



Lesson Walkthrough

Introduction

This guide walks through a typical chapter and lesson in an Interactive Science module.

This guide discusses how to launch the chapter Big Question and use the tools to assess prior knowledge and preload vocabulary. The guide also explains how the 5E Learning Cycle is integrated into a typical lesson. Finally, the guide examines the tools for wrapping up a chapter.

This guide is based on the National Version of the Ecology and Environment module; however, the structure applies for every module.

Launching the Big Question

Interactive Science utilizes the Understanding by Design instructional model, so each chapter begins with a Big Question. This question will help students unlock the key understandings throughout a chapter.

Populations and Communities

Introduce the Big Q UbD

Have students look at the image and read the Engaging Question and description. Ask them to write a hypothesis for how the sea anemone might benefit from having the clownfish nearby. Have volunteers read their hypotheses out loud. Point out that living things interact with one another in many ways. Tell students they will learn more about how living things affect one another in this chapter.

Ask: **Which people in your community help others who live there?** (*Firefighters save people from fires, police keep everyone safe from criminals*)
Can anyone think of something or someone that may hurt the community? (*A thief, the flu*)
Are there ways to protect yourself from these dangers? (*Locking doors, getting a flu shot*)

To learn more about how Understanding by Design is used in Interactive Science, watch the Understanding by Design tutorial on this Web site.

Each chapter begins with an activity to engage the students. This activity relates to the photographs on the opening pages. For this sample chapter, students are asked the question *Why do clownfish play with poison?* Use this question to lead a discussion with students about how living things interact with each other in many different ways.

Use this discussion to introduce this chapter's Big Question: *How do living things affect one another?* In the Big Question section, read about the life of clownfish and how these fish protect themselves. Students will then make a hypothesis about how sea anemone might benefit from having clownfish around.

Students then learn more about clownfish and sea anemones by viewing the Untamed Science video that accompanies the chapter. Each video reinforces the chapter Big Question.

These videos are available at MyScienceOnline.com or on DVD.

The LabZone icon indicates that there are inquiry-based activities for the launch. For this chapter, assign a lab activity or a scenario-based investigation.

Through the digital path, assign the chapter launch to students on MyScienceOnline.com.

Students can trace the Big Question throughout the online chapter to help them unlock the clues to understanding the Big Idea of the chapter.

Getting Started

After launching the chapter, use the Getting Started section to do a quick check of the students' understanding, introduce the vocabulary, and preview the chapter.

In the Check for Understanding section, have students read the short paragraph that includes key vocabulary words.

Check Your Understanding

1. Background Read the paragraph below and then answer the question.

Raquel planted a garden in a sunny area near her home. First, she loosened the **soil**, so the plant roots could easily grow. If days passed with no **precipitation**, she watered the plants. That was all she had to do—the rest of what the plants needed came from the **atmosphere!**

- How do soil, precipitation, and the atmosphere help a plant grow?

Sample: Plants get minerals from the soil, water from precipitation, and gases (carbon dioxide and oxygen) from the atmosphere.

MY READING WEB If you had trouble completing the question above, visit My Reading Web and type in *Populations and Communities*.

Then, have them answer the question that relates to the paragraph. Students who struggle to answer the question may not have the necessary background to be successful with this chapter. These students will require additional support.

The program provides support through My Reading Web, which is located on MyScienceOnline.com. Here, students have the opportunity to build more background knowledge by reading individualized selections that are written at their Lexile level.

Help students preload vocabulary concepts by introducing a vocabulary skill and focusing on visual vocabulary. The vocabulary skill for this chapter is to learn about the Latin word origins of key vocabulary words.

Use the pictures on the next page to help students build vocabulary using visuals. Ask the students to say the vocabulary word, and then read the definition and sample sentence that is located in the Teacher's Edition. There is a comprehensive list of chapter vocabulary words listed in the Chapter Preview.

There are also icons listed at the end of each lesson. In this example, the bull's-eye icon points out the main reading strategy that will be targeted in this lesson. Students will focus on the skill *compare and contrast*. The yellow triangle points out an inquiry skill that will be the focus of the lesson. In this lesson, students will work on drawing conclusions.




