MARY POPE OSBORNE

MAGIC TREE HOUSE®

#38 Time of the Turtle King

EDUCATORS' GUIDE

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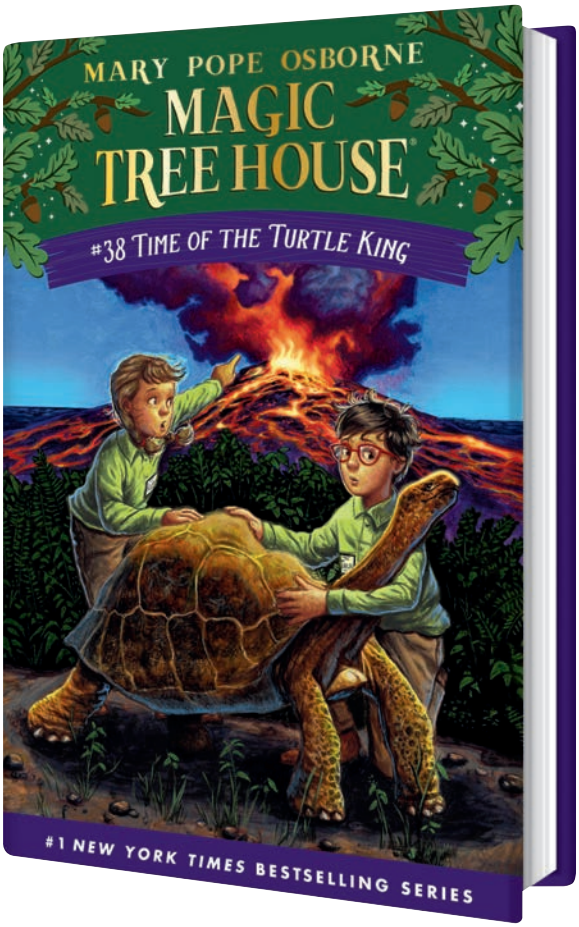
TIME OF THE TURTLE KING



About the Book

It's just a regular day when ordinary kids Jack and Annie are whisked away in the magic tree house to the Galapagos islands, where they must save a giant tortoise from an erupting volcano! But what do Jack and Annie know about saving turtles?! Plenty, thanks to some magic that makes them experts. A helicopter ride, rushing lava, and a whole lot of determination make this one adventure Jack and Annie will never forget!

About the Author

Mary Pope Osborne is the author of the #1 *New York Times* bestselling Magic Tree House® series, as well as coauthor of the Magic Tree House® Fact Tracker series along with her husband, Will; her sister, Natalie Pope Boyce; and her good friend Jenny Laird.

About the Guide

Everything living on Earth relies on ecosystems to provide food and habitat. Students who understand and appreciate the importance of ecosystems and their biodiversity are better prepared to preserve and conserve them. Who better than Jack and Annie to help students understand how everything is connected?

Time of the Turtle King inspired these activities that encourage an understanding of how things within an ecosystem connect and interact and offer opportunities for students to think about the natural world. In this guide, Jack and Annie will help you to launch learning adventures and bring geography, science, art, poetry, and more to life for students in your second- to fifth-grade classrooms, including modifications and extensions to help you differentiate instruction for your students.

TURTLE TALK

Though they don't use words, animals communicate in many different and amazing ways, like the giant tortoise who seemed to use his eyes to "listen" to Jack and respond with facial expressions as Jack coaxed him to safety. Help students to understand more about animal communication by having them create their own nonverbal language.

First, brainstorm together the ways that people convey messages without words, including body language. Encourage students to demonstrate and explain some communicative gestures and expressions of the hands, face, or other parts of the body. Talk about whether they have observed any pets or other animals communicating. Discuss how they are able to draw meaning from these actions and behaviors.

Next, have students do some research to investigate the ways that tortoises and turtles communicate with each other. Talk about how this compares with the methods of communication of people and other animals they are familiar with.

