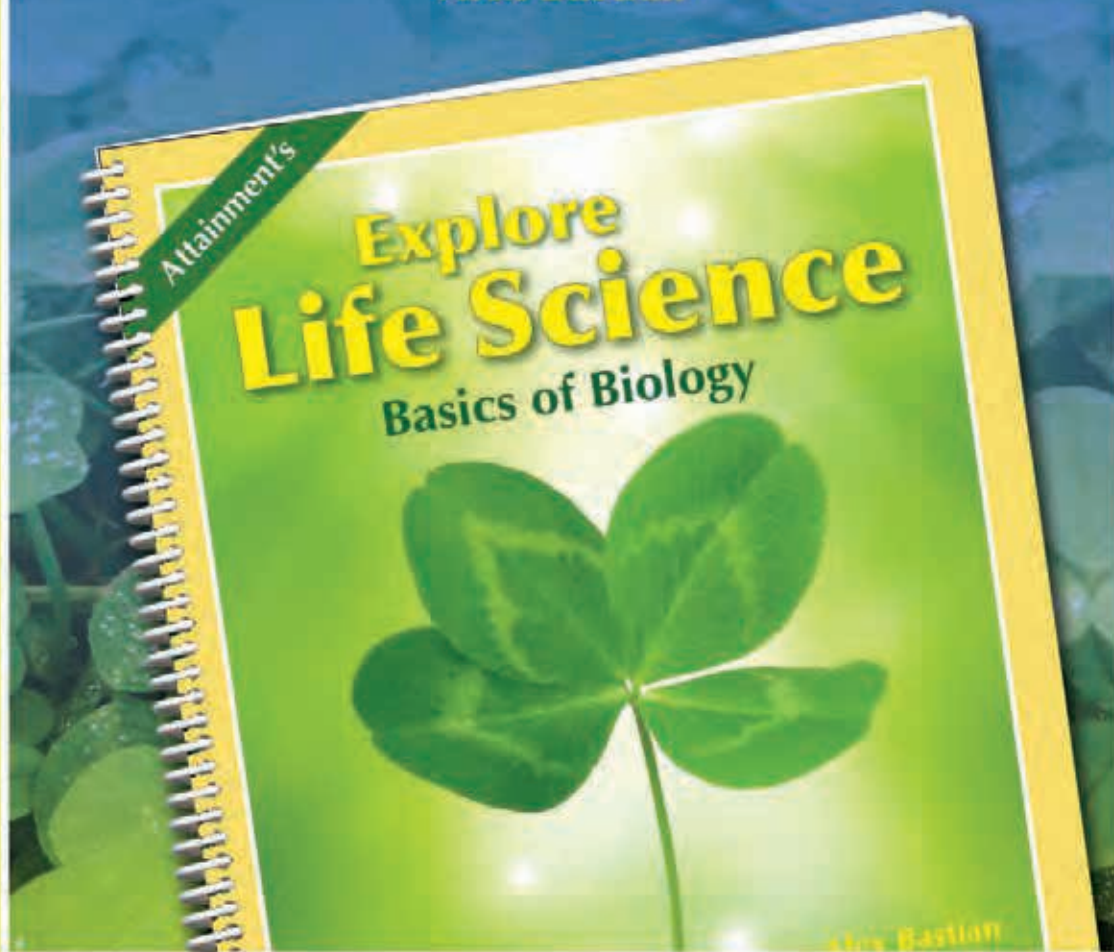


Attainment's

Explore **Life Science** Instructor's Guide

Alex Bastian





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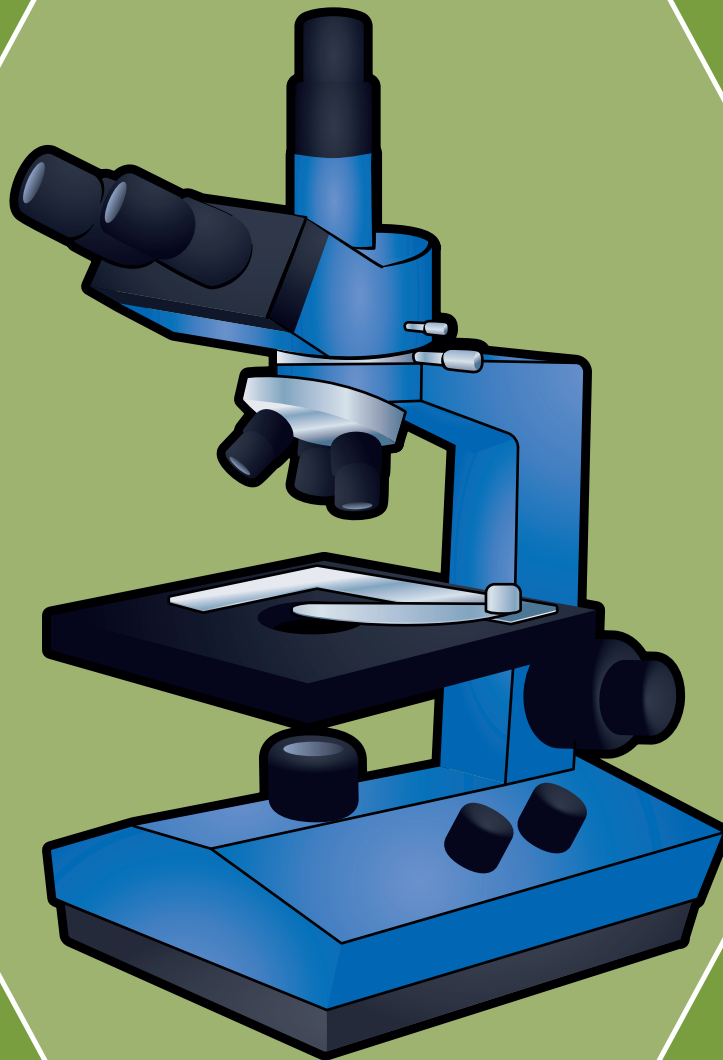
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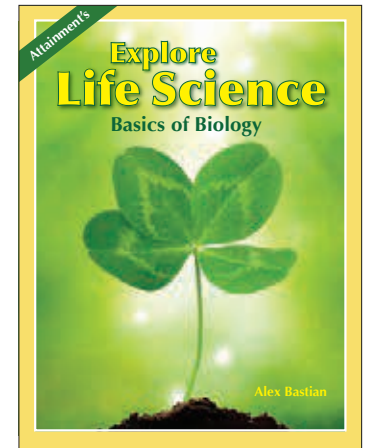
CHAPTER

1

Exploring Life Science

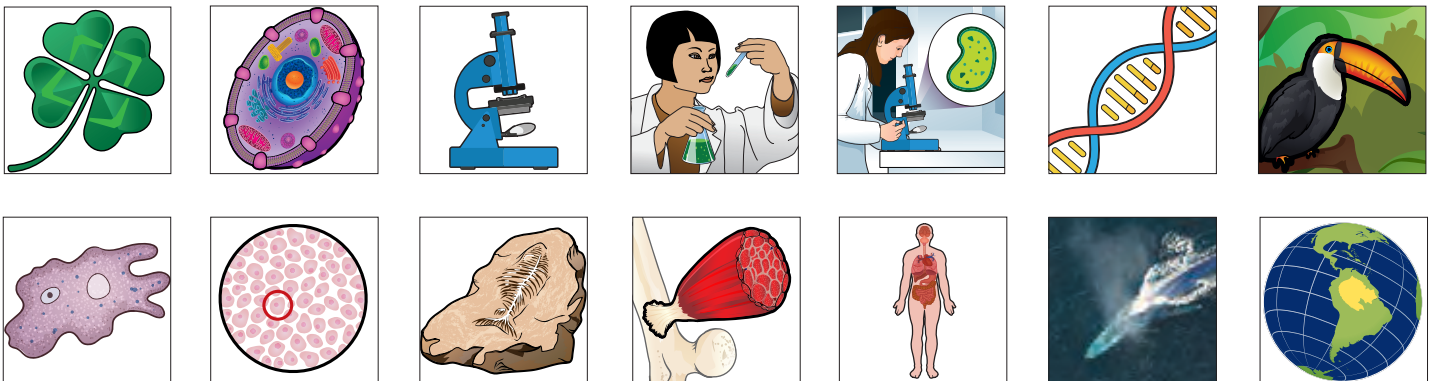


Exploring Life Science



This curriculum covers the basics of biology. To start, it is important to understand that biology, the study of life, is a very large field. Biology, even at a basic level, can be very complicated. This curriculum uses several tools to make the learning process easier. Images, labs, and animations will be presented to the students in every chapter. A cell model is provided and will be used throughout the curriculum. This first chapter serves as both an introduction to biology and an introduction to the methods used in the curriculum.

