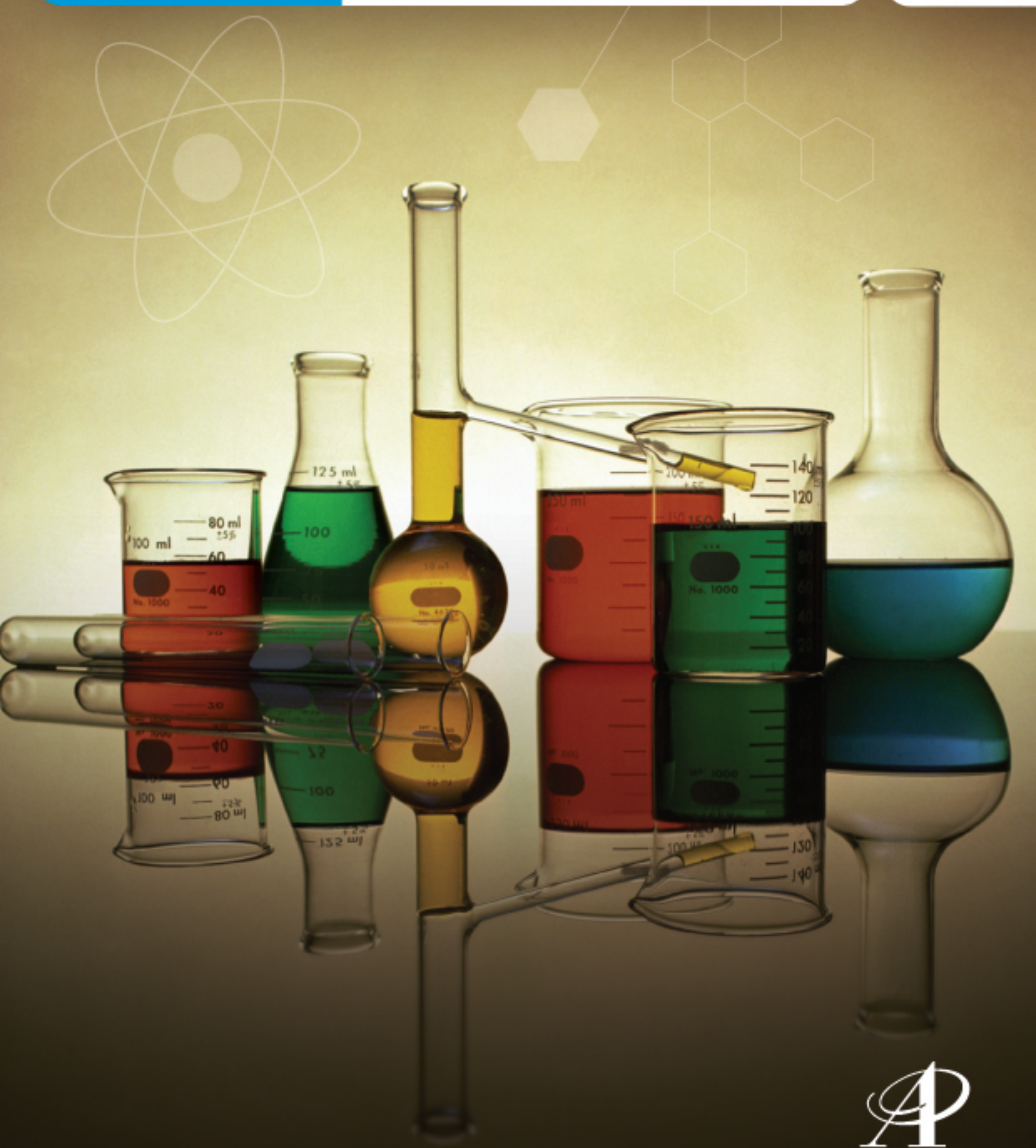




LIFE·PAC<sup>®</sup>

Science



Alpha Omega Publications<sup>®</sup>

# SCIENCE 502 PLANTS: LIFE CYCLES

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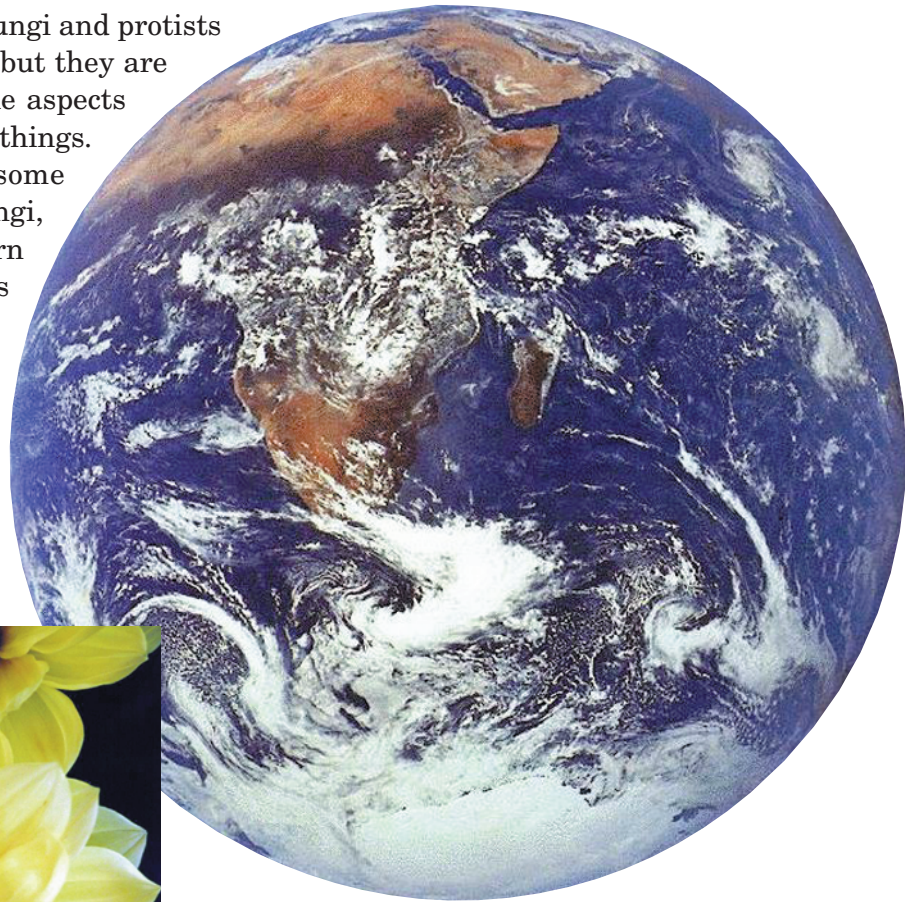
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## INTRODUCTION

Plants are among the living things that God has created upon the earth. In the Book of Genesis, we read: “And God said, Let the earth bring forth grass, the herb yielding seed, and the fruit tree yielding fruit after his kind, whose seed is in itself, upon the earth: and it was so. And the earth brought forth grass, and herb yielding seed after his kind, and the tree yielding fruit, whose seed was in itself, after his kind: and God saw that it was good.” (Genesis 1:11-12). All of these living things are the part of God’s creation called plants.

In this LIFE PAC® you will learn about various kinds of plants, fungi, and protists. Fungi and protists have some similarity to plants, but they are also different. You will examine aspects of the life cycles of these living things. You will learn about some differences among plants, fungi, and protists.. You will also learn about their common structures of and the ways they reproduce. Finally, you will have an opportunity to observe some of these living things close-up during experiments!



## OBJECTIVES

**Read these objectives.** These objectives tell what you should be able to do when you have completed this LIFEPAAC.

When you have finished this LIFEPAAC, you should be able to:

1. Classify all living things into one of five kingdoms.
2. Identify the main kinds and parts of plants.
3. Describe the life cycles of plants, fungi, and some protists.
4. Identify the main reproductive parts of seed-bearing and spore-bearing organisms.
5. Classify plants, fungi, and protists you observe.
6. Explain differences between the main categories of plants, fungi, and protists.
7. Relate the structure of plants, fungi, and protists with their reproduction in a life cycle.

## VOCABULARY

**Study these words.** Learning the meaning of these words and their pronunciations will help you read and understand this LIFEPAAC better.