With all they have learned, have students create their own nonverbal language and try to communicate simple information to other classmates using movement. Pair students to create their own vocabulary that allows them to greet one another. Have them:

- Ask and answer questions about resources (Can we share this space, food, or water?)
- Ask and answer questions about working together or being allies or friends
- Signal danger

Create situations for each pair to demonstrate their language to their classmates. Discuss the languages that have been created and talk about what students could or couldn't understand about each other's new languages.

Modifications and Extensions:

- Have students create and present additional vocabulary in their new languages.
- Work together as a class to develop your own vocabulary using movement or using other means of communication, such as scent, color, or sound.

Resource:

Animal Wised: How Do Turtles Communicate?

TURTLE-Y AWESOME!

Jack gets a unique opportunity to talk directly to the giant tortoise and makes sure to let the turtle king know that he is loved. Ask students to imagine their own chance to have a heart-to-heart conversation with a giant tortoise. Have them use the Turtle-y Awesome reproducible to write their feelings, questions, and at least one thing they like or love about giant tortoises.

Modifications and Extensions:

- Create a display to "shellebrate" student work and to increase respect for one of the planet's oldest creatures.
- Have students write to local, state, or federal officials to share their feelings about turtles and why endangered and threatened turtles should be protected.

ECOSYSTEM CONNECTIONS

Turtle expert Jack explained to the tourists that "an ecosystem is a biological community of interacting organisms and their physical environment." In an ecosystem, different plants and animals depend on their surroundings and other living things to meet their needs. Or as turtle expert Annie would say, "Everything is connected."

Understanding how organisms in ecosystems interact is a little like connecting the pieces of a jigsaw puzzle. Have students use the Ecosystems Connections template to create a jigsaw puzzle that illustrates the different aspects of a Galápagos ecosystem!

First, talk with students about all the parts that make up an ecosystem: plants, animals, insects, and other organisms, and the environment in which they live—dirt, rocks, air, water, sunlight, and weather. Investigate together how these living and nonliving things interact, such as the wind moving plant seeds, fungi and worms decomposing plant matter into soil and nutrients, sunlight and humid conditions making rich growth possible, plants providing food for some animals, etc.

Then together make a list of all the birds, animals, plants, and environments that Jack and Annie encountered on Isabela Island. Have students work in pairs or small groups to research more about those creatures, particularly the other living and nonliving things they depend on. Provide each student with an Ecosystems Connections template and have them draw and color their Galápagos ecosystem on the sheet, including at least three living things featured in the book. Have students cut out their puzzles, swap with a classmate, and solve!

Modifications and Extensions:

- Have students work in groups of six with each student completing just one piece of the ecosystem puzzle.
- Have students demonstrate putting together their own puzzles to their classmates, explaining how everything is connected in the ecosystem they have created.
- Have students demonstrate putting together a classmate's puzzle, offering their own interpretation of the depicted connections in the ecosystem.

Resources:

Darwin Foundation:
Field Guide: Resident Landbirds of Galapagos
Galapagos Conservation Trust: Galapagos Wildlife
World Wildlife Fund: Galapagos Photos and Video

GALAPAGOS GUIDEBOOK

The tourists visiting the Giant Tortoise Center are lucky to have world turtle experts Jack and Annie there to guide them. Get students thinking about what other information tourists would need and have them create their own travel guides for Isabela Island.

First, have students look at a variety of materials that offer information about the Galápagos Islands, like maps, guidebooks, websites, and videos. Help them evaluate their sources of information and compare and contrast the materials. As they develop their guides, they can use both their research and details from the book to include:

Maps. They should draw a map showing where the Galápagos Islands are and label Isabela Island. Encourage students to include other maps that elaborate on details from the book, such as creating a map of the Wildlife Trail or the boardwalk at Flamingo Lagoon.

How to get there. Not everyone can travel by magic tree house! As a class, visit a travel website and determine available transportation from your location to Isabela Island.