Lesson Walkthrough

Each lesson begins with the Unlock the Big Question section. By focusing on Key Questions, students gradually build up enough information to answer the Big Question at the end of the chapter.

Each lesson conforms to the 5E Learning Cycle. The Teacher's Edition will highlight each of the five phases. Let's take a look at examples of the learning cycle in this model lesson.

Use My Planet Diary to engage students. For example, share information about the mouse lemurs of Madagascar. Based on this information, students will write their answers to related questions. The Explore activity for this lesson is located in the Teacher's Lab Resource book. It is indicated by the yellow LabZone triangle in the student edition. Here, students will use photographs to explore living and nonliving things in an ecosystem.

Explore

Lab Resource: Inquiry Warm-Up 

1 **WHAT'S IN THE SCENE** Students will identify parts of a habitat.

In the first Explain activity students read about the key concept, study the visual, and write about it in their books. They will also answer a question to demonstrate their understanding of this key concept.

The Elaborate activity is also located in the Teacher's Lab Resource book and is again indicated by the yellow LabZone icon. Two activities appear periodically in the Elaborate stage: *Apply It!* and *Do The Math!* These activities require the students to use what they have learned and apply it to a new scenario or math activity. In this Elaborate activity, students will study an illustration of an animal. Using their observations, they will draw conclusions to describe the animal's habitat.

Students will then assess their understanding in the Got it? section.

If students are having trouble with a concept, direct them online to My Science Coach. There they will find activities they can use for remediation.

One time per chapter, the Explain, Elaborate, and Evaluate phases are repeated for each key concept. The Explain and Elaborate phases contain activities meant to allow students to explore the Big Question. These activities help students reinforce the Big Ideas of the chapter and apply the lesson concepts.

If students are using the digital path, they will see the lesson broken down into 5E Learning Cycle tabs.

Each tab contains instruction and engaging activities that make the lesson an interactive learning experience.

Chapter Wrap-Up

At the end of the chapter, there are a few tools that will help wrap up the chapter.

First, there is a study guide. This study guide lists the key concepts and vocabulary.

LESSON 1 Living Things and the Environment

-  An organism gets the things it needs to live, grow, and reproduce from its environment.
-  Biotic and abiotic factors make up a habitat.
-  The levels of organization in an ecosystem are organism, population, and community.

Vocabulary

- organism • habitat • biotic factor
- abiotic factor • species • population
- community • ecosystem • ecology

Next, there is a Review and Assessment section.

For Lesson 1, students answer general knowledge questions, sequence concepts, apply concepts, and draw conclusions. They also write a paragraph in the Write About It section. When students are finished, use the rubric in the Teacher’s Edition to assess their responses.

Write About It Assess student’s writing using this rubric.				
SCORING RUBRIC	SCORE 4	SCORE 3	SCORE 2	SCORE 1
Getting food, water, and shelter from habitat	Student describes sources of all items in detail.	Student describes sources of all items.	Student describes some sources of items.	Student does not describe sources of items.
How habitat is different from others	Student clearly identifies ways in which the habitat differs from others.	Student identifies ways in which the habitat differs from others.	Student incompletely identifies ways in which the habitat differs from others.	Student does not identify ways in which the habitat differs from others.

Finally, students have an opportunity to practice standardized test-taking skills in the Standardized Test Prep section. In this chapter, students learn a strategy for interpreting test illustrations. Students also use a diagram to write a constructed response to a test item.

Review

This guide discussed the features of a typical chapter and lesson.

First, the guide explained how to launch the chapter Big Question.

Next, the guide examined how to use the Getting Started feature to assess students' understanding and preload vocabulary.

Then, the guide traced the 5E Learning Cycle through a lesson.

The guide explained how hands-on Lab Zone activities in the Teacher Lab Resource are woven in at the start of each lesson and at the end of every key concept, playing a very prominent and important role in Interactive Science.

Finally, the guide discussed the tools available for wrapping up a chapter.