AIMS Multimedia is a leading producer and distributor of educational programs serving schools and libraries for nearly 40 years. AIMS draws upon the most up-to-date knowledge, existing and emerging technologies, and all of the instructional and pedagogical resources available to develop and distribute educational programs in film, videocassette, laserdisc, CD-ROM and CD-i formats.

Persons or schools interested in obtaining additional copies of this AIMS Teaching Module, please contact:

AIMS Multimedia

1-800-FOR-AIMS
1-800-367-2467
Congratulations!

You have chosen a learning program that will actively motivate your students AND provide you with easily accessible and easily manageable instructional guidelines designed to make your teaching role efficient and rewarding.

The AIMS Teaching Module provides you with a video program keyed to your classroom curriculum, instructions and guidelines for use, plus a comprehensive teaching program containing a wide range of activities and ideas for interaction between all content areas. Our authors, educators, and consultants have written and reviewed the AIMS Teaching Modules to align with the Educate America Act: Goals 2000.

This ATM, with its clear definition of manageability, both in the classroom and beyond, allows you to tailor specific activities to meet all of your classroom needs.
RATIONALE

In today’s classrooms, educational pedagogy is often founded on Benjamin S. Bloom’s “Six Levels of Cognitive Complexity.” The practical application of Bloom’s Taxonomy is to evaluate students’ thinking skills on these levels, from the simple to the complex: Knowledge (rote memory skills), Comprehension (the ability to relate or retell), Application (the ability to apply knowledge outside its origin), Analysis (relating and differentiating parts of a whole), Synthesis (relating parts to a whole), and Evaluation (making a judgment or formulating an opinion).

The AIMS Teaching Module is designed to facilitate these intellectual capabilities, AND to integrate classroom experiences and assimilation of learning with the students' life experiences, realities, and expectations. AIMS’ learner verification studies prove that our AIMS Teaching Modules help students to absorb, retain, and to demonstrate ability to use new knowledge in their world. Our educational materials are written and designed for today’s classroom, which incorporates a wide range of intellectual, cultural, physical, and emotional diversities.
ORGANIZATION AND MANAGEMENT

To facilitate ease in classroom manageability, the AIMS Teaching Module is organized in four sections. You are reading Section 1, Introduction to the Aims Teaching Module (ATM).

SECTION 2, INTRODUCING THIS ATM will give you the specific information you need to integrate the program into your classroom curriculum.

SECTION 3, PREPARATION FOR VIEWING provides suggestions and strategies for motivation, language preparedness, readiness, and focus prior to viewing the program with your students.

SECTION 4, AFTER VIEWING THE PROGRAM provides suggestions for additional activities plus an assortment of consumable assessment and extended activities, designed to broaden comprehension of the topic and to make connections to other curriculum content areas.
FEATURES

INTRODUCING EACH ATM

SECTION 2

Your AIMS Teaching Module is designed to accompany a video program written and produced by some of the world’s most credible and creative writers and producers of educational programming. To facilitate diversity and flexibility in your classroom, your AIMS Teaching Module features these components:

Themes

The Major Theme tells how this AIMS Teaching Module is keyed into the curriculum. Related Themes offer suggestions for interaction with other curriculum content areas, enabling teachers to use the teaching module to incorporate the topic into a variety of learning areas.

Overview

The Overview provides a synopsis of content covered in the video program. Its purpose is to give you a summary of the subject matter and to enhance your introductory preparation.

Objectives

The ATM learning objectives provide guidelines for teachers to assess what learners can be expected to gain from each program. After completion of the AIMS Teaching Module, your students will be able to demonstrate dynamic and applied comprehension of the topic.
PREPARATION FOR VIEWING

SECTION 3
In preparation for viewing the video program, the AIMS Teaching Module offers activity and/or discussion ideas that you may use in any order or combination.

Introduction To The Program
Introduction to the Program is designed to enable students to recall or relate prior knowledge about the topic and to prepare them for what they are about to learn.

Introduction To Vocabulary
Introduction to Vocabulary is a review of language used in the program: words, phrases, usage. This vocabulary introduction is designed to ensure that all learners, including limited English proficiency learners, will have full understanding of the language usage in the content of the program.