What to see. Travel guides should feature wildlife and landscape highlights, providing information about the birds and animals included in the book and details about the island's six active volcanoes.

Tips for tourists. Guides should include the good advice Jack and Annie had for the tourists about respecting the place they were visiting.

To format the guide, have students fold four 8 ½ x 11 sheets in half and staple at the fold to create a 5 ½ x 8 ½ booklet. Students should design a cover, create a contents page, and add their own drawings or images they collect for each section. Create a display for finished travel guides to get others excited about planning a trip!

Modifications and Extensions:

- Have students work in small groups, with each student taking responsibility for one section of the guide.
- If students discover additional information they are excited about, encourage them to include another section in their travel guide.
- Have students create posters, flyers, or short videos advertising their new travel guide.
- According to world turtle expert Jack, the Galápagos Islands are home to more than nine thousand different creatures. Have students create a field guide to the wildlife of Isabela Island that would be helpful for visiting tourists.

Resources:

National Geographic Kids:
NG Kids Head to the Galapagos Islands
National Parks: Galapagos National Park
Galapagos Conservancy: Isabela Island

VOLCANIC ACTIVITY

The Galápagos Islands were created by volcanoes under the ocean depositing layers of lava over millions of years. There are six active volcanoes on Isabela Island alone! Have students make an "active volcano" of their own and demonstrate a volcanic eruption.

Start by talking about the eruption of Cerro Azul on Isabela Island in 1998 mentioned in the author's note. As a class, research Cerro Azul and its recorded eruptions. Discuss any consequences of the eruptions and get students thinking and talking about the effects of volcanic eruptions.

Next, prepare to get messy! Plan this as an outside activity or get drop cloths or old shower curtains to cover classroom tables and floors. For each volcano, students will need:

An empty, clean plastic bottle with its lid (size of the bottle will affect the size of the eruptions)

- Garden or potting soil
- A garden trowel or small hand shovel
- A 1-cup measuring cup
- Water
- Red food coloring
- Liquid hand or dish soap
- Baking soda
- A teaspoon
- Vinegar

Have students work in small groups to:

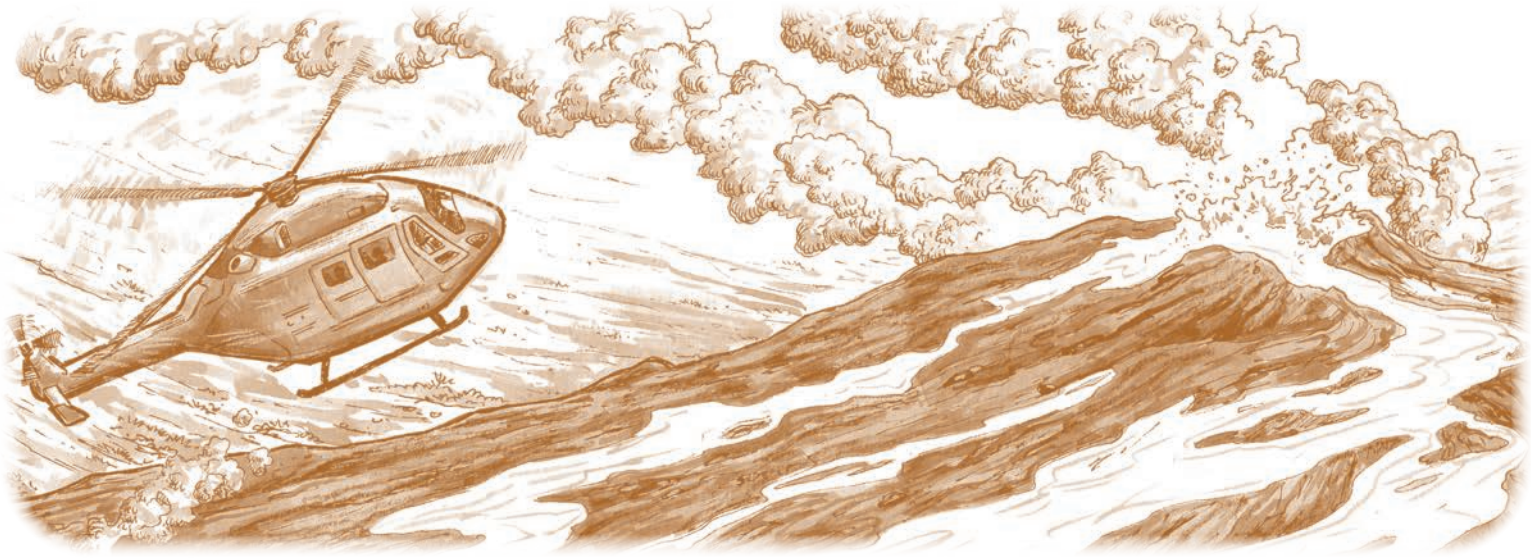
- Put 3 heaping teaspoons of baking soda into the bottle. Close the lid on the bottle.
- Place the bottle in the center of the covered work surface and scoop and mound soil around the bottle to form the volcano. Add some water to the soil to help shape the volcano dome.
- Add soil until the bottle is covered up to the neck.
- Put ½ cup of vinegar, a squirt of liquid soap, and 5 drops of red food coloring into the measuring cup and stir.
- Take the lid off the bottle and pour the vinegar mixture in.
- Watch the eruption!

