Teacher Guide for ASK

January 2014: Mars

This guide was prepared by Betty Lou Askin, a retired educator who lives in Toronto, Ontario.

Objectives:

- To learn about the past and present circumstances on Mars
- To appreciate the work that scientists do to study Mars
- To learn about the technical achievements of Curiosity

Pre-reading:

a) Let the students suggest what they think might be included in this issue of ASK based on the title.
b) Ask them what they think is happening on the cover.
c) View the Content pages and discuss the illustrations and article titles.
d) Ask the students to develop a **KWL Chart,** What I Know, What I Want to Know, What I Learned about Mars. Start by recording the students' responses for the first two columns of the chart. Add information to the chart after reading each article.

Scoops:

Gorilla Superheroes to the Rescue

- Where does this story take place?
- Why are there traps set up in the park?
- Explain why Rwema and Dukore are considered heroes.

Meet the Newest Raccoon!

- Describe the olinguito.
- Tell about its habitat.
- Why is this creature special?

Knock, Knock...

- Who were the culprits?
- Explain why the doorbell was ringing.

School Boat

- Where is the floating school?
- Why did the architect design this school?
- Describe the floating school.

Ask the students to look for more science "scoops" while they read media or watch television news/shows. Create a bulletin board to post their findings.

Nestor's Dock

- Why do you think the Trip Rover was designed?
- Name 4 reasons why the robot found the location unsuitable.
- What glitches do you think that Trip will need to work on with his robot?

Touchdown

Let the students read this article with a reading buddy. Hold a discussion about the information. Ask the students to complete the questions suggested below.

- Explain why Maurice is very nervous.
- Describe why Curiosity is "run by the spacecraft's computers".
- Explain why it is hard to land on Mars.
- Why was it necessary to develop the Sky Crane?
- Explain why peanuts have become very important during a launch.
- Describe the process as the spaceship approaches Mars.
- How are the scientists on Earth able to watch the process on Mars?
- Creative Work:
    1. Write a newspaper or TV report about the launch and landing of Curiosity.
    2. Develop an interview with Maurice. Work in pairs, with one student doing the interview and the other as the scientist.

Martians Attack!

Ideas to use with this article:

- Ask the students to work in groups of three. Assign one role to each student-Narrator, Fake Announcer or Reporter. The various groups will read the article within their own grouping.
- You might ask some of the groups to act out loud the passage after they have completed the previous task.
- Ask the students to develop their own radio dialogue similar to the article. They could present their finished project to the rest of the class.
- The illustrator helps our imagination see the action within the story. Use examples from the illustrations and explain how you gain a better understanding of the words.
- Art Work:
    1. Make drawings of the invasion by the Martians.
    2. Draw a comic strip with word captions of the Earthlings and the Martians.

Curiosity at Work

Questions to use with a discussion

- Use the Read-Aloud Method with this article. Students could take turns reading the information.
- Explain how scientists know that water had been present at one time in an area.
- Explain this phrase "Curiosity…it's not only a geologist, it's a laboratory."
- Why does Curiosity need to rest?
- Explain why Curiosity has a nuclear battery.
- Describe the role of each of the following:
    MastCam
    Mahli
    Spectrometer
    ChemCam
    SAM
    CheMin
- What important information was discovered at Yellowknife Bay?
- Why can Curiosity be called an explorer?
- Creative Work:

1. Develop a diary for Curiosity. Use the information from the article to describe the daily activity of Curiosity on Mars.

A Tale of Two Planets

Suggestions for dealing with this article:

- Use the Read-Aloud Method. Let the students take turns reading the information on pages 26-29. Read through once.
- On the second reading, stop after each section to discuss the information that is provided.
- Based on the early days of each planet complete a chart-Comparison of Early Earth and Mars".

  Similarities Differences
- Write an informative paragraph. Use the information from this article to explain why there is no life on Mars today. Use at least three details. Remember to use an opening and a closing sentence.
- Use this article to explain what the scientists hope will tell them about past life on Mars.

Adventures in Extreme Recycling

Questions to consider:

- Explain why packing for a trip to Mars is a challenge.
- Explain why water is extremely important on a voyage to Mars.
- Describe the use of "Water Walls".
- How is pee recycled?
- Tell how pee and poop will help the spaceship.
- Why would salt-filled bags be useful?
- Explain the use of algae on a spacecraft.
- If you were travelling to Mars, what would you **personally** need to take with you?

Name the Rover

Activity:

Follow the instructions and create your name for the new rover. Make a drawing of the new rover. Share your ideas with your classmates. Create a bulletin board and display the art work.

Jimmy the Bug

- What is contained in a kernel of corn?
- Why does a kernel pop?
- What is a corn "Old Maid"?

Marvin and Friends

- Why do you think that Marvin was telling his story?
- Why was Plush Pottom trying to reassure Zia?
- What did the periscope see?
- Why do you think that the friends will be embarrassed when they see who arrived?

Culminating Activities:

- Complete the **KWL Chart** if it was used during the reading of the magazine. The final section of the chart could be completed now if not done after each article.
- Choose 5 things from this magazine that you have learned about. Pretend that you are going to share this new knowledge with someone who has not read this issue of the magazine. Write a short paragraph about each of your chosen topics using information found in the articles.