Discussion Ideas
Discussion Ideas are designed to help you assess students' prior knowledge about the topic and to give students a preview of what they will learn. Active discussion stimulates interest in a subject and can motivate even the most reluctant learner. Listening, as well as speaking, is active participation. Encourage your students to participate at the rate they feel comfortable. Model sharing personal experiences when applicable, and model listening to students' ideas and opinions.

Focus
Help learners set a purpose for watching the program with Focus, designed to give students a focal point for comprehension continuity.

Jump Right In
Jump Right In provides abbreviated instructions for quick management of the program.

AFTER VIEWING THE PROGRAM

SECTION 4
After your students have viewed the program, you may introduce any or all of these activities to interact with other curriculum content areas, provide reinforcement, assess comprehension skills, or provide hands-on and in-depth extended study of the topic.
SUGGESTED ACTIVITIES

The Suggested Activities offer ideas for activities you can direct in the classroom or have your students complete independently, in pairs, or in small work groups after they have viewed the program. To accommodate your range of classroom needs, the activities are organized into skills categories. Their labels will tell you how to identify each activity and help you correlate it into your classroom curriculum. To help you schedule your classroom lesson time, the AIMS hourglass gives you an estimate of the time each activity should require. Some of the activities fall into these categories:

Meeting Individual Needs

These activities are designed to aid in classroom continuity. Reluctant learners and learners acquiring English will benefit from these activities geared to enhance comprehension of language in order to fully grasp content meaning.

Curriculum Connections

Many of the suggested activities are intended to integrate the content of the ATM program into other content areas of the classroom curriculum. These cross-connections turn the classroom teaching experience into a whole learning experience.

Critical Thinking

Critical Thinking activities are designed to stimulate learners' own opinions and ideas. These activities require students to use the thinking process to discern fact from opinion, consider their own problems and formulate possible solutions, draw conclusions, discuss cause and effect, or combine what they already know with what they have learned to make inferences.

Cultural Diversity

Each AIMS Teaching Module has an activity called Cultural Awareness, Cultural Diversity, or Cultural Exchange that encourages students to share their backgrounds, cultures, heritage, or knowledge of other countries, customs, and language.

Hands On

These are experimental or tactile activities that relate directly to the material taught in the program. Your students will have opportunities to make discoveries and formulate ideas on their own, based on what they learn in this unit.

Writing

Every AIMS Teaching Module will contain an activity designed for students to use the writing process to express their ideas about what they have learned. The writing activity may also help them to make the connection between what they are learning in this unit and how it applies to other content areas.

In The Newsroom

Each AIMS Teaching Module contains a newsroom activity designed to help students make the relationship between what they learn in the classroom and how it applies in their world. The purpose of In The Newsroom is to actively involve each class member in a whole learning experience. Each student will have an opportunity to perform all of the tasks involved in production: writing, researching, producing, directing, and interviewing as they create their own classroom news program.

Extended Activities

These activities provide opportunities for students to work separately or together to conduct further research, explore answers to their own questions, or apply what they have learned to other media or content areas.

Link to the World

These activities offer ideas for connecting learners' classroom activities to their community and the rest of the world.

Culminating Activity

To wrap up the unit, AIMS Teaching Modules offer suggestions for ways to reinforce what students have learned and how they can use their new knowledge to enhance their world view.
**VOCABULARY**

Every ATM contains an activity that reinforces the meaning and usage of the vocabulary words introduced in the program content. Students will either read or find the definition of each vocabulary word, then use the word in a written sentence.

**CHECKING COMPREHENSION**

Checking Comprehension is designed to help you evaluate how well your students understand, retain, and recall the information presented in the AIMS Teaching Module. Depending on your students’ needs, you may direct this activity to the whole group yourself, or you may want to have students work on the activity page independently, in pairs, or in small groups. Students can verify their written answers through discussion or by viewing the video a second time. If you choose, you can reproduce the answers from your Answer Key or write the answer choices in a Word Bank for students to use. Students can use this completed activity as a study guide to prepare for the test.

**CONSUMABLE ACTIVITIES**

The AIMS Teaching Module provides a selection of consumable activities, designed to specifically reinforce the content of this learning unit. Whenever applicable, they are arranged in order from low to high difficulty level, to allow a seamless facilitation of the learning process. You may choose to have students take these activities home or to work on them in the classroom independently, in pairs or in small groups.

