

# Teacher Guide for ASK

November/December 2011: Robots Like Us

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

## **Pre-reading:**

Look at the cover and the Contents page of this magazine. Hold a discussion with the students to illicit the extent of their knowledge and experience with robots. Ask the students if they know how robots work. If you wish, you could ask the students to create a **KWL Chart** (What I Know, What I Want to Know and What I Learned). Information could be added to the chart as you read through the magazine.

## **Scoops** (pages 2-3)

### **Extreme Earth Worms**

- Describe the "devil worm's habitat.
- Why do scientists think that this worm is living so far underground?

### **Seals Use Whiskers Wisely**

- Explain how Henry uses his whiskers.
- Describe the experiment conducted by the scientists.
- Why do Henry's whiskers save time and energy?

### **Playing with Your Vegetables**

- What is the Vegetable Orchestra?
- Describe the new plans that the musicians are trying.

### **Fingertips to Grip**

- Why do scientists think that your fingertips get "pruney"?
- Explain how this might help you grip with wet hands.
- Why are your "pruney" fingertips like tire treads?

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

- Why did Trip build Butler Bot?
- Explain why Trip is frustrated.
- Did Butler Bot follow Trip's directions?
- Trip missed a very important step in his development of his robot. Explain.

## **Team Robot** (pages 6-9)

Questions/ideas to use with this article:

- What is the FLL?
- Describe what the robots must do in this competition.
- What is the challenge in this year's competition?
- Make a list of the rules for this competition.
- Describe how the Fanatix team fared with their robot.
- Describe how the Fanatix team developed their robot.
- Why are there mentors in the FLL?
- Tell about the Flying Monkeys' invention.
- Creative Work: Ask the students to write a news report about the FLL competition using the information found in the article. When they have completed the written section they

could take turns reading their passage aloud. They might also include pictures as part of the report.

### **Anatomy of a Robot** (pages 10-11)

- Use the Read Aloud method with this article. Let students take turns reading sections aloud. There could be one student to introduce the material and then others to read the parts of the robot.

### **Robot Relatives** (pages 12-16)

Discussion questions to use with this article:

- Why are scientists continuing to develop humanoid robots?
- What else are scientists learning about while they study and develop robots?
- Explain why we could say that 1700<sup>th</sup> century mechanical clocks further inspired scientists?
- Why were automatons invented?
- Describe Jacques de Vaucanson's marvelous invention.
- Describe his digesting duck.
- Explain how Jaquet-Droz's automatons worked.
- Why did cams improve on the use of gears?
- What is a **karakuri**?

### **Dr. Rivet's Guide for the Mechanically Perplexed** (page 17)

- Divide the students into groups.
- Ask them to take turns reading the questions and answers in this article.
- Give them time to discuss the material in their groups.
- As a whole class, discuss their responses to the information
- Creative Work: Ask the students to try to develop other human traits that could be questioned by a robot and a response like Dr. Rivet.

### **Driving on Mars** (pages 18-21)

- Tell about the Viking mission.
- Describe the Sojourner and its work.
- Explain about Spirit and Opportunity.
- Write a paragraph using the information on pages 20&21 to explain how scientists get the robot to do work on Mars.
- What will be one of Curiosity's major inquiries on Mars?
- Describe Vandí Verma's job.

### **My Teacher Is a Robot!** (pages 22-23)

- Who is Engkey?
- Describe what Engkey can do for students.
- Explain how a teacher and Engkey can work together.
- Why are they using robot teachers?
- What are some of the benefits of having a robot teacher?
- Creative Work: Write a news report about the use of robot teachers. Use information from this article to help with your information. Share your report with the class.

### **Robot Zoo** (pages 24-27)

- There are 9 robot creatures described in this article. Divide the class into 9 groups and assign 1 of the zoo robots to each group. Ask the groups to read the information about their creature. Have them make notes and pictures. Let each group present to the rest of the class.

### **My Robot** (page 31)

Ask the students to follow the instructions on page 31. Send the results to the contest and/or let the students share their work in the classroom.

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

- What causes a muscle cramp?
- What situations might cause a muscle spasm?
- What can help when someone has a muscle cramp?

### **Marvin and Friends**

- Why do you think that Marvin wanted to throw pies?
- How did Plush Pottom get back at Marvin?
- Why do you think that Programmable Pete had a meltdown?

**Don't forget:** to hear the Vegetable Orchestra at [www.askmagkids.com/link](http://www.askmagkids.com/link)  
to find a robot building club or team near you at [www.askmagkids.com/link](http://www.askmagkids.com/link)  
to make your own Walking Paper Bot go to [www.askmagkids.com/crafts/walking-bot](http://www.askmagkids.com/crafts/walking-bot)