



Lesson Plan: The 6 Kingdoms of Life

Grade Level: 5

Subject: Life Science

Duration: 45–60

NGSS 5-LS1-1: Support an argument that plants get the materials they need for growth chiefly from air and water.

Learning Objectives

By the end of this lesson, students will be able to:

- **Identify** the six kingdoms of life and their defining characteristics.
- **Classify** organisms into the correct kingdom based on cell structure, nutrition, and reproduction.



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- **Heterotroph:** An organism that must obtain food by consuming other organisms. Animals and fungi are heterotrophs.
- **Prokaryotic:** A cell that does not have a nucleus. Bacteria and archaea are prokaryotic organisms.
- **Eukaryotic:** A cell that has a nucleus and other membrane-bound structures. Animals, plants, fungi, and protists are eukaryotic organisms.

 **Materials Needed:** (all links are included in this PDF)



- Distribute the Activity Lesson handout and work through the first page together as a class, discussing the characteristics of each kingdom.
(<https://newpathworksheets.com/api/activity-lesson/activity-lesson-science-grade-5-the-6-kingdoms-of-life-kingdoms-4.pdf>)
- Have students work in pairs to complete the organism sorting activity on pages 4-5 of the Activity Lesson, cutting out organisms and gluing them into the correct kingdom categories.
(<https://newpathworksheets.com/api/activity-lesson/activity-lesson-science-grade-5-the-6-kingdoms-of-life-kingdoms-4.pdf>)
- Circulate to check understanding and provide support, asking guiding questions like 'Does this organism have a nucleus?' or 'How does this organism get its food?'

Step 4: Independent Practice (15 minutes)

- Students complete the classification chart on page 3 of the Activity Lesson, listing the classification order and providing examples for each level.
(<https://newpathworksheets.com/api/activity-lesson/activity-lesson-science-grade-5-the-6-kingdoms-of-life-kingdoms-4.pdf>)



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Differentiation Strategies

For advanced learners:

- Challenge students to research and present on a specific phylum within one kingdom, explaining how organisms are further subdivided beyond the kingdom level.
- Have advanced learners create a dichotomous key for classifying 8-10 organisms into their correct kingdoms based on observable characteristics.



For learners needing support:

- Provide a pre-filled classification chart with some kingdoms already labeled and examples given as a scaffold for struggling learners.
- Offer a simplified organism sorting activity with only 3-4 kingdoms (Animals, Plants, Fungi, and Bacteria) and clear visual cues on each organism card indicating key characteristics like 'makes own food' or 'has backbone.'

Extension Activities

- Create a 3D model or diorama representing one kingdom, showing multiple organisms from that kingdom in their natural habitat with labels explaining their classification.
- Research and write a report on how classification has changed over time, from Aristotle's two-kingdom system to the modern six-kingdom system, explaining why scientists made these changes.



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- Worksheet 2 PDF (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-5-the-6-kingdoms-of-life-2.pdf>)
- Worksheet 3 PDF (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-5-the-6-kingdoms-of-life-3.pdf>)
- Vocabulary Set 1 PDF (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-5-the-6-kingdoms-of-life-1.pdf>)
- Vocabulary Set 2 PDF (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-5-the-6-kingdoms-of-life-2.pdf>)



- Vocabulary Set 3 PDF (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-5-the-6-kingdoms-of-life-3.pdf>)
- Vocabulary Set 4 PDF (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-5-the-6-kingdoms-of-life-4.pdf>)



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THE SIX KINGDOMS OF LIFE

Classifying Plants and Animals

Scientists classify plants and animals according to the structures and characteristics of each organism. They compare and contrast organisms, and those with similar structures and characteristics are grouped together.

The **characteristics** that scientists consider when classifying plants and animals are:

- how many cells in the organism
- if the cell(s) contains a nucleus
- how the organism obtains food
- how it moves.



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Order of Classifications

The order within the six Kingdom classification system is Kingdom, Phylum, Class, Order, Family, Genus, and Species. The Kingdom is the largest group of organisms, and Species is the smallest group of organisms.

Lesson Checkpoint:

Think of a fun way to memorize the correct order of classification: Kingdom, Phylum, Class, Order, Family, Genus, and Species.