**CHECKING VOCABULARY**

The Checking Vocabulary activity provides the opportunity for students to assess their knowledge of new vocabulary with this word game or puzzle. The format of this vocabulary activity allows students to use the related words and phrases in a different context.

**TEST**

The AIMS Teaching Module Test permits you to assess students’ understanding of what they have learned. The test is formatted in one of several standard test formats to give your students a range of experiences in test-taking techniques. Be sure to read, or remind students to read, the directions carefully and to read each answer choice before making a selection. Use the Answer Key to check their answers.
ADDITIONAL AIMS MULTIMEDIA PROGRAMS

After you have completed this AIMS Teaching Module you may be interested in more of the programs that AIMS offers. This list includes several related AIMS programs.

ADDITIONAL READING SUGGESTIONS

AIMS offers a carefully researched list of other resources that you and your students may find rewarding.

ANSWER KEY

Reproduces tests and work pages with answers marked.
THEMES

In Classification: Bringing Order to Diversity, students will study each of the major kingdoms which classify organisms: Monera, Protista, Fungi, Plantae and Animalia. Characteristics of each kingdom will be discussed, as well as factors which determine the subdivision of each kingdom. The interrelation of certain groups will also be explored.

OVERVIEW

There are currently two to four and one-half million species of organisms on the earth, a high percentage of which live in or around tropical rain forests. Through fossil records, scientists have also discovered thousands of forms of life that lived long ago but no longer exist. The millions of species of living organisms are broken down into seven major categories: kingdom, phylum, class, order, family, genus and species.

OBJECTIVES

- To learn the five major kingdoms of organisms and how they are classified.
- To explore the characteristics of each kingdom and its primary phylums.
- To discuss the factors that determine how plants are classified.
- To learn the difference between vertebrates, such as amphibians and reptiles.
- To better understand how each kingdom relates to members of other kingdoms.
Use this page for your individual notes about planning and/or effective ways to manage this AIMS Teaching Module in your classroom.

Our AIMS Multimedia Educational Department welcomes your observations and comments.
Please feel free to address your correspondence to:

AIMS Multimedia
Editorial Department
9710 DeSoto Avenue
Chatsworth, California 91311-4409
INTRODUCTION TO THE PROGRAM

Organisms are classified according to many different factors. They may share a body part, color, size or shape. They may have a specific feature in common, such as sharp teeth, busy tails or the ability to climb trees. Kingdom is the broadest category of classification. Phylum is the second largest category, dividing animals into more than 20 groups and plants into 10. Class, the next level of organization, contains members with more characteristics in common than the members of a phylum. Order, family, genus and species further divide the members of a class.

INTRODUCTION TO VOCABULARY

Many names used for classification provide clues about the organisms they describe. For instance, Class Osteichthyes refers to bony fish. The prefix Oste- is often used in words referring to bones or the skeleton. Ask students to search through encyclopedias and library books to find other examples of classification names that have common prefixes, suffixes and root words. Encourage them to share the examples they find.

DISCUSSION IDEAS

Ask the class to name as many groups of organisms as they can. Encourage discussion and accept all answers. Write the groups on the board, along with some common examples that students can name. How do these groups relate? Do any of the organisms mentioned seem like they are in the wrong group? Classifying organisms can be a confusing business. To organize such a large variety of living things, scientists often look at the structure of an organism, how it gets food and how it moves around. Review the answers given after covering the unit. How has the students’ understanding of classification changed?

FOCUS

Ask students to spend a few minutes thinking about the huge variety of organisms that fill the earth. How would scientists ever study the millions of living things around us if they could not organize them in some way? Tell the class they are about to learn more about the process of classification and its importance in many fields of scientific study.
JUMP RIGHT IN

HOW TO USE THE CLASSIFICATION: BRINGING ORDER TO DIVERSITY AIMS TEACHING MODULE

Preparation

› Read Classification: Bringing Order to Diversity Themes, Overview, and Objectives to become familiar with program content and expectations.

› Use Preparation for Viewing suggestions to introduce the topic to students.

Viewing CLASSIFICATION: BRINGING ORDER TO DIVERSITY

› Set up viewing monitor so that all students have a clear view.

› Depending on your classroom size and learning range, you may choose to have students view Classification: Bringing Order to Diversity together or in small groups.

