🌍 Lesson Plan: Diversity of Life

Grade Level: 6
Subject: Life Science
Duration: 45–60
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 eight levels of classification used to organize living organisms.
- **Explain** the purpose and importance of classifying organisms using binomial nomenclature.
- **Describe** the six kingdoms of life and their distinguishing characteristics.

mate and produce fertile offspring.

- **Autotroph:** A living organism that is capable of producing its own food, such as plants through photosynthesis. Also called a producer.
- **Taxonomic key:** A method used to classify organisms by dividing them into different categories at each step in a series of steps.

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

- Printed copies of the Study Guide (https://newpathworksheets.com/api/guide/study-guide-science-grade-6-diversity-of-life-1.pdf)
- Activity Lesson on Levels of Classification (https://newpathworksheets.com/api/activity-lesson/activity-lesson-science-grade-6-diversity-of-life-1-3.pdf)
- Vocabulary matching worksheet (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-diversity-of-life-1-1.pdf)
- Classification practice worksheet (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-diversity-of-life-1-0.pdf)
- Assessment worksheet (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-diversity-of-life-1-1.pdf)
- Images or specimens representing the six kingdoms (bacteria cultures, plant samples, fungi samples, protist slides)

cellular organization. (https://newpathworksheets.com/api/guide/study-guide-science-grade-6-diversity-of-life-1.pdf)

- Demonstrate the hierarchical classification system using the bear example from the Activity Lesson, showing how organisms are grouped from Domain down to Species. (https://newpathworksheets.com/api/activity-lesson/activity-lesson-science-grade-6-diversity-of-life-1-3.pdf)
- Explain binomial nomenclature and how scientific names provide universal identification across languages and regions.

- Introduce the six kingdoms (Animalia, Plantae, Archaebacteria, Eubacteria, Fungi, Protists) with examples and distinguishing features from the Study Guide. (https://newpathworksheets.com/api/guide/study-guide-science-grade-6-diversity-of-life-1.pdf)

Step 3: Guided Practice (15 minutes)

- Distribute the vocabulary matching worksheet and work through the first three terms as a class, reinforcing definitions. (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-diversity-of-life-1-1.pdf)
- Use the Activity Lesson worksheet to have students practice listing the seven classification levels in order with examples. (https://newpathworksheets.com/api/activity-lesson/activity-lesson-science-grade-6-diversity-of-life-1-3.pdf)
- Guide students through classifying a familiar organism (such as a dog or oak tree) using the hierarchical system, discussing why each level is placed where it is.

Step 4: Independent Practice (15 minutes)

organisms within a species differ from those in different species.

- Have students classify three everyday organisms (such as a mushroom, a fern, and a housefly) into their correct kingdoms and explain their reasoning.

Step 6: Closure (5 minutes)

- Review the key vocabulary terms and have students share one new fact they learned about the diversity of life.
- Preview the next lesson on ecosystems and how diverse organisms interact within their environments.

Differentiation Strategies

For advanced learners:

- Challenge advanced learners to research the three-domain system (Bacteria, Archaea, Eukarya) and compare it to the six-kingdom classification, explaining why scientists use multiple systems.
- Have students create a dichotomous key for classifying a set of organisms, applying their understanding of taxonomic characteristics.

For learners needing support:

- Provide pre-filled classification charts with some levels completed so students can focus on understanding relationships rather than memorizing all levels at once.
- Offer a laminated reference card showing the eight classification levels in order with a

Complete List of Available Resources:

- NewPathWorksheets: Diversity of Life (https://newpathworksheets.com/science/grade-6/diversity-of-life-1)
- Study Guide: Diversity of Life (https://newpathworksheets.com/api/guide/study-guide-science-grade-6-diversity-of-life-1.pdf)
- Activity Lesson: Levels of Classification (https://newpathworksheets.com/api/activity-lesson/activity-lesson-science-grade-6-diversity-of-life-1-3.pdf)
- Worksheet: Characteristics of Life (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-diversity-of-life-1-0.pdf)

- Worksheet: Classification and Kingdoms (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-diversity-of-life-1-1.pdf)
- Worksheet: Additional Practice (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-diversity-of-life-1-2.pdf)
- Vocabulary: Terms and Definitions Set 1 (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-diversity-of-life-1-1.pdf)
- Vocabulary: Terms and Definitions Set 2 (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-diversity-of-life-1-2.pdf)
- Vocabulary: Terms and Definitions Set 3 (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-diversity-of-life-1-3.pdf)

DIVERSITY OF LIFE

What Is Life?

