

Life Sciences Lesson Plan for Grades K-2 for

The Dragonfly Door

ISBN: 9781934066126

Focus on life cycle, insect anatomy and ecology themes
By Lynne Bleeker, Science Education Specialist

This children's book can be used to address the following K-4 National Science Education Standards:

Unifying Concepts and Processes:

- Systems, order and organization
- Change, constancy and measurement
- Form and function

Science as Inquiry

- Ask a question about objects, organisms and events in the environment

Life Science

- Organisms have basic needs. For example, animals need air, water, and food; plants require air, water, nutrients, and light. Organisms can survive only in environments in which their needs are met. The world has many different environments, and distinct environments support the life of different types of organisms.
- Each plant or animal has different structures that serve different functions in growth, survival, and reproduction.
- Plants and animals have life cycles that include being born, developing into adults, reproducing, and eventually dying. The details of this life cycle are different for different organisms.

In districts using FOSS (Full Option Science System), this book can be used with the following kits: *Animals Two by Two*; *Insects*; and *Insects and Plants*. If using the book with *Insects* or *Insects and Plants*, it would be best after you have taught Investigation 1, (Mealworms) and ideally also after Investigation 3, (Milkweed Bugs). That way, the children can have first-hand experience observing insects that undergo complete and incomplete metamorphosis before reading the book. They will then be able to better relate to the changes that Lea undergoes in the book.

Key words: dragonfly, nymph, Lea, Nym, egg, lily pad, frog, fish, snail, weed, rock, segments, antennae/antenna, legs

The Dragonfly Door – ecology/life cycle lesson plan

Lesson Objectives:

- Students will learn about the life cycle of dragonflies
- Students will compare and contrast incomplete and complete metamorphosis in insects
- Students will review the anatomy of insects
- Students will learn about the ecology of freshwater lakes, including common species and their interactions

Note to teachers: many teachers find it convenient to incorporate questions from the lesson plan by writing them on Post-it notes, and placing those notes on the pages to be read. This eliminates moving back and forth from the book to the lesson plan. The book pages are not numbered, so for convenience this lesson plan will pretend that the dedication page is Page 1 and the rest of the pages continue sequentially from there. Words in *italics* can be asked “as is” or re-phrased according to your preference. Be sure to read the book through yourself, before sharing it with the children.

Lesson Introduction:

Say: “*Children, today we are going to read a very special book called The Dragonfly Door. The book is written by John Adams and illustrated by Barbara Gibson.*”

1. Hold up the book so they all can see the cover. Ask the children to look at the cover and see what they can figure out about the book before beginning to read. *What kinds of **animals and plants** do you **predict** that the book will be about?* (Depending on the age of your students, you might keep a list on the board or chart paper of the pond animals and plants illustrated. Entitle it “Pond Plants and Animals”)
2. *What do you think the “**dragonfly door**” might be?* Encourage many students to share their thoughts and predictions.
3. Read the dedication page. Point out to the children that there is a note by the author, JA, and also a note by the illustrator, BLG. Show the children the picture at the bottom of the page, and add “frog” and “lily pad” to the list of marsh organisms.
4. Turn the page and show the students the picture on the next two page spread (Pages 2-3). *What kinds of animals do you see in the picture? (Insects, snails, fish) All of these animals live in the water. Which animals do you think will be the main characters in this story? The animals that look largest in the picture are called **dragonflies**. They are a type of insect. The life cycle stage in the picture is called a **nymph**. That’s what dragonflies look like when they are young.*

Point out the **eyes, antennae, 6 legs**, and **segments** on the bodies of the dragonfly nymphs. Ask students to tell what each of these body parts do for the animals.

5. Say, *"In the book, the dragonflies are talking to one another. Can dragonfly nymphs really talk? No, they can't. But it's fun to pretend! See if you can figure out what their names are."*
6. Read pages 4-5. *Are the nymphs the same age? (No – Lea is 3 and Nym is almost two.) What were they when they were first born? (Eggs) Where do they sleep? (in a nest of leaves and twigs under a rock) Do you think they can really breathe under water? Isn't that AMAZING?!*
7. Read pages 6-7 and point out the nest under the rock as well as the weeds that help hide it. *Why might it be good for young insects to live under a rock hidden by water plants? (Protection from other animals that might want to eat them.)*
8. Read pages 8-9. *Why does Nym run away? What new animal does she find to play with? Add **tadpole** to the list of animals.*
9. Read pages 10-11. *Where does Lea go, and what does she do to be nice to Nym? What problem is she having? (She goes to get flowers for Nym, but she is tired and having a hard time moving.) Point out the inset picture showing Lea's tired face.*
10. Read pages 12-13. *What happens when Nym comes home to the nest? (Lea is not there.)*
11. Read pages 14-15. *Who does Nym talk to first? Add **beetle** to the list of animal names. If students have raised mealworms, point out how these beetles are like their darkling beetles, and how they are different. (Both have hard shells, 6 legs, eyes and mouths, but the water beetles can breathe under water, while darkling beetles need to breathe air like people do.)*
12. Read pages 16-17. *Do the minnows offer Nym any help? Add **minnow** to the marsh animal list.*
13. Read pages 18-19. *What new animal is in the picture? Point out that the **frog** is a grown-up tadpole.*
14. Read pages 20-21. Ask students why they think the picture is so dark. (The artist uses light to communicate Nym's sadness as well as the fact that it is nighttime.) *Why is Nym sad?*
15. Read pages 22-23. *What happens the next morning? (**Saucer bugs** come to the nest and Nym hopes it is Lea, but it is not.)*