› Some students may benefit from viewing the video more than one time.

After Viewing CLASSIFICATION: BRINGING ORDER TO DIVERSITY

› Select Suggested Activities that integrate into your classroom curriculum. If applicable, gather materials or resources.

› Choose the best way for students to work on each activity. Some activities work best for the whole group. Other activities are designed for students to work independently, in pairs, or in small groups. Whenever possible, encourage students to share their work with the rest of the group.

› Duplicate the appropriate number of Vocabulary, Checking Comprehension, and consumable activity pages for your students.

› You may choose to have students take consumable activities home, or complete them in the classroom, independently, or in groups.

› Administer the Test to assess students’ comprehension of what they have learned, and to provide them with practice in test-taking procedures.

› Use the Culminating Activity as a forum for students to display, summarize, extend, or share what they have learned with each other, the rest of the school, or a local community organization.
SUGGESTED ACTIVITIES

Extended Activity

Ask students to choose one of the following classes of vertebrates: amphibians, reptiles, birds or mammals. Have them research their chosen topic using the internet. Encourage them to find websites with pictures and interesting facts.

What were the best websites they found? What new information did they learn about the topic? If they designed their own websites dealing with these topics, what information or images would they include?

Critical Thinking

Mammals are an incredibly diverse class with thousands of different species. Many of these species have made special adaptations to their environment over the years. Ask students to think carefully about the following mammalian adaptations and their functions: giraffe’s neck (allows giraffe to reach tall leaves), camel’s hump (helps camel store water in a dry environment), squirrel monkey’s tail (helps monkey balance as he walks on tree branches searching for food), porcupine’s quills (punctures predators who attack the porcupine), and tiger’s stripes (help tiger blend in with tall grass so prey can’t see him approaching). Then discuss why they think the adaptations occurred.

Hands On

Ask students to collect small branches from several different trees near their homes. Have them bring these branches to class in plastic bags. Which of the branches are angiosperms and which are gymnosperms? Do any of the branches have cones or wing-like seeds? Do they have buds or flowers? Ask students to use a library book or other reference source to name the tree that each branch came from.

Connection to Art

Have students select one of their branches from the previous experiment. Ask them to draw the branch in detail using colored pencils. If the branch is a gymnosperm, ask them to label any cones or seeds that are present. If the branch is an angiosperm, ask them to label any flower parts that can be seen, such as the stamen, ovule or pistil. Display the branch drawings on a wall labeled, “Vascular Seed Plants.”
Link to the World

How many examples of the major kingdoms can students find in their community? Ask them to make a chart listing the following kingdoms: Monera, Protista, Fungi, Plantae and Animalia. Beneath each kingdom, tell them to list the organisms they have seen in and around their hometown. Encourage them to spend a weekend afternoon exploring a natural outdoor region. Assigning cooperative partners to work together is a good way to generate interest in the “outdoor expeditions.”

Connection to Language Arts

More than one million species of insects have been identified, making Class Insecta the largest known. As a result, insects are broken into many orders, some of which have interesting names providing clues about the members of that order. Ask students to use their vocabulary skills, along with prefix and suffix clues, to find the meanings of the following orders: Diptera (two wings), Hemiptera (half wings), Phasmatodea (“like a ghost,” insects that use disguise for protection), Odonata (toothed flies), and Dermaptera (leathery or skin-like wings).

Meeting Individual Needs

Ask students to look up “amphibian” and “reptile” in an encyclopedia. What do these classes of animal have in common? How are they different? (Amphibians, such as frogs and toads, have no scales like reptiles. They breathe through their skin, while reptiles breathe through their nostrils. Most amphibians must live near water, where they usually lay their eggs. Reptiles on the other hand, have scaly skin that holds moisture, allowing reptiles to live in very dry environments.)

Cultural Diversity

The environment we live in greatly determines the organisms living close to us. Allow each student to spin a globe with their eyes closed. Have them stop the globe and place their finger on a specific location, without opening their eyes. (If they land on water or an extreme polar region, have them try again.) Ask them to learn more about the climate of the area they have pointed to. What kinds of plants, animals and fungi live there? Have them summarize their findings in a one-page report.

