National Geographic Kids

EDUCATOR’S GUIDE

**Next Generation Science Standards and Classroom Activities**

Buzz Aldrin

**Welcome to Mars: Making a Home on the Red Planet**

With Marianne J. Dyson

In this fascinating book, hero-astronaut Buzz Aldrin challenges you to think about Mars as not just a faraway red planet but as a future home for Earthlings!! What will your new home be like? How will you get there? What type of job can you get? What will your bedroom look like? What will you eat for breakfast? Find out what life might be like far from Earth as you navigate your way through this fun book.

Page 7 of book: Image of Buzz from Apollo 11: Hi! I’m Buzz Aldrin. I was one of the first people to walk on the moon. Next, I want humans to settle Mars. THIS ART SHOWS THE MARS SCIENCE LABORATORY ENTERING MARS’S ATMOSPHERE.

Instructional Note:

The Next Generation Science Standards (NGSS) are built on the Core Disciplinary Ideas (CDIs) of the Framework for K-12 Science Education. In this Educator’s Guide, activities introduce, review, or otherwise address one or more of the CDIs used as the basis for the NGSS performance expectations for each grade level.

**Grade 2**

ESS2.B: **Plate Tectonics and Large-Scale System Interactions**

Maps show where things are located. One can map the shapes and kinds of land and water in any area.

Page 28-29 of book: Image of Lowell’s map of Mars with his photo inset. LOWELL OBSERVED MARS THROUGH A TELESCOPE AND CREATED THIS MAP, SHOWING DARK LINES HE CALLED “CANALS.”

**MATERIALS**

• A topographical globe

• Two large pieces of thick cardboard

• Art supplies, including: tape, glue, scissors, markers, modeling clay, paper sacks, plastic sacks, cardboard tubes, construction paper, pipe cleaners, tissue paper, newspapers, and egg cartons (You may wish to have students bring material from home.)

• Graph paper

**Interpreting Maps**

Read aloud Chapter 2 (pages 24-33), “Off to Mars.” As you read, pause to discuss relationships among the text, photos, captions, and illustrations.

After reading the chapter, return to the section “Canals on Mars” on pages 28-29. Guide students to recognize that Percival Lowell created this map after observing Mars through a telescope. Invite students to identify different features they see.

Display the globe. Encourage students to compare the globe with the map. Invite students to feel the globe. Guide them to recognize that raised areas represent mountains. Flat areas represent plains. Challenge students to explain how Lowell most likely used what he knew of features on Earth when he created his map of Mars.

Divide the class into two groups. Give each group a large piece of thick cardboard. Invite groups to use the art supplies to create a landscape with a variety of different topographical features, using the cardboard as a base. Encourage them to give each group member a chance to contribute to the design. Discourage them from viewing the other group’s work.

Display the finished landscapes on desks at the far end of the room. Give each student a piece of graph paper. Instruct students to draw a basic eye-level map of the other group’s landscape. Collect the finished maps.

Give students a second sheet of graph paper. Encourage them to view the landscapes from above and draw a new map of the same landscape. Collect the finished maps.

Display each map. Invite students to identify each map as eye-level or an aerial view. Challenge them to match each map with the correct landscape. Encourage them to identify features that helped them make their decisions. Post each map above the correct landscape.

Have students compare the drawings. Discuss how distance and perspective can affect what people see. Discuss how prior knowledge of features can affect what people THINK they see. Guide students to recognize how these factors—and limited technology—influenced Percival Lowell’s ideas about Mars.