Kingdom: ANIMAL

Number of cells:	multicellular
Have nucleus?	yes
How obtains food:	have to find own food
Movement:	can move on own
Example:	bear

Kingdom: PLANT

Number of cells:	multicellular
Have nucleus?	yes
How obtains food:	can make own food
Example:	rose

Kingdom: FUNGI

Number of cells:	most are multicellular
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	to get their own food
Example:	algae

Kingdom: EUBACTERIA

Number of cells:	one
Have nucleus?	no
How obtains food:	some make their own/some have to get their own food
Environment:	everywhere: all around us

Kingdom: ARCHAEBACTERIA

Number of cells:	one
Have nucleus?	no
How obtains food:	make their own food
Environment:	harsh: salty, hot even with no sunshine or oxygen

*Lesson Checkpoint:
How do plants obtain food?*

So many animals...

After being placed in the animal kingdom, animals are then placed into a phylum group. The **chordata** is a phylum that includes animals with **backbones**.



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*Lesson Checkpoint:
How do reptiles breathe?*

Invertebrates are classified into phyla based on their structure and characteristics, such as mollusks, annelids, cnidarians, arthropods, sponges, and echinoderms.

- **Mollusks** have soft bodies and most mollusks have shells. Snails and clams are types of mollusks.



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- **Arthropods** are the largest animal phylum. Arthropods have segmented bodies and jointed legs. Insects are included in the arthropod grouping.

Lesson Checkpoint:
What do all cnidarians have in common?

Classification of Plants

Now we can't forget about **plants**. Four well-known plant phyla include flowering plants, mosses, ferns, and conifers.

Flowering plants are vascular, produce seeds, and produce flowers (obviously by their name).

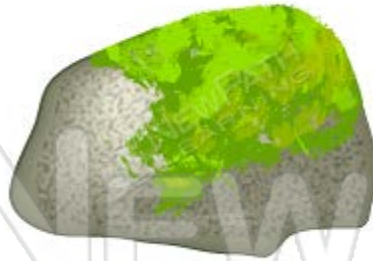
An illustration of a diverse group of children standing on a green hill. Above them are four thought bubbles containing various educational icons: a cube, microscope, and protractor; a beaker, globe, and compass; an atom, pie chart, and 'ABC' sign; and a bar graph, pencil, and math symbols (+, -, x, =).

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Mosses do not flower, they do not produce seeds, and they are not vascular.



Conifers do not flower, they reproduce using cones and seeds, and they are vascular. Conifers have needles instead of leaves, such as pine trees.



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What does vascular mean?





The 6 Kingdoms of Life

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Name _____ Class _____ Date _____

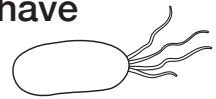
The **characteristics** that scientists consider when **classifying** organisms include the number of cells an organism is made up of, the presence or absence of a cell nucleus, how it obtains food, and how it moves.

The order of the **6-Kingdom classification system** is **Kingdom, Phylum, Class, Order, Family, Genus** and **Species**. The kingdom is the largest group of organisms. A species is the smallest, most specific group of organisms.

Archaeobacteria are unicellular organisms without a cell nucleus. They can make their own food and live in harsh environments.



Eubacteria are unicellular organisms without a cell nucleus. They have various shapes ranging from spheres to spirals. Eubacteria are all around us, including inside our bodies!



Protists
Protists
other

Fungi
organisms
Yeasts

Plants
mosses

Flowering plants
vascular
seeds
have
food throughout the entire plant.

Ferns are vascular; they do not flower and use spores to reproduce.

Conifers are vascular and have needles instead of leaves. They reproduce using cones and seeds.

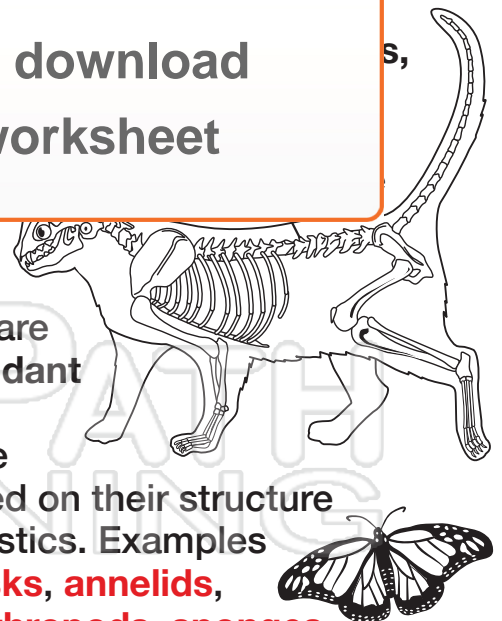
Mosses are nonvascular and have no flowers or seeds.