In the Newsroom

Every day, we can read about current issues affecting the earth’s organisms. Coral reefs are endangered by warming oceans. Trees are destroyed by ice storms or hurricanes. Bacteria are discovered to have amazing medical uses. Animals are threatened by humankind’s careless behavior.
Ask students to search newspapers and magazines for stories that relate to non-human organisms. Have them present their articles to the class, explaining the kingdom, phylum and class of the organism discussed. If possible, have students use audio or video equipment to create a news show focusing on their stories.

**Culminating Activity**

Ask students to choose an organism from any of the five major kingdoms. Ask them to explain the organism to their classmates using actions and sounds, but no words. As the students guess each organism, ask them to name the organism’s kingdom, phylum and class. Encourage students to choose diverse organisms, from single-celled bacteria to growing trees to monkeys.
### VOCABULARY

The following vocabulary words are from Classification: Bringing Order to Diversity. Fill in the number of each word next to its closest definition.

<table>
<thead>
<tr>
<th>Number</th>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Animalia</td>
<td>the broadest division of organisms</td>
</tr>
<tr>
<td>2</td>
<td>bacteria</td>
<td>cells that have a well-defined nucleus and other structures</td>
</tr>
<tr>
<td>3</td>
<td>dicot</td>
<td>single-celled organisms that depend on matter or other living things for food</td>
</tr>
<tr>
<td>4</td>
<td>eukaryotes</td>
<td>kingdom containing a large diversity of species, from sponges to human beings</td>
</tr>
<tr>
<td>5</td>
<td>Fungi</td>
<td>plant with two seed leaves and oval or complex symmetrical leaves</td>
</tr>
<tr>
<td>6</td>
<td>invertebrates</td>
<td>plant with one seed leaf and long, narrow strap-like leaves</td>
</tr>
<tr>
<td>7</td>
<td>kingdom</td>
<td>kingdom containing plant-like organisms that cannot make their own food</td>
</tr>
<tr>
<td>8</td>
<td>Monera</td>
<td>fairly primitive animals with no backbone or interior skeleton</td>
</tr>
<tr>
<td>9</td>
<td>monocot</td>
<td>fairly complex animals with backbones and interior skeletons</td>
</tr>
<tr>
<td>10</td>
<td>nonvascular</td>
<td>kingdom consisting mostly of blue-green algae and bacteria</td>
</tr>
<tr>
<td>11</td>
<td>Plantae</td>
<td>plants without food-and-water-conducting tissues</td>
</tr>
<tr>
<td>12</td>
<td>Porifera</td>
<td>plants that have roots, stems and leaves which transport food and water</td>
</tr>
<tr>
<td>13</td>
<td>Protista</td>
<td>kingdom of organisms that produce food through photosynthesis</td>
</tr>
<tr>
<td>14</td>
<td>vascular</td>
<td>phylum of primitive animals whose bodies are perforated with many holes</td>
</tr>
<tr>
<td>15</td>
<td>vertebrates</td>
<td>kingdom of complex single-celled organisms such as diatoms and Euglena</td>
</tr>
</tbody>
</table>
CHECKING COMPREHENSION

Read the following sentences and circle the letters of the words that best fill each blank.

The earth's millions of species are broken down into categories, the broadest of which is the ___1_____. Monera and Protista are comprised entirely of ___2_____ organisms such as the amoeba. The most prevalent Monerans are blue-green algae and ___3_____. Protists, such as the ___4_____, are more complex and usually move around on their own. Members of the Kingdom ___5_____ are plant-like organisms that contain no chlorophyll. Plants are organisms that produce food through ___6_____. Their cells are eukaryotic and have ___7_____. Plants which flower are known as ___8_____. Invertebrates include the phylum ___9_____, which are organisms with hard exoskeletons, jointed legs and segmented bodies. Vertebrates include ___10_____, animals that can live both in and out of water.

1. A. phylum  
   B. kingdom  
   C. family  
   D. class  

2. A. harmful  
   B. prokaryotic  
   C. single-celled  
   D. photosynthetic  

3. A. bacteria  
   B. diatoms  
   C. fungi  
   D. euglenoids  

4. A. flagella  
   B. paramecium  
   C. penicillium  
   D. flea  

5. A. Plantae  
   B. Algae  
   C. Fungi  
   D. Lichen
CHECKING COMPREHENSION - part 2

6. A. phagocytosis
   B. pollenation
   C. photosynthesis
   D. symbiosis

7. A. gametophytes
   B. cilia
   C. cones
   D. chloroplasts

8. A. angiosperms
   B. non-vascular
   C. gymnosperms
   D. lichens

9. A. Hemichordata
   B. Arthropoda
   C. Coelenterata
   D. Mollusca

10. A. bony fish
    B. octopi
    C. amphibians
    D. reptiles
CLASSIFICATION CHART

Fill in the chart below by listing an organism in each class.

