

# Teacher Guide for ASK

July/August 2011: Seeing Stars

Betty Lou Askin, a retired educator, who lives in Toronto, Ontario, prepared this guide.

## Pre-reading:

Have the students look at the cover and the Table of Contents. Discuss the pictures and the article titles. Ask the students what they think they will learn while reading this magazine.

## Scoops (pages 2-3)

### Let Sleeping Bears Lie

- What do bears do while sleeping for six months?
- Explain what the scientists discovered about the sleeping bears.
- What questions are puzzling the scientists?
- How can this information help humans?

### Mummy Fakes Its Toes

- What has been found on the toes of some mummies?
- Describe the scientist's experiment.
- What was the conclusion of the experiment?
- Why are big toes important?

### Fastest Plant in the World

- What is a bladderwort?
- Describe how it gets its food.

### Beach Garbage Hotel

- Why did Ha Schult construct the garbage hotel?
- Describe the hotel.

**Ask** the students to look for science "scoops" while they read the newspaper and/or watch television news/shows. Create a bulletin board to post their information.

## Nestor's Dock (pages 4-5)

- Why is Phil so excited?
- Why does he start to panic?
- Explain why the joke is on Phil.

## The Guest Star (pages 6-10)

During or after reading the article use these prompts to focus on the content:

- What did the Chinese astronomers find?
- Describe the new star.
- Tell who else saw this new star.
- What did astronomer Nevis discover?
- What does the word *nebula* mean?
- What was more popular than star gazing during the 1700's?
- Why was Charles Messier called a "Ferret of Comets"?
- Describe his new project.

- In your opinion, why was his catalog important?
- Why did the nebula become known as the Crab Nebula?
- What did the spectroscope discover?
- Tell what photography was able to reveal about the nebula.
- Describe what Walter Baade learned.
- Explain what happened to the Crab long ago.
- What is a super nova?
- Explain the final conclusion about the Crab.

### **A Star's Life: the Inside Story** (pages 11-13)

Read this article aloud with the students. Let one student read one of the boxes and then stop. Discuss the information. Make a list of Stella's information as you read along, such as the following:

#### **Stella's Life**

First she was a big cloud of gas and dust  
 She is made up of different sizes of atoms  
 The smallest atom is hydrogen  
 Etc

This same procedure could be used to explain a supernova and a black hole.

### **What Is a Black Hole?** (pages 14-17)

Reading for information:

- Describe a black hole.
- Explain the edge of a black hole.
- Explain what makes a black hole.
- Tell how we know that there is a black hole even though we can't see it.
- Describe how you would look as you entered a large black hole.
- Explain Hawking radiation.

### **Stephen Hawking Exploring the Rules of the Universe** (pages 18-20)

Ideas to use with this article:

- What is a cosmologist?
- Explain what scientists believed for years about black hole.
- Describe what Hawking discovered about black holes.
- Creative Work:
  1. Ask the students to write a news report announcing Stephen Hawking's new findings about black holes.
  2. Have the students write a 3 paragraph biography of Stephen Hawking, using the information from this article.
  3. Let the students use the library or the Internet to do further research about Stephen Hawking.

### **Snapshots from Deep Space** (pages 22-25)

- Use the **Think, Pair, Share** method and ask the partners to read this article. Ask them to use the secondary titles within the article as headings. Under the headings the paired students should make brief notes about the information.

- When they have completed this activity, hold a class discussion about what they have discovered.

### **The Grand Tour** (pages 26-27)

- Read this article aloud. Discuss the information.
- Creative Work:
  1. Ask the students to create news reports that highlight the various discoveries that the Voyagers found in their mission. These could be written reports and/or oral presentations.
  2. Have the students produce art work that would depict some of those discoveries.
  3. Let the students work in groups. Ask them to make predictions about future discoveries by the Voyagers. Have these shared with the whole class.

### **Seeing Stars** (page 31)

Follow the suggestion on page 31. Allow the students to share their ideas. Display their work on a bulletin board.

### **Jimmy the Bug** (page 32)

- What is the usual diet for an alligator?
- Why do birds eat stones?
- Alligators should not need stones. Why?
- Why do some scientists think that alligators eat stones?
- Is there a final decision on this question? Explain your answer.

### **Marvin and Friends**

- Why could we say that Marvin is an entrepreneur?
- Describe the information that was provided by Marvin's friends that changed his mind about his project.
- What was the happy conclusion?

### **Don't Forget to:**

- ✓ Find out if bears snore at [www.askmagkids.com/links](http://www.askmagkids.com/links)
- ✓ Check out some astronomy at [www.askmagkids.com/links](http://www.askmagkids.com/links)
- ✓ Check out the sky map at [www.askmagkids.com](http://www.askmagkids.com)