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Invertebrates are the most abundant organisms on Earth. They are classified based on their structure and characteristics. Examples include **mollusks, annelids, cnidarians, arthropods, sponges** and **echinoderms**.





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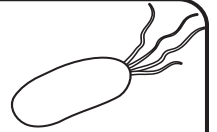
Name _____ Class _____ Date _____

Name examples or draw pictures for each kingdom.

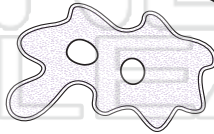
Archaeobacteria



Eubacteria



Protists



Fungi



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Name _____ Class _____ Date _____

Classification

List the **Six Kingdoms** classification system in order and write an example for each.

Classification

Example



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The
orga
A
organisms.

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Name _____ Class _____ Date _____

Color and cut out the organisms. Make a chart to separate them into the six different kingdoms.



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The 6 Kingdoms of Life

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Name _____ Class _____ Date _____

Color and cut out the organisms. Make a chart to separate them into the six different kingdoms.



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Answer Key

Classification

List the Six Kingdoms classification system in order and write an example for each.

Classification

Example

Kingdom

Phylum

Class

Order



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The
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organisms.



NEW PATH LEARNING

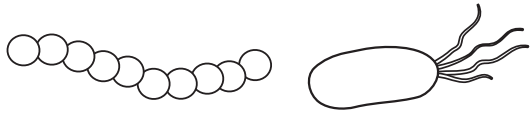


The 6 Kingdoms of Life

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Answer Key - Example

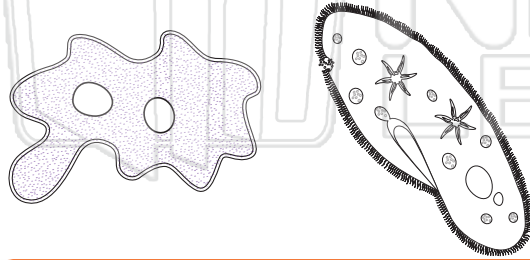
Eubacteria



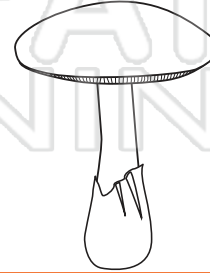
Archaeobacteria



Protists



Fungi



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Name _____ Class _____ Date _____

1 Scientists have a **system to avoid confusion** when they are talking about plants, animals, and other living things. They do this by _____.

- A leaving out some plants
- B leaving out some animals
- C classifying plants and animals
- D only talking about invertebrates

2 **Carolus Linnaeus** first developed a classification system for living things in the 1750's. **How did he choose to classify living organisms?**

- A by their color
- B by their structures and characteristics
- C by their size
- D by their sight



3 The **6-kingdom classification system** is organized in order as: kingdom, phylum, class, order, _____, genus, and species.

- A family



4 A **kingdom** is the largest group of organisms. **What is the smallest, most specific group of organisms?**

- A order
- B class



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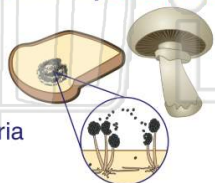
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- D some cells with and some cells without a nucleus

- D produce offspring

9 Organisms in the _____ Kingdom are mostly **multicellular**, their cells have a **nucleus**, and they **obtain their own food**.

- A Plants
- B Fungi
- C Archaeobacteria
- D Eubacteria



10 Mason was walking in the woods and happened to see some mushrooms on the ground. **Mushrooms belong in the _____ Kingdom.**

- A Archaeobacteria
- B Plant
- C Fungi
- D Protists





Name _____ Class _____ Date _____

1 Scientists have a **system to avoid confusion** when they are talking about plants, animals, and other living things. They do this by _____.

- A leaving out some plants
- B leaving out some animals
- C classifying plants and animals
- D only talking about invertebrates

C

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- A by their color
- B by their structures and characteristics
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- D by their sight



B

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- A family



A

4 A **kingdom** is the largest group of organisms. **What is the smallest, most specific group of organisms?**

- A order
- B class



D



5

D

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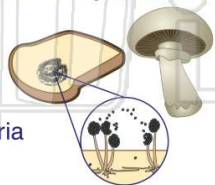
C

D some cells with and some cells without a nucleus

D produce offspring

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- A Plants
- B Fungi
- C Archaeobacteria
- D Eubacteria



B

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- A Archaeobacteria
- B Plant
- C Fungi
- D Protists



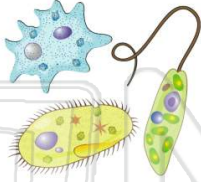
C



Name _____ Class _____ Date _____

1 Most organisms belonging in the **Protista Kingdom** _____.

- A are unicellular
- B are multicellular
- C have no cells
- D do not have a nucleus in cells



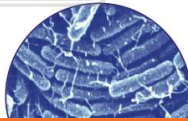
2 Which of the following is an organism that belongs to the **Protista Kingdom**?