<table>
<thead>
<tr>
<th>Monera</th>
<th>Protista</th>
<th>Fungi</th>
<th>Plantae</th>
<th>Animalia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Non-Vascular and Vascular</td>
<td>Coelenterata, Arthropoda, Amphibia, Reptilia, Aves and Mammalia</td>
</tr>
</tbody>
</table>
CLASS MATCH-UP

Match each term on the left with the best group of words on the right.

1. arthropods  • plant with no food-conducting tissues
2. Coelenterata  • cells with a nucleus
3. eukaryotes  • complex single-celled organisms
4. fungus  • penicillium is one type
5. mammals  • plant with roots, stems and leaves
6. non-vascular  • coral, sea anemones and jelly fish
7. protists  • insects and spiders
8. vascular  • warm-blooded organisms with hair or fur
TRUE OR FALSE

Place a T beside each true statement and an F beside each false statement.

1. The cell of a moneran has no distinct nucleus, but does contain DNA.______
2. Some protists make food using chlorophyll, while others must capture their food.______
3. Lichen is formed by a symbiotic relationship between fungi and animals.______
4. Plants with fungi on their roots cannot get enough nutrients and will usually die.______
5. Vascular plants have roots, stems and leaves for transporting food and water.______
6. Dicots have long, strap-like leaves and broad, fibrous root systems.______
7. Arthropoda is the most diverse phylum, totaling three-fourths of all animal species.______
8. Amphibians have a three-chambered heart and gills that develop into lungs.______
9. Birds and insects are the only animals that can fly efficiently.______
10. Birds have hollow skeletal bones to reduce their weight.______
NAME THAT KINGDOM

Next to each phrase below, write the name of the kingdom that is being described.

1. ______________________     includes Porifera and Mollusca
2. ______________________     blue-green algae is one division
3. ______________________     some species are used to make cheese and bread
4. ______________________     paramecium and amoebas are two species
5. ______________________     has more species than any other kingdom
6. ______________________     includes monocots and dicots
7. ______________________     includes both helpful and harmful bacteria
8. ______________________     mosses are one of the most primitive species
9. ______________________     mushrooms are one tasty species
10. ______________________    many species have flagella or cilia
VOCAB SEARCH

The following words can be found in the maze below. The letters may be arranged horizontally, vertically, diagonally or backwards.

bacteria  monocot

dicot  Plantae

Fungi  Porifera

kingdom  protist

mammal  reptile

Monera  vascular

D M M H D M T L L D R
K I N G D O M V B F Q
B A C T E R I A C A B
S B F O G E S S C T E
P K C M T P F C L O P
Q L R A B T I U M O R
L H A Q G I D L N E O
A L L N K L J A N G T
M G C D T E P R J P I
M O N E R A E M Q K S
A P O R I F E R A Z T
M V A W T O C O N O M
Fill in the bubble for the phrase which best answers the question.

1. Most methods of classification divide organisms into ___________ kingdoms.
   - ten
   - five
   - eight
   - seven

2. Which kingdoms consist of single-celled organisms?
   - Fungi, Monera and Protista
   - Protista and Fungi
   - Monera and Protista
   - Fungi, Plantae and Protista

3. The first organism on earth was probably:
   - a euglenoid.
   - penicillium.
   - blue-green algae.
   - an angiosperm.

4. Most protists are classified according to their:
   - cell composition.
   - reproductive structures.
   - means of locomotion.
   - surrounding environment.

5. Plant-like organisms that contain no chlorophyll are members of the:
   - Kingdom Fungi.
   - Kingdom Plantae.
   - Kingdom Monera.
   - Kingdom Protista.
6. Gymnosperms and angiosperms are two basic types of:
   non-vascular plants.
   fungi.
   seed plants.
   bacteria.