Lesson	Type	Objective	Student Book Page	Content
1.1	Getting Started	Identify two facts about the front cover Identify two facts about the major illustration	5-7	Chapter title page, Big Ideas, Major Illustration
1.2	Vocabulary and Overview	★ Identify that biology is the study of life ★ Identify that biologists study biology	8-10	Vocabulary, What is Biology?
1.3	Topic Sequence A	★ Identify that biologists learn new things by doing experiments ★ Identify that a lab is a good way to learn biology concepts	11-14	Images, Models, Animation, Lab
1.4	Quiz/Review		15-16	Quiz



Chapter 1 sample images included in the Image Library

Exploring Life Science

Lesson Type

Getting Started

Objective

- ▶ The student identifies two facts about the cover and Major Illustration.

Cover and Chapter Title Page, p. 5

- ▶ Ask the students, “What do you think the book will be about?”
- ▶ There is a plant on the cover.
- ▶ The three images on the title page are a cell model, a microscope, and a plant.
- ▶ Read all the text on the cover and title page, then discuss the following points:
 - Biology is a branch of science.
 - In this book, we will learn all about the science that makes us alive.
 - There will be a lot of hands-on activities to help us learn.

Big Ideas, p. 6

- ▶ Read the text for each Big Idea, and discuss the following points:
 - Biology is a very large subject.
 - We will do some experiments to learn new things, just like biologists.
 - Labs are hands-on lessons.

Major Illustration, p. 7

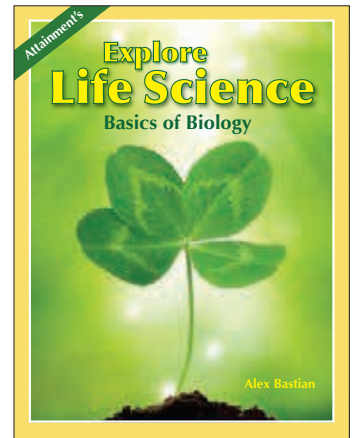
- ▶ Read the text, then discuss the following points:
 - This book teaches biology in different ways. This chapter tells us what those ways are.
 - There are many topics in biology.
 - Biology studies things small and large. DNA is very small, while trees are very large.
 - Biologists often work in a laboratory.

Word Study

These everyday words are highlighted in the sample pages on the right: **concepts, exploring**. Say the words aloud and ask the students to repeat them. Read the sentences in which they appear, and discuss their definitions.

Introductory Script

“Today we’re starting a new subject called Biology. It’s a science subject about what makes things alive. The book we are using is called *Explore Life Science*. Let’s begin on page 5.”



chapter 1

Exploring Life Science

5

big ideas

Biology is the study of life.

People who study biology are called biologists.

A lab is a good way to learn biology concepts.

Biologists learn new things through experiments.

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Exploring Life Science

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Exploring Life Science

Lesson Type

Vocabulary and Chapter Overview



Objectives

- ★ The student identifies that biology is the study of life.
- ★ The student identifies that biologists study biology.

Vocabulary, pp. 8–9

- ▶ Read each vocabulary word and its definition.
- ▶ Write the two “Find the words” on a whiteboard, and read them aloud.
- ▶ Ask the students to either (1) copy them in their **Student Book**, on the whiteboard, or on a separate piece of paper; or (2) point to the word you’ve written when it’s spoken.
- ▶ Use the corresponding **Study Cards** when presenting the vocabulary words.
- ▶ Tell the students that “each word will be reviewed again after it’s read in a lesson.”
- ▶ The quiz vocabulary words are **model, animation, and dynamic**.

What is Biology? p. 10

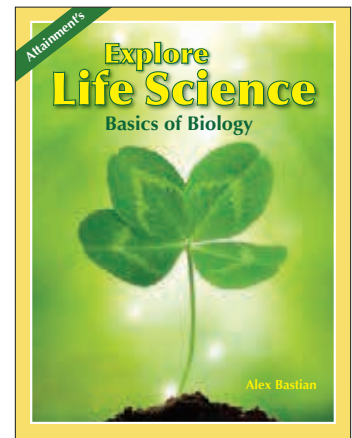
- ▶ Read the title “What is Biology?” Then discuss the following points:
 - There are so many living things in the world to study.
 - The science behind life is very complicated.
- ▶ Read the passage and ask the students to “follow along in your book as I read the text to you.” When finished, review the definitions of the new vocabulary words in the passage: **biology** and **biologist**. Then discuss four ideas in the passage, for example:
 - A biologist is a type of scientist that studies biology.
 - Biology is the study of life.
 - Biochemistry and ecology are just two examples of areas of biology; there are many others.
 - There is still a lot to learn about life on Earth.
- ▶ Review the two vocabulary words in the Chapter Overview and their definitions at the end of the lesson.

