



Lesson Plan: Six Kingdoms of Life

Grade Level: 6

Subject: Life Science

Duration: 45–60 min

NGSS MS-LS1-1: Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.

Learning Objectives

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

- **Identify** the six kingdoms of life and the key characteristics that define each kingdom.
- **Classify** organisms as prokaryotic or eukaryotic, unicellular or multicellular, autotrophic or heterotrophic.



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genetic material. Protists, fungi, plants, and animals are all eukaryotes.

- **Autotroph:** An organism that makes its own food by capturing energy from sunlight or chemicals. Plants and algae are autotrophs.
- **Heterotroph:** An organism that cannot make its own food and must obtain energy by consuming other organisms or absorbing nutrients from its environment.
- **Archaea:** A kingdom of ancient, prokaryotic, single-celled organisms that live in extreme environments such as hot springs, deep-sea vents, and salt flats.
- **Fungi:** A kingdom of eukaryotic organisms, mostly multicellular, that obtain nutrients by absorbing and decomposing organic matter; includes mushrooms, molds, and yeasts.



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

- Practice Worksheet 0 (Six Kingdoms of Life)
(<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-six-kingdoms-of-life-2030-0.pdf>)
- Practice Worksheet 1 (Six Kingdoms of Life)
(<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-six-kingdoms-of-life-2030-1.pdf>)
- Practice Worksheet 2 (Six Kingdoms of Life)
(<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-six-kingdoms-of-life-2030-2.pdf>)
- Vocabulary Matching Set 1 (Six Kingdoms of Life)
(<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-six-kingdoms-of-life-2030-1.pdf>)



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- Briefly explain that scientists use a classification system to organize all life on Earth into six kingdoms based on cell type, nutrition, and body structure.

Step 2: Direct Instruction (15 minutes)

- Walk through each of the six kingdoms in order — Archaeobacteria, Eubacteria, Protista, Fungi, Plantae, Animalia — using the topic page as a reference, highlighting cell type (prokaryote vs. eukaryote), nutrition (autotroph vs. heterotroph), and body organization (unicellular vs. multicellular). (<https://newpathworksheets.com/science/grade-6/six-kingdoms-of-life-2030>)



- Conduct a physical demonstration: display a mushroom (Fungi — eukaryotic, multicellular, heterotrophic absorber), a sealed bag with bread mold (Fungi), a yogurt label listing live cultures (Eubacteria — prokaryotic), and an algae image (Protista — eukaryotic, autotrophic). Ask students to name one trait that places each specimen in its kingdom.
- Draw a two-column comparison on the board contrasting prokaryotes (Archaeobacteria, Eubacteria) with eukaryotes (Protista, Fungi, Plantae, Animalia), and autotrophs (Plantae, some Protista) with heterotrophs (Animalia, Fungi, most Protista).

Step 3: Guided Practice (12 minutes)

- Distribute Vocabulary Matching Set 1 and work through it together as a class, calling on students to match terms such as Autotroph, Classification, Archaeobacteria, and Fungi to their definitions. (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-six-kingdoms-of-life-2030-1.pdf>)
- Distribute Vocabulary Matching Set 2 and have student pairs complete it, then review answers whole-class; focus discussion on Heterotroph, Kingdom, Invertebrate, and Cymosperm to reinforce cross-kingdom comparisons.



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Step 5: Assessment (8 minutes)

- Students complete Practice Worksheet 1 as a brief assessment; questions cover animal characteristics, reproduction, classification purpose, backbone presence, and Archaeobacteria habitat, providing a cross-kingdom check of understanding. (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-six-kingdoms-of-life-2030-1.pdf>)



- Ask students to classify the following five everyday items into the correct kingdom and justify one trait: a portobello mushroom, pond scum (algae), a house cat, yogurt bacteria, and a cactus. Discuss answers as a class exit check.