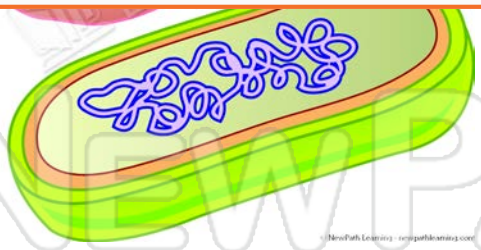
There are many characteristics that scientists use to determine if something is alive. The characteristics are very specific and are applicable to all of the different species that exist on our planet.

We are surrounded by life almost everywhere a human can go on our planet. Appreciating life is important and studying different species is vital to understanding our environment.

Characteristics of Living Organisms

There are certain characteristics of all living organisms on our planet. They:

- Reproduce
- Use energy



Cells are the basic building blocks of all living organisms.

Needs of Living Things
Living organisms must continually meet four basic needs to stay alive. They must have a **living space, water, energy, and stable internal conditions.**

Plants are autotrophic feeders and animals are heterotrophic feeders.

What is Binomial Nomenclature?

Binomial nomenclature is a two-part naming system, with the first part being the **Genus** and the second part being the **Species**. The system clarifies an organism's scientific name and its relationship to other species.

A taxonomic key is a method used to classify organisms by dividing them into different categories at each step in a series of steps.

Levels of Classification

There are different levels of classification that narrow in on a particular species. The relationship between organisms gets closer and closer the lower the level of classification.

There are eight levels used in the classification system. The correct order from the highest level is:

Domain,
Kingdom,
Phylum,
Class,
Order,
Family,
Genus, and
Species

The names of the six different Kingdom's are as follows: Animals (Animalia), Plants (Plantae), Archaebacteria, Eubacteria, Fungi, and Protists.

Diversity of Life

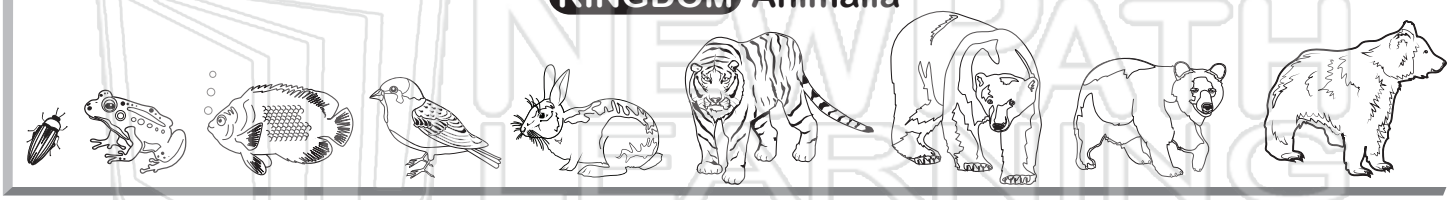
Sci F

Name _____ Class _____ Date _____

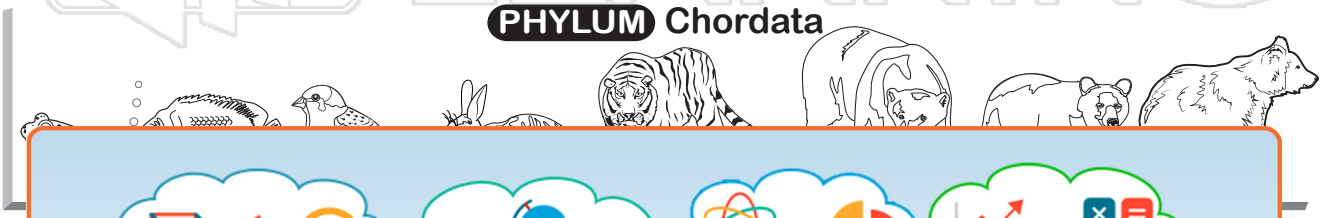
Levels of Classification

Biologists classify every organism into **seven** different levels: **kingdom**, **phylum**, **class**, **order**, **family**, **genus** and **species**. Each level contains organisms with similar characteristics. The **Kingdom** is the **largest** group and the most diverse.

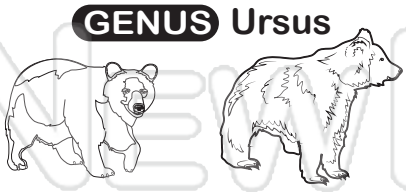
KINGDOM Animalia



PHYLUM Chordata



GENUS Ursus



SPECIES horribilis

Species is the **smallest** group. Only organisms within a species are able to **mate** and produce fertile **offspring**.

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Name _____ Class _____ Date _____

Levels of Classification

List the **seven levels of the** classification system in order and write an example for each.

Classification	Example

The _____ verse grou

A _____ organisms.

Only organisms within a _____ are able to mate and produce fertile offspring.

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Answer Key

Levels of Classification

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

Classification	Example
Kingdom	
Phylum	
Class	
Order	

The _

diver

A ___

organisms.