Word Study

These everyday words are highlighted in the sample pages on the right: **life, hands-on, subject**. Say the words aloud and ask the students to repeat them. Read the sentences in which they appear, and discuss their definitions.

Introductory Script

“The chapter we’re studying is called Exploring Life Science. Today we will read about what biology is and learn some important vocabulary words. Let’s begin on page 8.”





vocabulary



biology The study of **life** and living things.



biologist A scientist who studies *biology*.



image Any type of picture.



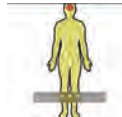
model Shows what something looks like in real life.



A picture of any type.



vocabulary



animation Changing images that show changes and movement.



dynamic Always changing or moving.



lab A **hands-on** way to learn about *biology*.



experiment A procedure done to learn new things.



A hands-on way to learn about biology.

What is Biology?



Biology is the study of life and living things. Though it may sound simple, life is actually very complicated. Because life is so complicated, biology is a very large **subject**. There are many areas of biology, and different types of **biologists** study all of them. Studying all areas of biology is important to better understand the amazing existence of life.

Exploring Life Science

Lesson Type

Topic Sequence A



Objectives

- ★ The student identifies that biologists learn new things by doing experiments.
- ★ The student identifies that a lab is a good way to learn biology concepts.

Images, p. 11

- ▶ Read the title “Images” and the image labels. Then discuss the following point:
 - There are many types of images.
- ▶ Read the passage and ask the students to “follow along in your book as I read the text to you.” When finished, review the definition of the new vocabulary word in the passage: **image**. Then discuss ideas in the passage, for example:
 - Pictures help us learn about biology.

Models, p. 12

- ▶ Read the title “Models.” Then discuss the following point:
 - A model can show what the inside of a cell looks like.
- ▶ Read the passage and ask students to “follow along in your book as I read the text to you.” When finished, review the definition of the new vocabulary word in the passage: **model**. Then discuss ideas in the passage, for example:
 - Models usually show very small things, but not always. This means sometimes models are a guess.

Animation, p. 13

- ▶ Read the title “Animation.” Then discuss the following point:
 - Animations are like mini movies.
- ▶ Read the passage and ask the students to “follow along in your book as I read the text to you.” When finished, review the definitions of the new vocabulary words in the passage: **animation** and **dynamic**. Then discuss two ideas in the passage, for example:
 - Animations are helpful to see things that change in biology.
 - Cartoons are made with animation.

Lab, p. 14

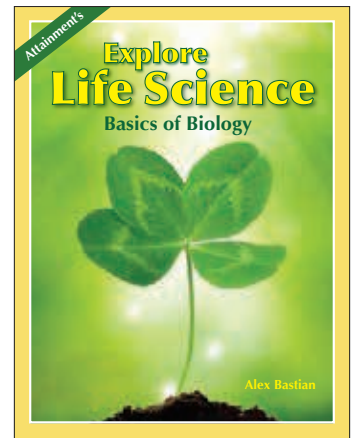
- ▶ Read the title “Lab.” Then discuss the following point:
 - This symbol appears at the top of every Lab page in the book.
- ▶ Read the passage and the ask students to “follow along in your book as I read the text to you.” When finished, review the definitions of the new vocabulary words in the passage: **lab** and **experiment**. Then discuss two ideas in the passage, for example:
 - Biologists learn new things by doing experiments.
 - A lab is a good way to learn biology concepts.
- ▶ Review all six vocabulary words in the lesson and their definitions.

Word Study

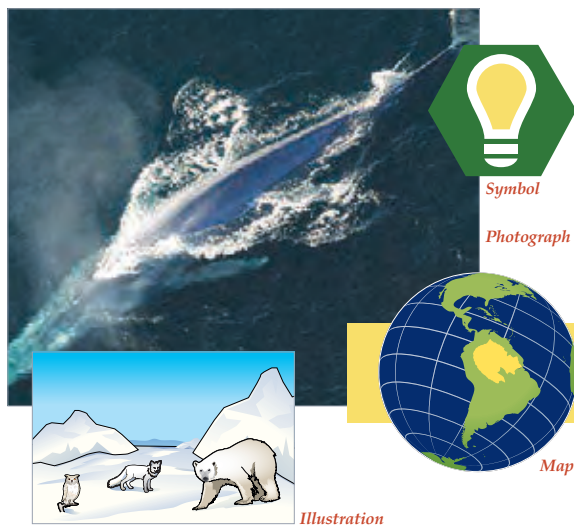
These everyday words are highlighted in the sample pages on the right: **visual**, **processes**, **represent**. Say the words aloud and ask the students to repeat them. Read the sentences in which they appear, and discuss their definitions.

