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DepED
DEPARTMENT OF EDUCATION

Lesson Exemplar for Science

Lesson 1
Week
5

Lesson Exemplar for Science Grade 5
Quarter 2: Week 5
SY 2023-2024

Development Team

Management Team

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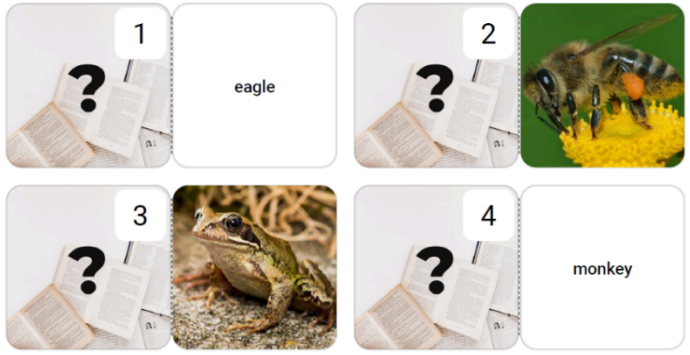
LESSON EXEMPLAR TEMPLATE

SCIENCE/QUARTER 2/ GRADE 5

I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES	
A. **Content Standards**	Learners learn that . . . 1) Animals have systems that help them grow, respond, and reproduce. 2) Living things can be grouped as plants, animals, and microorganisms based on their characteristics.
B. Performance Standards	By the end of the Quarter, students will demonstrate proficiency in classifying animals and microorganisms based on their characteristics. They will accurately describe the key characteristics of various groups of living things, including mammals, reptiles, insects, birds, fish, amphibians, fungi, and bacteria through the use of tables. Additionally, students will explain the importance of classification in both studying and preserving biodiversity, showcasing an understanding of its role in organizing and understanding the complexity of life on Earth. Through their engagement with the lesson content, students will develop a deep appreciation for the diverse array of life forms that inhabit our planet, fostering a sense of responsibility for its conservation and sustainability.
C. Learning Competencies and Objectives	***Learning Competency.*** Use a table to show how living things can be classified into groups based on similar characteristics: a. animals including mammals, reptiles, insects, birds, fish, amphibians, and reptiles b. microorganisms including fungi and bacteria; *The learners will be able to:* *Lesson Objective 1. Classify animals and microorganisms based on their characteristics.* *Lesson Objective 2. Describe the key characteristics of different groups of living things, including animals (mammals, reptiles, insects, birds, fish, amphibians), fungi, and bacteria.* *Lesson Objective 3. Explain the importance of classification in studying and preserving biodiversity. Lesson Objective 4. Develop an appreciation for the diversity of life forms on Eth.*
C. Content	Classification of Living Things (Animals and Microorganisms)
D. Integration	Diversity of life Structure and function Group/classification of microbes as good and bad (bacteria and fungi) What can microbes do to the animals and plants