Differentiation Strategies

For advanced learners:

- Challenge students to research a specific organism from each kingdom — such as *Thermus aquaticus* (Archaeobacteria), *Volvox* (Protista), and *Penicillium* (Fungi) — and create a six-kingdom comparison chart that includes cell type, nutrition mode, and one real-world importance for each.
- Have advanced students debate whether the six-kingdom system is the best way to classify life, comparing it to the three-domain system (Bacteria, Archaea, Eukarya) and explaining which system they find more useful and why.



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traits such as movement, color, and cell structure.

- Build a physical six-kingdom sorting game: write the names of 30 organisms on index cards and sort them into six labeled envelopes (one per kingdom), then swap with a partner to check each other's sorting and discuss any disagreements.
- Research one organism from the Protista kingdom — such as *Plasmodium* (malaria parasite) or Kelp — and create a one-page fact sheet explaining why it is difficult to classify and which kingdom traits it shares with plants, animals, or fungi.



Complete List of Available Resources:

- NewPathWorksheets: Six Kingdoms of Life (<https://newpathworksheets.com/science/grade-6/six-kingdoms-of-life-2030>)
- Practice Worksheet 0 (Six Kingdoms of Life) (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-six-kingdoms-of-life-2030-0.pdf>)
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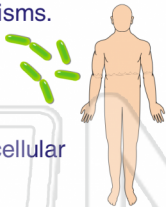


Name _____ Class _____ Date _____

1

Bacteria are considered to be _____ organisms while **humans** are considered to be _____ organisms.

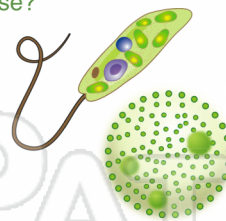
- A multicellular and unicellular
- B small and big
- C unicellular and multicellular
- D lazy and energetic



2

All protists are **unicellular**.
True or False?

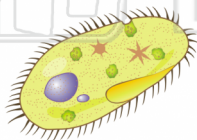
- True
- False



3

What is another word for **animal-like** protists?

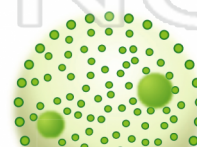
- A ciliate
- B euglenoid
- C protozoan
- D dinoflagellate



4

What is another name for **plant-like** protists?

- A sarcodines
- B dinoflagellates
- C diatoms
- D algae



5



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9

Which is **characteristic** of an **animal**?

- A heterotrophic
- B autotrophic
- C unicellular
- D prokaryotic



10

Animals are able to **move around their environment** and they **reproduce sexually**.

- True
- False



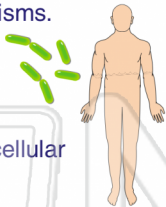


Name _____ Class _____ Date _____

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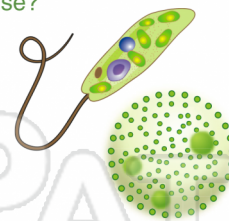


C

2

All protists are **unicellular**.
True or False?

- True
- False

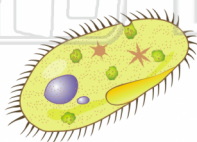


B

3

What is another word for **animal-like** protists?

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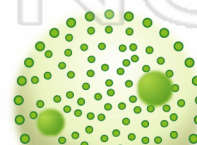


C

4

What is another name for **plant-like** protists?

- A sarcodines
- B dinoflagellates
- C diatoms
- D algae



D

5



B

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A

9

Which is **characteristic** of an **animal**?

- A heterotrophic
- B autotrophic
- C unicellular
- D prokaryotic



A

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Animals are able to **move around their environment** and they **reproduce sexually**.

- True
- False



A



Name _____ Class _____ Date _____

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Animals are able to **move around their environment** and they **reproduce sexually**.

- True
- False



3

How do the **majority** of animals **reproduce**?

- A binary fission
- B conjugation
- C budding
- D sexually



4

Why do scientists **classify** living organisms?

- A so that every organism has its own place
- B to show that organisms are exactly the same
- C to organize organisms into groups so it



5



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- C gymnosperm
- D angiosperm



- C Protozoa
- D Algae

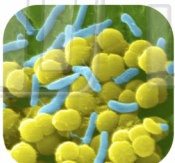


9

Bacteria are **beneficial** because they contribute to food production, decomposition and biotechnology.