Introductory Script

“The chapter we’re studying is called Looking at Cells. Today we’ll read four interesting passages. They are all about tiny cells. Cells make up all living things. Let’s begin on page 11.”

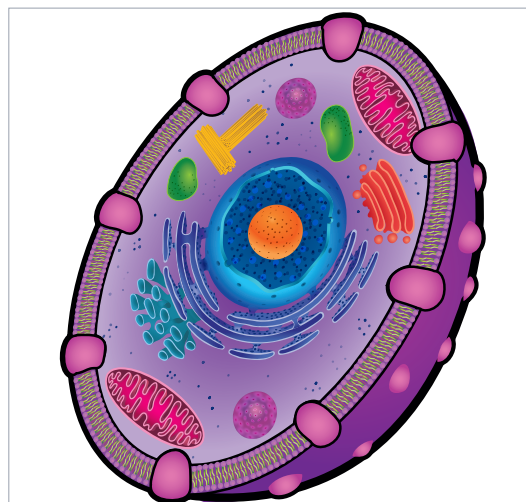


Images



Images are one of the most common and useful types of study tools. **Visual** images are very helpful when learning biology. Photographs, illustrations, symbols, and maps are examples of images that help us learn about biology. Viewing different images when studying helps us remember what we learn.

Models



Models are created to help us see what very small things in biology look like. A model can be an image or an object. A model of a microscopic cell could be large enough to hold in your hands. Models **represent** biologists' ideas of how something looks. Larger things like the human body can also be made into a model.

Animation

Animations are like mini movies made with a computer. In biology, animations are used to show microscopic **processes** that cannot be seen otherwise. Everything in biology is **dynamic**, and animations help us visualize these changes. Faster computers and better software have made the use of detailed animations in learning more common.



Lab



A **lab** is a hands-on way to learn about different areas of biology. Biologists perform **experiments** to help answer questions about the world around them. Most of what has been learned by biologists was discovered by performing experiments. Labs could consist of watching a plant grow or looking at a model. Labs and their results make biology easier to understand.

Exploring Life Science

Lesson Type

Quiz/Review

Procedure

- ▶ Review the **Study Cards** for this chapter. Review all the cards first. The three vocabulary words on the quiz are **model**, **animation**, and **dynamic**. These three cards can be further reviewed to help prepare for the quiz.
- ▶ Choose the procedure that works for you:
 - Have the students take the quiz in the book independently.
 - Read the questions and choices to the students, and have them circle or point to their answers.
 - Use the quiz as a chapter review and not a comprehension assessment.
- ▶ The quiz is also available in two digital formats: PDF and GoWorksheet Maker.
 - Print out the quiz with symbols from the PDF for the students to write on.
 - Have the students take the quiz without symbols (PDF or GoWorksheet) after using the book quiz as a review.
 - Have the students only take the GoWorksheet Maker quiz.
- ▶ Choose the method that works for you:
 - Have the students complete the Write About It exercise independently.
 - Read the writing ideas from the Write About It **Reference Guide** to the students to stimulate their writing.
 - Have the students apply sentence strips in the Write About It exercise as an alternative to writing.

Write About It



quiz

(Circle) the correct answer.

- Biology is the study of _____.
- _____ study biology.
- Biologists learn new things by doing _____.
- A _____ is a good way to learn biology concepts.

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- A _____ shows what something looks like in real life.
- Movement can be shown with _____.
- Something is _____ if it is always changing or moving.

write about it

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EXPLORE LIFE SCIENCE

EXPLORE LIFE SCIENCE

Big Ideas

EXPLORE LIFE SCIENCE

Biology is the study of life

Chapter 1

EXPLORE LIFE SCIENCE

EXPLORE LIFE SCIENCE

Vocabulary

EXPLORE LIFE SCIENCE

A **biologist** is a scientist that studies biology

Chapter 1

EXPLORE LIFE SCIENCE

EXPLORE LIFE SCIENCE

Vocabulary

EXPLORE LIFE SCIENCE

An **image** is any type of picture

Chapter 1

EXPLORE LIFE SCIENCE

EXPLORE LIFE SCIENCE

Vocabulary

EXPLORE LIFE SCIENCE

A **model** shows what something looks like

Chapter 1