Modifications and Extensions:

- Allow students to experiment with different amounts of baking soda, soap, and vinegar and see how the volcano's eruption changes.
- If available, have students add small toy animals on the surface of their volcanoes and observe the consequences of being in the way of flowing lava or try to rescue them before the lava reaches them.

Resources:

National Geographic: Volcanoes 101
NASA: What Is a Volcano?
(Cerro Azul, 1998): Tortoises Rescued from Lava



GALÁPAGOS GUARDIANS

Jack and Annie become heroes when they help save the giant tortoise from the volcano. Talk with students about what makes someone a hero. Ask them to identify other heroes in the book.

Heroes of all kinds have been celebrated through poetry and song for thousands of years. Have students write a song or poem to celebrate or honor a hero or heroic efforts made in *Time of the Turtle King*. Have students present their poems or songs to their classmates.

Modifications and Extensions:

- Have students illustrate their poems.
- Have students make a list of everyday heroes and discuss how they contribute to our health, education, and safety. Write a song or poem to recognize an "everyday hero" that is part of their lives.

EXPERT HELP

Create an opportunity for your students to hear from an expert by inviting one into your classroom, in person or virtually. It may be challenging to find a turtle expert, but rangers from National and State Parks and Forests and the Bureau of Land Management can speak to students about ecosystems. Many zoos and museums will share their expertise about animals. Colleges and universities may also be a source of experts.

Have intention and purpose in inviting an expert guest speaker. Work with students to have them generate the questions that they will ask their guest to get them excited about learning from an expert!

Modifications and Extensions:

- Invite students to share how they are experts on a chosen topic. Have them make name tags that include their "expert" title and give them an opportunity to share their knowledge with their classmates.
- If, after reading and research, students have a question that genuinely requires the help of an expert, have them find an expert to write to and ask their questions.

Resources:

Center for Interactive Learning and Collaboration
Skype a Scientist
National Park Service

Rachael Walker (belleofthebook.com) created this guide. She consults on a wide variety of educational programs and multimedia projects, and develops educational materials and reading resources for children, parents, and teachers.

