world.
a. Corn b. Coconuts c. Orchids d. Rice

Vocabulary Comprehension

7. Scientists have grown seeds that had been _____ for thousands of years.
8. The seed _____ protects the seed from damage and dehydration.

Math Comprehension (subtraction, division, addition, fractions)

9. How many millimeters larger would a .08 mm seed have to be to equal 1 centimeter?
10. How many groups of 3 could you divide 24 seeds into?