



COMPARING AND CONTRASTING

Identify the epochs

Throughout *Little Land*, there are illustrations of various epochs. Students can learn more about each of the epochs and then compare and contrast the different time periods. Using what they have learned, encourage students to identify the epochs shown in the illustrations.

ASKING QUESTIONS AND DEVELOPING MODELS

How dinosaurs lived and interacted with their environment

Show pictures of different dinosaurs from the Cretaceous period and have students in small groups ask questions about how the dinosaurs lived and interacted with their environment. Then, have each group make a hypothesis and build a model of their ideas. Finally, provide books and articles about dinosaurs for students to learn more and see if their ideas match the ideas proposed by other scientists.



PLANNING AND CARRYING OUT INVESTIGATIONS

Fossil investigation

For many years, we have learned about the past from fossils. Ask students to consider how fossils are formed. Begin by showing students a fossil or a picture of a fossil. Encourage students to ask questions and consider the origin of fossils. Then, ask them to share their thinking about how the imprints might have been formed. Provide students with plaster of paris, shells or other objects, and water. Have them experiment with the objects by making imprints in the plaster of Paris to test their ideas. Follow up by reading about how fossils developed during different periods of time.

How do glaciers change the earth?

Freeze water in small plastic containers and add a layer of sand or dirt on top. Then, have students make a prediction about what they think will happen and draw a model of their idea. Next, have students observe what happens as the ice melts. Groups should record what they observed. What did they notice? Finally, read about glaciers and how glaciers change the Earth's surface. What conclusions can they draw?

UNDERSTANDING OUR IMPACT

Using the illustrations and observations to see cause and effect

Understanding humans' impact on the earth is a major theme in *Little Land*. Help students explore different ways human activity may affect the earth. Begin by asking students to carefully look at the illustrations in *Little Land*, especially the illustrations that show human activity. Create a chart listing all the changes they see humans making and the effect those changes are having according to the illustrations. Next, ask students to look around their neighborhood. Do they see any similar causes and effects? They may want to take a walk around the neighborhood with their notebook to write their observations. Add these observations to the chart.



Charting making a positive difference

Little Land also shows how humans can make a positive difference and try to help the earth as well. Ask students to look for all the ways *Little Land* shows people trying to make a positive difference. Record all the ways the book shows people trying to take care of the earth. Then, have students brainstorm other ways they can make a difference.

Organizing for change

Students may have noticed garbage or plastic pollution around their neighborhood or the school. Organize a trash cleanup day and have students recruit their families or other classrooms to help. They can use their writing skills to craft persuasive letters to convince others to join in the cleanup.

Cafeteria composting

Composting is one way students can help the earth. Begin by sharing updated statistics with the class that show the amount of food waste generated each year. These statistics can be found by visiting the Environmental Protection Agency website (www.epa.gov) or even the World Wildlife Fund website (www.worldwildlife.org). The World Wildlife Fund website shares a study focused on the amount of cafeteria food waste, so this can make the problems associated with food waste feel more relevant to students. Encourage students to ask questions about the statistics and share their ideas about how that food waste could be eliminated from the solid waste sent to landfills. Then, read about composting and help students set up a composting station in the classroom or school. Students can collect food waste from their own lunches and add it to the composting bin. They may want to keep a field journal and document the process of how their food waste changed from garbage to soil that can be given back to the earth. Integrate math by weighing the amount collected and graph the results.



Classroom reforestation

Create a classroom forest by working together to plant trees as part of a reforestation effort. Work with a local community organization and then get students involved by helping them become tree-planting volunteers. Even young children can help by carrying buckets and shovels or providing water to the people digging the holes.

Container gardens

After reading *Little Land*, students may be inspired to grow plants just like the people in the illustrations. Container gardens are a way for students to grow a mini garden even when they may not have much space. Give students the opportunity to consider what they might like to grow in their container gardens and provide time for students to research the conditions and materials necessary for plants to grow. Then, provide flowerpots or other containers, soil, and seeds. Students can keep track of their plants' growth, make observations and predictions, and solve problems together if their plants are not growing. Encourage students to think of solutions as they observe changes that may mean their plants are not healthy.



Thank you notes to Earth

When we care about someone, we might write them a letter to tell them how we feel. Encourage students to deeply consider what they are grateful for that is provided by nature. Then, have them write a letter or poem expressing their gratitude to Earth. Model friendly letter format, and then students can write thank you notes expressing why they are grateful for gifts from nature.

MAKING CONNECTIONS TO THE AUTHOR'S PURPOSE

Close reading "Returning the Gift"

The author was inspired by the essay "Returning the Gift" by Robin Wall Kimmerer. Use close reading strategies to read each passage and summarize the main idea of each paragraph in the essay. Ask students to consider the author's purpose. Then, encourage students to look back in *Little Land* to find evidence that shows how the essay influenced this author. The author talks about the importance of gratitude. Ask students to consider why gratitude is important and how gratitude is shown in the book.

Upside down and right side up

The unique way the story of *Little Land* is told through illustrations gives additional meaning to the author's message. Ask students to look for evidence in the story that supports the claim that the author used words and pictures to show how humans changed the land. In groups, have students find evidence in the story to support this claim.

Vocabulary posters

The author shares some key vocabulary words and additional sources for students to explore. Understanding the vocabulary can help students make a deeper connection to the author's goal of inspiring students to make a difference. Encourage students to learn the vocabulary words and use them in their conversations. Divide students into groups and have each group choose a vocabulary word from the list and to create a vocabulary poster. The groups should create a visual representation that helps others learn the word they chose.

Becoming a naturalist

The author also suggests the website and app called iNaturalist. This application allows students to identify living things as they are out exploring. Take a nature walk together and use the app. Students can also contribute their findings to large databases that help scientists study living organisms. For teachers, this is also a great resource for datasets that can be used for other science lessons.



These Teaching Tips were created by Dr. Jennifer McMahon, Education Consultant.