True or False?

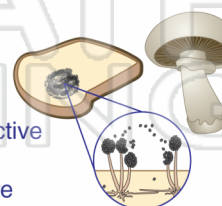
- True
- False



10

Fungi are **classified** according to their _____.

- A size
- B function
- C sexual reproductive structures
- D hyphae structure





Name _____ Class _____ Date _____

1

Which is **characteristic** of an **animal**?

- A heterotrophic
- B autotrophic
- C unicellular
- D prokaryotic



A

2

Animals are able to **move around their environment** and they **reproduce sexually**.

- True
- False



A

3

How do the **majority** of animals **reproduce**?

- A binary fission
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D

4

Why do scientists **classify** living organisms?

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- B to show that organisms are exactly the same
- C to organize organisms into groups so it



C

5



B

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A

- C gymnosperm
- D angiosperm



- C Protozoa
- D Algae

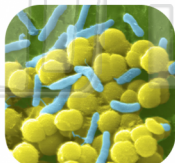


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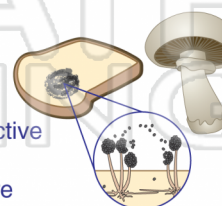


A

10

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C



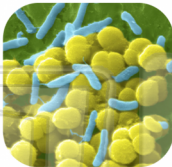
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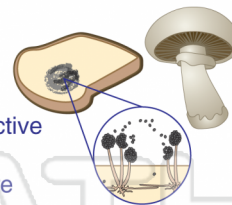
True
False



2

Fungi are **classified** according to their _____.

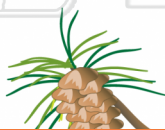
- A size
- B function
- C sexual reproductive structures
- D hyphae structure



3

A _____ is a vascular plant that **has seeds**, but **does not** develop **flowers**.

- A horsetail
- B fern



4

_____ is the **classification** of all **known living organisms** that shows a relationship between the different organisms.

- A Sorting
- B Taxonomy



5

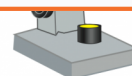


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- C Kingdom, Phylum, Class, Order, Family, Genus, and Species
- D Kingdom, Order, Class, Phylum, Family, Genus, and Species



9

All animals are **heterotrophs**.

True
False



10

Bacteria do **not** have a **nucleus**. What does this **classify** them as?

- A single-celled
- B multicelled
- C eukaryotes
- D prokaryotes





Name _____ Class _____ Date _____

1

Bacteria are **beneficial** because they contribute to food production, decomposition and biotechnology.

True or False?

True
False

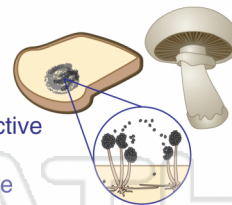


(A)

2

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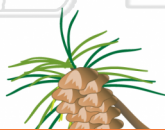


(C)

3

A _____ is a vascular plant that **has seeds**, but **does not** develop **flowers**.

- A horsetail
- B fern
- C gymnosperm



(C)

4

_____ is the **classification** of all **known living organisms** that shows a relationship between the different organisms.

- A Sorting
- B Taxonomy



(B)

5



(B)

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(D)

- C Kingdom, Phylum, Class, Order, Family, Genus, and Species
- D Kingdom, Order, Class, Phylum, Family, Genus, and Species

9

All animals are **heterotrophs**.

True
False

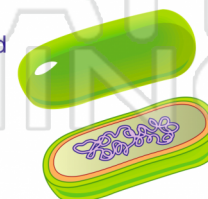


(A)

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Bacteria do **not** have a **nucleus**. What does this **classify** them as?