Only organisms within a _____species_____ are able to mate and produce fertile offspring.

Diversity of life

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Name_____ Class_____ Date_____

1 Jamal was playing with his stuffed animal and suddenly wondered if it was **alive**. He asked his mother and she replied by saying, "No." Why? Because it _____.

A does not breathe
B occasionally moves
C has fur
D looks like an animal

2 All living organisms reproduce, use energy, grow and develop, respond to their environment, have similar chemicals, and have cellular organization.

Which of the following is considered **nonliving** according to these characteristics?

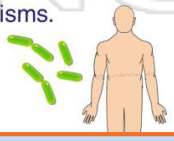
A an apple
B mold
C bacteria
D a rock

3 _____ are the basic **building blocks** of all living organisms.

A Organs
B Cells
C Nuclei
D Organisms

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

A multicellular and unicellular
B small and big



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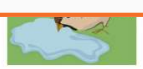
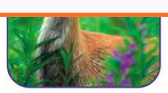
7

B daily exercise
C a large house
D eight hours of sleep daily



an autotroph
D genus and species



9 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 is easier to study them
D to rank organisms against each other by certain characteristics

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

A Sorting
B Taxonomy
C Labeling
D Organizing

Diversity of life

Sci F

Name_____ Class_____ Date_____

1 Jamal was playing with his stuffed animal and suddenly wondered if it was **alive**. He asked his mother and she replied by saying, "No." Why? Because it _____.

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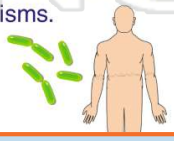

C

D

7

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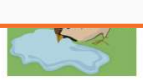

A

an autotroph
D genus and species

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A Sorting
B Taxonomy
C Labeling
D Organizing

B

Diversity of life

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Name_____ Class_____ Date_____

1 **Binomial nomenclature** is _____.

A organisms grouped into the same kingdom
B two organisms from the same genus and species
C a number given to classify an organism
D a classification and naming system that gives each species a two part name

2 The **first** part of an organism's scientific name is called the _____.

A genus
B species
C family
D kingdom

Eptesicus fuscus

3 The **second** part of an organism's scientific name is called the _____.

A genus
B species

4 A **taxonomic key** is _____.

A a system that puts animals into different groups with different characteristics
B a method used to classify organisms by dividing them into different categories at each step in a series of steps
C a mathematical operation that calculates

PREVIEW

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5

7

C Protists
D Chordata

D contain their genetic material inside a nucleus

9 All **protists** are _____.

A unicellular
B multicellular
C prokaryotic
D eukaryotic

10 Which of the following is not in the **Kingdom Fungi**?

A mushroom
B mildew
C moss
D mold

Diversity of life

Sci F

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B species
C family
D kingdom

Eptesicus fuscus

A

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A genus
B species

B

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A a system that puts animals into different groups with different characteristics
B a method used to classify organisms by dividing them into different categories at each step in a series of steps
C a mathematical operation that calculates

B

5

A

7

C Protists
D Chordata

C

D contain their genetic material inside a nucleus

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A mushroom
B mildew
C moss
D mold

C

Diversity of life

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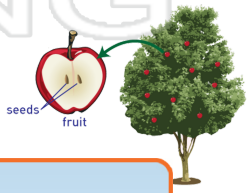
Name_____ Class_____ Date_____

Match each of the following terms to its definition:

Archaea	Bacteria	Binomial nomenclature	Archaebacteria
Autotroph	Class	Plant	Angiosperm

1. - a living thing that makes its own food; the kingdom that contains multicellular photosynthetic organisms that primarily live on land

2. - a plant that produces flowers and develops fruit around its seeds



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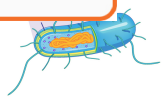
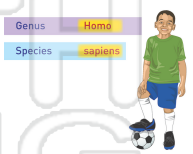


7. - a classification and naming system developed by Carolus Linnaeus that gives each species a two part name



8. - group in the scientific classification system that comes after phylum and before order grouping

Diversity of life

Sci F

Name_____ Class_____ Date_____

Match each of the following terms to its definition:

Archaea	Bacteria	Binomial nomenclature	Archaebacteria
Autotroph	Class	Plant	Angiosperm

1. plant - a living thing that makes its own food; the kingdom that contains multicellular photosynthetic organisms that primarily live on land

2. angiosperm - a plant that produces flowers and develops fruit around its seeds

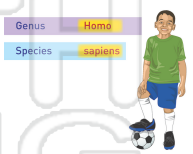
3. arc
cell nu
eukary

4. arc
classif
nucleu
source

5. aut
its ow

6. bac

7. binomial nomenclature - a classification and naming system developed by Carolus Linnaeus that gives each species a two part name



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