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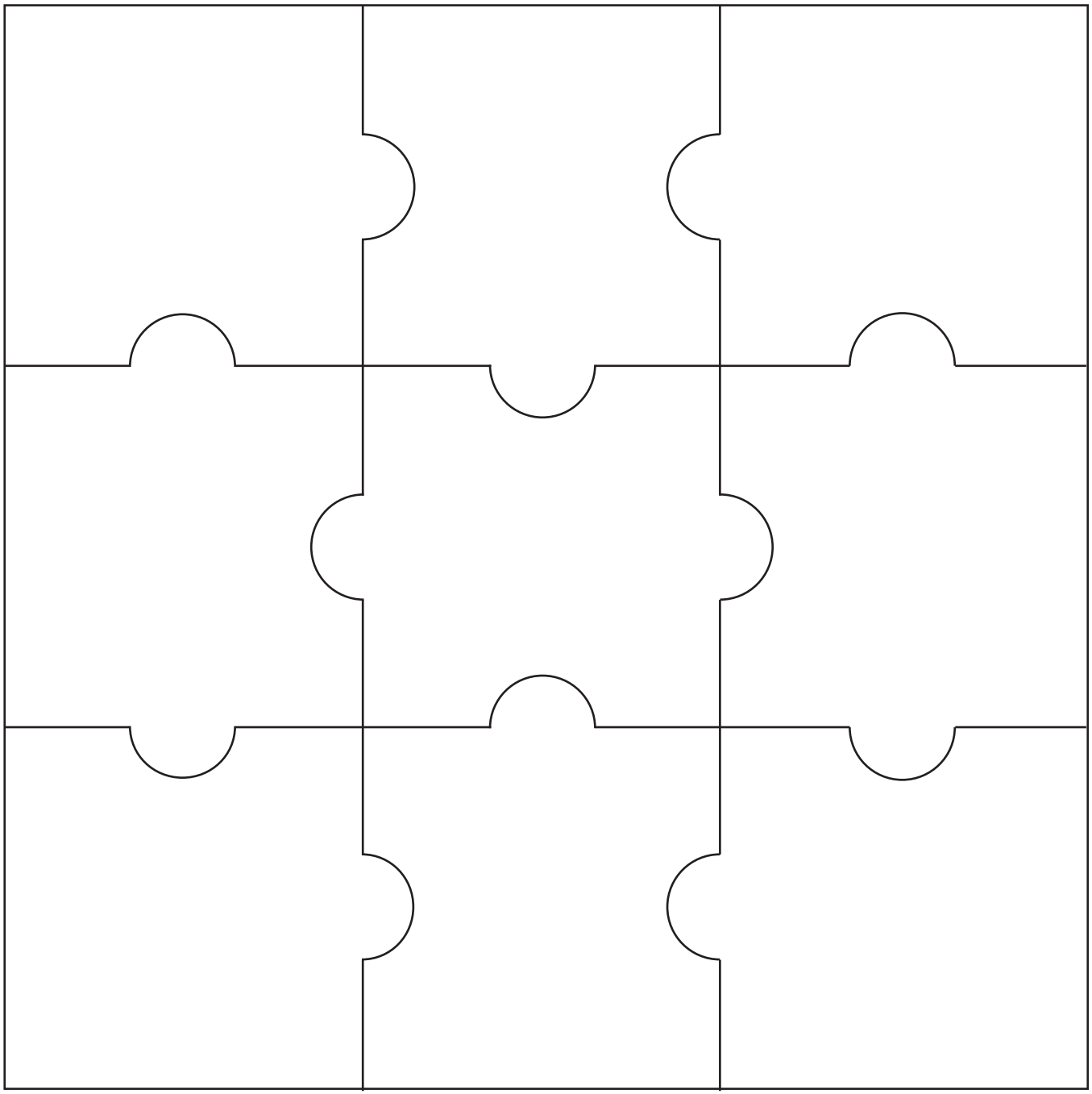
ECOSYSTEM CONNECTIONS

Draw and color the unique wildlife and environment of a Galápagos ecosystem.
Then cut out your puzzle, share it with a friend, and talk about
how all the parts of an ecosystem connect!



TURTLE-Y AWESOME!

Give turtles and tortoises some love! Write a note that shares how you feel about these reptiles or use this card to send a letter to encourage others to help protect turtles and tortoises in your community and around the world.