- A single-celled
- B multicelled
- C eukaryotes
- D prokaryotes



(D)



Name _____ Class _____ Date _____

Match each of the following terms to its definition:

Autotroph

Eubacteria

Algae

Animals

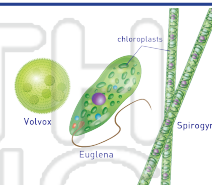
Angiosperm

Archaeobacteria

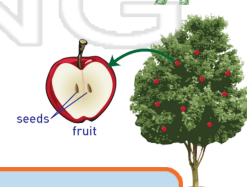
Classification

Fungi

1. - plant-like protists that contain chloroplasts and are autotrophic



2. - a plant that produces seeds that are within a fruit



3. organism



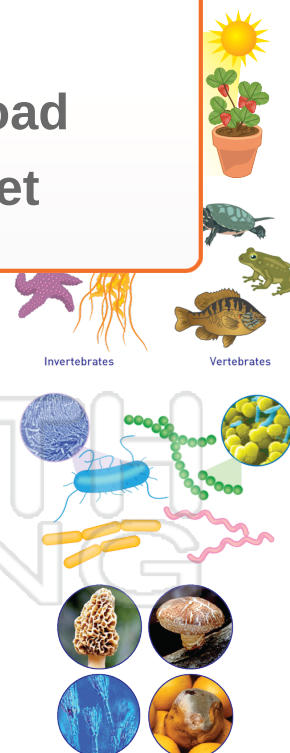
4. eukaryotic

5. the sun

6. their

7. - group of bacteria found in diverse environments throughout the earth

8. - the kingdom that contains eukaryotic heterotrophs that absorb nutrients





Name _____ Class _____ Date _____

Match each of the following terms to its definition:

Autotroph

Eubacteria

Algae

Animals

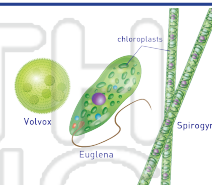
Angiosperm

Archaeobacteria

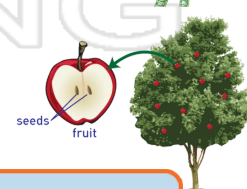
Classification

Fungi

1. **algae** - plant-like protists that contain chloroplasts and are autotrophic



2. **angiosperm** - a plant that produces seeds that are within a fruit



3. **animal**
organism



4. **archaeobacteria**
eukaryotic



5. **autotroph**
sun

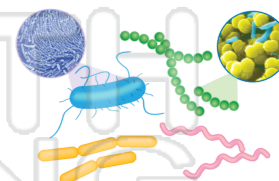


6. **classification**
similar

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7. **eubacteria** - group of bacteria found in diverse environments throughout the earth



8. **fungi** - the kingdom that contains eukaryotic heterotrophs that absorb nutrients





Name _____ Class _____ Date _____

Match each of the following terms to its definition:

Invertebrate

Phloem

Gymnosperm

Mycelium

Heterotroph

Fungi

Hyphae

Kingdom

1. - the kingdom that contains eukaryotic heterotrophs that absorb nutrients



2. - group of vascular plants that develop seeds but do not produce flowers or fruit



3.
4. bodies



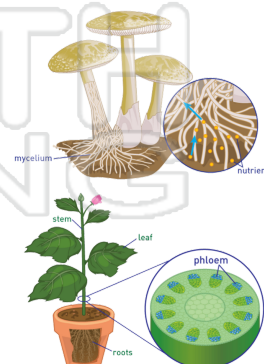
5.
6. **PREVIEW**
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7. - a mass of fungal hyphae that absorbs nutrients

Order	Primates
Family	Hominidae
Genus	Homo
Species	sapiens



8. through the plant





Name _____ Class _____ Date _____

Match each of the following terms to its definition:

Invertebrate

Phloem

Gymnosperm

Mycelium

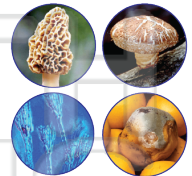
Heterotroph

Fungi

Hyphae

Kingdom

1. **fungi** - the kingdom that contains eukaryotic heterotrophs that absorb nutrients



2. **gymnosperm** - group of vascular plants that develop seeds but do not produce flowers or fruit



3. **het**



4. **hyp**
of mul

5. **inv**

6. **kin**

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7. **mycelium** - a mass of fungal hyphae that absorbs nutrients

Order	Primates
Family	Hominidae
Genus	Homo
Species	sapiens



8. **phloem** - vascular tissue that transports food and nutrients through the plant