- A mushroom
- B jellyfish
- C moss
- D algae



3 Organisms in the _____ Kingdom are **unicellular** and their cells have **no nucleus**.

- A Animal
- B Plant



4 Some organisms in the **Eubacteria Kingdom** make their own food while others _____.

- A need to obtain food from other sources
- B die from the food made



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- B that are unicellular
- C with backbones
- D without backbones



- B mollusks
- C echinoderms
- D arthropods



9 Anthony observed a tadpole develop into an adult frog over several weeks. He knew frogs were **cold-blooded**, and he felt that the frog had **smooth skin**. He concluded that a frog was a(n) _____.

- A mammal
- B fish
- C reptile
- D amphibian



10 Which of the following are **cold-blooded**, have **scales**, and mostly **lay eggs**?

- A amphibians
- B reptiles
- C mammals
- D birds

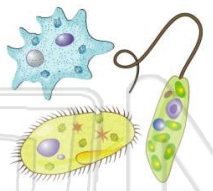




Name _____ Class _____ Date _____

1 Most organisms belonging in the **Protista Kingdom** _____.

A are unicellular
B are multicellular
C have no cells
D do not have a nucleus in cells



(A)

2 Which of the following is an organism that belongs to the **Protista Kingdom**?


A mushroom
B jellyfish
C moss
D algae



(D)

3 Organisms in the _____ Kingdom are **unicellular** and their cells have **no nucleus**.

A Animal
B Plant
C Fungi



(C)

4 Some organisms in the **Eubacteria Kingdom** make their own food while others _____.

A need to obtain food from other sources
B die from the food made



(A)

5



(B)

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(A)

B that are unicellular
C with backbones
D without backbones




B mollusks
C echinoderms
D arthropods



9 Anthony observed a tadpole develop into an adult frog over several weeks. He knew frogs were **cold-blooded**, and he felt that the frog had **smooth skin**. He concluded that a frog was a(n) _____.


A mammal
B fish
C reptile
D amphibian



(D)

10 Which of the following are **cold-blooded**, have **scales**, and mostly **lay eggs**?

A amphibians
B reptiles
C mammals
D birds



(B)



Name _____ Class _____ Date _____

Match each of the following terms to its definition:

- | | | | |
|-----------------|--------|-----------|------------|
| Angiosperm | Animal | Autotroph | Arthropods |
| Archaeobacteria | Algae | Amphibian | Mammal |

1. _____ - warm-blooded organisms that have body hair, a four-chambered heart, produce milk for their young, and breathe air with their lungs



2. _____ - a vertebrate that is ectothermic (cold-blooded) that spends part of its life in the water and part of its life on land; it begins its life in water having gills, and spends the later part of its life on land breathing with lungs



3. _____ ranging in size from _____ contain



4. _____ around _____



5. _____ organisms _____

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6. _____ classification _____

_____ nucleus, some make their own food and some need to obtain food from other sources; often found in harsh environments



7. _____ legs _____

- organisms that have segmented bodies and jointed



8. _____ producing its own food; also called a producer

- a living organism, such as algae, that is capable of





Name _____ Class _____ Date _____

Match each of the following terms to its definition:

Angiosperm

Animal

Autotroph

Arthropods

Archaeobacteria

Algae

Amphibian

Mammal

1. mammal - warm-blooded organisms that have body hair, a four-chambered heart, produce milk for their young, and breathe air with their lungs



2. amphibian - a vertebrate that is ectothermic (cold-blooded) that spends part of its life in the water and part of its life on land; it begins its life in water having gills, and spends the later part of its life on land breathing with lungs



3. alg
from u
chloro



4. ang
seeds

5. ani
capab

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6. arc
classif

nucleus, some make their own food and some need to obtain food from other sources; often found in harsh environments



7. arthropods - organisms that have segmented bodies and jointed legs



8. autotroph - a living organism, such as algae, that is capable of producing its own food; also called a producer