7. Which kingdom has more species than any other?
   Monera
   Protista
   Animalia
   Plantae

8. Which of the following is NOT an invertebrate?
   sponge
   coral
   snake
   lobster

9. Which of the following is NOT a vertebrate?
   Class Reptilia
   Phylum Arthropoda
   Class Aves
   Class Amphibia

10. What are the five major kingdoms of organisms?
    Reptilia, Aves, Mammalia, Amphibia, Coelenterata
    Monocotyledon, Dicotyledon, Vertebrate, Nonvertebrate, Protista
    Monera, Protista, Fungi, Plantae, Animalia
    Plantae, Animalia, Fungi, Coelenterata, Porifera
VOCABULARY

The following vocabulary words are from Classification: Bringing Order to Diversity. Fill in the number of each word next to its closest definition.

1. Animalia
2. bacteria
3. dicot
4. eukaryotes
5. Fungi
6. invertebrates
7. kingdom
8. Monera
9. monocot
10. nonvascular
11. Plantae
12. Porifera
13. Protista
14. vascular
15. vertebrates

(7) the broadest division of organisms
(4) cells that have a well-defined nucleus and other structures
(2) single-celled organisms that depend on matter or other living things for food
(1) kingdom containing a large diversity of species, from sponges to human beings
(3) plant with two seed leaves and oval or complex symmetrical leaves
(9) plant with one seed leaf and long, narrow strap-like leaves
(5) kingdom containing plant-like organisms that cannot make their own food
(6) fairly primitive animals with no backbone or interior skeleton
(15) fairly complex animals with backbones and interior skeletons
(8) kingdom consisting mostly of blue-green algae and bacteria
(10) plants without food-and-water-conducting tissues
(14) plants that have roots, stems and leaves which transport food and water
(11) kingdom of organisms that produce food through photosynthesis
(12) phylum of primitive animals whose bodies are perforated with many holes
(13) kingdom of complex single-celled organisms such as diatoms and Euglena
CHECKING COMPREHENSION

Read the following sentences and circle the letters of the words that best fill each blank.

The earth’s millions of species are broken down into categories, the broadest of which is the _____ 1 ___. Monera and Protista are comprised entirely of _____ 2 _____ organisms such as the amoeba. The most prevalent Monerans are blue-green algae and _____ 3 ____. Protists, such as the _____ 4 ____, are more complex and usually move around on their own. Members of the Kingdom _____ 5 _____ are plant-like organisms that contain no chlorophyll. Plants are organisms that produce food through _____ 6 ____. Their cells are eukaryotic and have _____ 7 ____. Plants which flower are known as _____ 8 ____. Invertebrates include the phylum _____ 9 ____, which are organisms with hard exoskeletons, jointed legs and segmented bodies. Vertebrates include _____ 10 ____, animals that can live both in and out of water.

1. A. phylum
   B. kingdom (X)
   C. family
   D. class

2. A. harmful
   B. prokaryotic
   C. single-celled (X)
   D. photosynthetic

3. A. bacteria (X)
   B. diatoms
   C. fungi
   D. euglenoids

4. A. flagella
   B. paramecium (X)
   C. penicillium
   D. flea

5. A. Plantae
   B. Algae
   C. Fungi (X)
   D. Lichen
CHECKING COMPREHENSION - part 2

6. A. phagocytosis  
   B. pollination  
   C. photosynthesis (X)  
   D. symbiosis

7. A. gametophytes  
   B. cilia  
   C. cones  
   D. chloroplasts (X)

8. A. angiosperms (X)  
   B. non-vascular  
   C. gymnosperms  
   D. lichens

9. A. Hemichordata  
   B. Arthropoda (X)  
   C. Coelenterata  
   D. Mollusca

10. A. bony fish  
    B. octopi  
    C. amphibians (X)  
    D. reptiles
**CLASSIFICATION CHART**

*Fill in the chart below by listing an organism in each class.*

<table>
<thead>
<tr>
<th>Monera</th>
<th>Protista</th>
<th>Fungi</th>
<th>Plantae</th>
<th>Animalia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Non-Vascular and Vascular</strong></td>
<td>Coelenterata, Arthropoda, Amphibia, Reptilia, Aves and Mammalia</td>
</tr>
</tbody>
</table>

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CLASS MATCH-UP

Match each term on the left with the best group of words on the right.