**absorbs** (ab sôrbz'). A body takes some liquid into itself by osmosis and holds it in.

**adulthood** (ə dult' hüd). The time of life when an organism is grown up enough to reproduce.

**algae** (al' jē). A group of water plants. Some have many cells. Others have one cell.

**angiosperms** (an' jē ō spurmz). A name given to flowering plants.

**anther** (an' thər). The part of a plant where pollen is made.

**botany** (bot' n ē). The study of plants.

**delicate** (del' ə kit). Easily hurt or broken.

**digestion** (də jes' chən). The act of changing food into a form that cells use for energy.

**embryo** (em' brē ō). The little plant inside a seed.

**exposed** (ek spōzd'). Uncovered or opened up.

**fertilization** (fēr' tl ə zā' shən). When a sperm cell joins an egg cell, a new life is started.

**filament** (fil' ə mənt). One of the male parts of a flowering plant that connects to the anther.

**fungi** (fun' jī). One of the five main kingdoms of living things. They do not produce chlorophyll.

**gymnosperms** (jim' nuh spurmz). A name given to nonflowering plants that produce seeds. They are cone-bearers.

**hyphae** (hi' fe). Plural of *hypha*. The thread-like bodies of certain fungi.

**monerans** (mo ner' uns). Very tiny and simple organisms that are one of the five main kingdoms of living things.

**offspring** (ôf' spring). The result of reproduction. A new organism that will grow up to be similar to the parent.

**ovary** (ô' vər ē). The part of the plant that makes and holds the egg cells.

**petal** (pet' l). The brightly colored part of the flower that is easiest to see.

**pistil** (pis' tl). The part of a flower where seeds form and that is made up of the ovary, style, and stigma.

**pollen** (pol' ən). Grains of dusty powder formed by flowers to carry sperm cells.

**protists** (prō' tists). One of the five main categories of living things. They are tiny organisms.

**sacs** (saks). Plural of *sac*. Little bags on certain plant parts that hold something.

**sperm** (spèrm). The male cell that must join the female cell to begin new life.

**spores** (spôrz). Plural of *spore*. Spores are tiny, specialized structures that are able to grow into a new organism. Spores help an organism survive and move from place to place.

**stamen** (stā' mən). The part of the flower where pollen is stored. It is made up of the anther and the filament.

**stigma** (stig' mə). The part of the flower that takes in pollen.

**style** (stīl). The tube that connects the stigma to the ovary.

**vegetative** (vej' ə tā' tiv). The parts of a flowering plant that include the roots, stems, and leaves. It is also another form of reproduction of some plants.

**yeast** (yēst). A single-celled fungi.

**Note:** These words appear in **boldface** print the first time they are used in this LIFEPAC. If you are unsure of the meaning when you are reading, restudy the definition given in this LIFEPAC.

**Pronunciation Key:** hat, āge, cāre, fār; let, ēqual, tērm; it, īce; hot, ōpen, ôrder; oil; out; cup, pūt, rüle; child; long; thin; /Th/ for then; /zh/ for measure; /ə/ represents /a/ in about, /e/ in taken, /i/ in pencil /o/ in lemon, and /u/ in circus.

# I. CLASSIFYING LIVING THINGS AND PLANTS

## INTRODUCTION

God has created a great variety of living things on the earth. God has placed these living things throughout the earth in all regions and environments. Many scientists today classify all living things into five main groups. These five groups are sometimes called *kingdoms*. The five kingdoms of living things are (1) animals, (2) plants, (3) **fungi**, (4) **protists**, and (5) **monerans**.

These living things are classified within one of these five kingdoms because they share certain basic characteristics. There are several characteristics that scientists consider when

classifying living things. Some of these basic characteristics include the physical structure and make-up, the means of obtaining food, and the means of reproduction. For example, protists and monerans are simple, tiny organisms made up of one cell or only a few types of cells, while plants and animals are complex organisms made up of many types of cells. Fungi can be simple, one-celled organisms, or they may be more complex. But all fungi are organisms that lack chlorophyll, the green coloring that many plants use to make food and oxygen. Therefore, fungi must obtain their food from outside sources. The following table shows some characteristics and examples of living things within each of the five kingdoms.

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**Review these objectives.** When you have completed this section, you should be able to:

1. Classify all living things into one of five kingdoms.
2. Identify the main kinds and parts of plants.
3. Describe the life cycles of plants, fungi, and some protists.
4. Explain differences between the main categories of plants, fungi, and protists.

**Restudy these words.** They will appear for the first time in Section I of this LIFEPAK.

adulthood	algae	botany
fungi	monerans	protists
spores	vegetative	yeast

---

**TABLE I. Classifying Living Things**

Kingdom	Cell Type	Food	Examples
Animals	multicellular	obtain from outside sources	worms, insects, fish, birds, mammals
Plants	multicellular	produce their own	moss, trees, flowering plants
Fungi	unicellular or multicellular	obtain from outside sources	mushrooms, <b>yeast</b> , molds
Protists	unicellular or multicellular	produce their own and obtains from outside sources	protozoa, paramecium, green <b>algae</b> , red algae
Monerans	unicellular or multicellular	engulfed from outside sources	bacteria, blue-green algae