16. Read pages 24-25. Point out Nym's legs grasping the water plant as she rests. *What happens when Nym goes to sleep the next night?*
17. Read pages 26-27. Point out the trace of Nym still on the plant as she talks to Lea in her dream. *Is the picture dark or bright?* (Bright and colorful, and very beautiful.) *Why do you think this is?* (Lea is in a very happy place.) *Did Lea go away because Nym yelled?* (No – she went away because it was her time to change from a water nymph body.) *Will Nym ever see Lea again?* (Yes, when she changes from a water nymph.)
18. Turn the page. Say, “Wow, what a big picture is on the next page. Who is that? (Lea) What is different about her? (She has wings, and she is not tired any more.) Read the pages – 28-29. How does Nym feel inside? (She feels the love from her friend's hug.) Is Lea there when Nym wakes up? (No)
19. Examine the picture on the next pages, 30-31. *What do you see?* (A shadow of a dragonfly.) Read the text on the pages. *What does Nym remember Lea saying?* (I'll be waiting for you.) *How does that make Nym feel?*
20. Read pages 32-33. *Is Nym happy now?* (No, she is still sad for many days, but she begins to feel happier.) *What does she do that is helpful?* (She goes to live with the beetle family.) *Does she have anything to remember Lea by?* (Yes, a soft leaf that Lea gave her.) *What makes Nym smile?* (Knowing that Lea is a dragonfly in a special place beyond the marsh and that she will see her again.)
21. Read pages 34-35. Be careful to go down on page 34, and then read from the bottom up on page 35 to get the life cycle stages in order. If your artistic ability is up to it, diagram the life cycle stages of the dragonfly on chart paper or the white board. For older students, write the names of the life cycle stages: **egg**, then **nymph** (1-6 years), (write nymph several times, with “**molting**” in between), then final molting, and **adult dragonfly**. Discuss each picture and caption.
22. Show the children the picture on the last page and ask them to describe what the picture is showing. (Two adult dragonflies, possibly Lea and Nym together.)
23. *Now that we have read the book, what do you think the Dragonfly Door is?* (Answers will vary)

Please continue to the next page of the lesson plan for some possible writing prompts.

As time and children's ability levels permit, have the children draw or write a response to the book. Possible writing prompts include:

- Kindergarten or older children – draw a picture of your favorite part of the Dragonfly Door. Be sure to include Lea or Nym and write their names underneath the picture. (Be sure that the names are written up for the children to copy, stressing the beginning letters L and N and their sounds.)
- Kindergarten or older children – Draw a picture of the water animals and plants in the marsh. Write the names of as many of the animals and plants as you can.
- Kindergarten or older children - Have you ever had someone go away like Lea does in the book? Draw a picture or write about how that felt. What things helped you to feel happy again?
- Older children – Write a few sentences describing what is happening in the final picture of The Dragonfly Door. What do you suppose Lea and Nym are saying to one another?
- Older children – if you had a friend who had someone special go away, what would you say to that person to help them? What lessons from The Dragonfly Door would you share with that person? Write a letter to your friend telling them what you have learned.

An Important Message from Feather Rock Books, Inc.:

The statement provided in this lesson plan for *The Dragonfly Door* is the professional opinion of a Science Education Specialist and does not represent the view or opinion of Feather Rock Books, Inc.

Feather Rock Books, Inc. assumes no responsibility for the professional opinion of such specialist or any consequence relating directly or indirectly to any action or inaction you take based upon the information provided in this lesson plan.

Feather Rock Books, Inc. has provided this lesson plan for informational and educational purposes only. Teachers and other individuals who download and read this lesson plan should determine its suitability for individual students and / or children.

The information provided is not intended to create, nor does your reading of it constitute, a relationship of any kind with the Science Education Specialist or with Feather Rock Books, Inc. and its employees.

Feather Rock Books, Inc. recommends that you seek the advice of a licensed teacher and a licensed grief and bereavement counselor or licensed psychologist before acting upon any of the information provided in this lesson plan.