1. arthropods
2. Coelenterata
3. eukaryotes
4. fungus
5. mammals
6. non-vascular
7. protists
8. vascular

- plant with no food-conducting tissues  \(\text{(non-vascular)}\)
- cells with a nucleus  \(\text{(eukaryotes)}\)
- complex single-celled organisms  \(\text{(protists)}\)
- penicillium is one type  \(\text{(fungus)}\)
- plant with roots, stems and leaves  \(\text{(vascular)}\)
- coral, sea anemones and jelly fish  \(\text{(Coelenterata)}\)
- insects and spiders  \(\text{(arthropods)}\)
- warm-blooded organisms with hair or fur  \(\text{(mammals)}\)
TRUE OR FALSE

Place a T beside each true statement and an F beside each false statement.

1. The cell of a moneran has no distinct nucleus, but does contain DNA. ____(T)____
2. Some protists make food using chlorophyll, while others must capture their food. ____(T)____
3. Lichen is formed by a symbiotic relationship between fungi and animals. ____(F)____
4. Plants with fungi on their roots cannot get enough nutrients and will usually die. ____(F)____
5. Vascular plants have roots, stems and leaves for transporting food and water. ____(T)____
6. Dicots have long, strap-like leaves and broad, fibrous root systems. ____(F)____
7. Arthropoda is the most diverse phylum, totaling three-fourths of all animal species. ____(T)____
8. Amphibians have a three-chambered heart and gills that develop into lungs. ____(T)____
9. Birds and insects are the only animals that can fly efficiently. ____(F)____
10. Birds have hollow skeletal bones to reduce their weight. ____(T)____
### NAME THAT KINGDOM

Next to each phrase below, write the name of the kingdom that is being described.

1. *(Animalia)* includes Porifera and Mollusca
2. *(Monera)* blue-green algae is one division
3. *(Fungi)* some species are used to make cheese and bread
4. *(Protista)* paramecium and amoebas are two species
5. *(Animalia)* has more species than any other kingdom
6. *(Plantae)* includes monocots and dicots
7. *(Monera)* includes both helpful and harmful bacteria
8. *(Plantae)* mosses are one of the most primitive species
9. *(Fungi)* mushrooms are one tasty species
10. *(Protista)* many species have flagella or cilia
VOCAB SEARCH

The following words can be found in the maze below. The letters may be arranged horizontally, vertically, diagonally or backwards.

- bacteria
- monocot
- dicot
- Plantae
- Fungi
- Porifera
- kingdom
- protist
- mammal
- reptile
- Monera
- vascular
TEST

Fill in the bubble for the phrase which best answers the question.

1. Most methods of classification divide organisms into ________ kingdoms.
   - ten
   - five (X)
   - eight
   - seven

2. Which kingdoms consist of single-celled organisms?
   - Fungi, Monera and Protista (X)
   - Protista and Fungi
   - Monera and Protista
   - Fungi, Plantae and Protista

3. The first organism on earth was probably:
   - a euglenoid.
   - penicillium.
   - blue-green algae. (X)
   - an angiosperm.

4. Most protists are classified according to their:
   - cell composition.
   - reproductive structures.
   - means of locomotion. (X)
   - surrounding environment.

5. Plant-like organisms that contain no chlorophyll are members of the:
   - Kingdom Fungi. (X)
   - Kingdom Plantae.
   - Kingdom Monera.
   - Kingdom Protista.
6. Gymnosperms and angiosperms are two basic types of:
   - non-vascular plants.
   - fungi.
   - seed plants. (X)
   - bacteria.

7. Which kingdom has more species than any other?
   - Monera
   - Protista
   - Animalia (X)
   - Plantae

8. Which of the following is NOT an invertebrate?
   - sponge
   - coral
   - snake (X)
   - lobster

9. Which of the following is NOT a vertebrate?
   - Class Reptilia
   - Phylum Arthropoda (X)
   - Class Aves
   - Class Amphibia

10. What are the five major kingdoms of organisms?
    - Reptilia, Aves, Mammalia, Amphibia, Coelenterata
    - Monocotyledon, Dicotyledon, Vertebrate, Nonvertebrate, Protista
    - Monera, Protista, Fungi, Plantae, Animalia (X)
    - Plantae, Animalia, Fungi, Coelenterata, Porifera