II. LEARNING RESOURCES
• (2024). Animalstodraw.com. https://animalstodraw.com/wp-content/uploads/2013/11/Vampire_Bat2.jpg. • (2024). Bing.com. https://th.bing.com/th/id/OIP.zzbOC3JTPPI2aohONC60swHaJF?rs=1&pid=ImgDetMain. • (2024). Bing.com. https://th.bing.com/th/id/OIP.IFParkXUEc_fPYuiJdY9YAHaE8?rs=1&pid=ImgDetM. • (2024). Bing.com. https://th.bing.com/th/id/OIP.RUw8fILAYJkSPf1Fr8mPpAHaFj?rs=1&pid=ImgDetMain. • (2024). Bing.com. https://th.bing.com/th/id/OIP.KO29NlZ_LMqlwWMGBkqysQHaFj?rs=1&pid=ImgDetMain. • (2024). Bing.com. https://th.bing.com/th/id/OIP.1iVg1UR2V9UBPF8u1_0jLwHaEs?rs=1&pid=ImgDetMain. • (2024). Freeimages.com. https://images.freeimages.com/images/large-previews/a74/grasshopper-1381146.jpg. • (2024). Twinkl.com.ph. https://www.twinkl.com.ph/parenting-wiki/insect. • (2024). Bing.com. https://th.bing.com/th/id/OIP.Jy_GsS2JNuOvMSc6RXcR-AHaE7?rs=1&pid=ImgDetMain. • Amphibia - Characteristics And Classifications. (n.d.). BYJUS. Retrieved June 9, 2024, from https://byjus.com/biology/amphibia/#:~:text=These%20can%20live%20both%20on%20land%20and%20in. • CK12-Foundation. (2020, March 20). Flexbooks.ck12.org. https://flexbooks.ck12.org/cbook/ck-12-middle-school-life-science-2.0/section/10.20/primary/lesson/mammal-characteristics-ms-ls/. • Ducksters. (2019). Biology for Kids: Fungi. Ducksters.com. https://www.ducksters.com/science/biology/fungi.php. • Fish. (n.d.). Britannica Kids. Retrieved June 9, 2024, from https://kids.britannica.com/kids/article/fish/353130#:~:text=They%20are%20all%20vertebrates%2C%20which%20means%20that%20they. • Helmenstine, A. (2024, April 2). Birds or Class Aves - Description and Characteristics. Science Notes and Projects. https://sciencenotes.org/birds-or-class-aves-description-and-characteristics/. • Interacty – engaging content. (n.d.). Interacty.me. Retrieved June 8, 2024, from https://interacty.me/projects/3e8b98bc15d8319d. • Play Jigsaw - Puzzel.org. (n.d.). Puzzel.org. Retrieved June 8, 2024, from https://puzzel.org/jigsaw/play?p=-NzsH9N0fyXY0o5Sl5J1. • Play Jigsaw - Puzzel.org. (n.d.). Puzzel.org. Retrieved June 8, 2024, from https://puzzel.org/jigsaw/play?p=-NzsIr0ohBUnEv7U1z0E. • Reptile. (n.d.). Britannica Kids. Retrieved June 9, 2024, from https://kids.britannica.com/kids/article/reptile/353708#:~:text=Reptiles%20are%20vertebrates%2C%20or%20animals%20with%20a%20backbone. • Science for Kids: Bacteria and Germs. (2019). Ducksters.com. https://www.ducksters.com/science/bacteria.php.

III. TEACHING AND LEARNING PROCEDURE		**NOTES TO TEACHERS**
A. **Activating Prior Knowledge**	**Day 1** **1. Short Review**	

	Learners will go through the listed plant samples to review the differences between gymnosperms and angiosperms. cycad coconut conifers banana rice corn ginkgo acacia mango **GYMNOSPERMS** | **ANGIOSPERMS** Key answer: Gymnosperm: cycad, ginkgo, conifers Angiosperms: coconut, banana, rice, corn, acacia, mango **1. Feedback (Optional)**	
B. Establishing Lesson Purpose	**Day 1** **1. Lesson Purpose** Learners will match words describing various organisms with corresponding pictures to introduce their understanding of biological classification. They are to match words describing organisms with pictures representing those organisms through a memory game. Memory Game: Word and Picture matching 	The teacher can prepare the cards for the memory game word and picture matching by accessing the link or the learners can play online if there is available internet connectivity.

5	milkfish
6	
7	snake
8	bread mold
9	
10	frog
11	
12	
13	
14	
15	bacillus
16	bee

Play online
https://interacty.me/projects/3e8b98bc15d8319d

Online link:
https://interacty.me/projects/3e8b98bc15d8319d

2. Unlocking Content Vocabulary

Using vocabulary word scrambles, the teacher will delve into helping students form the desired words through the descriptions of certain difficult terms in order to lead a seamless and interesting discussion.

Word Scramble:

AMMAML _____
(a warm-blooded vertebrate animal of a class that is distinguished by the possession of hair or fur, the secretion of milk by females for the nourishment of the young, and (typically) the birth of live young.)

RLPIEET _____
(a vertebrate animal of a class that includes snakes, lizards, crocodiles, turtles, and tortoises. They are distinguished by having a dry scaly skin and typically laying soft-shelled eggs on land.)

ESITNC _____
(a small arthropod animal that has six legs and generally one or two pairs of wings)

DBRI _____
(a warm-blooded egg-laying vertebrate distinguished by the possession of feathers, wings, and a beak and (typically) by being able to fly.)

FSHI _____
(a limbless cold-blooded vertebrate animal with gills and fins and living wholly in water)

PBIAAIHNM _____
(a cold-blooded vertebrate animal of a class that comprises the frogs, toads, newts, and salamanders. They are distinguished by having an aquatic gill-breathing larval stage followed (typically) by a terrestrial lung-breathing adult stage.)

IACTARBE _____
(a member of a large group of unicellular microorganisms which have cell walls but lack organelles and an organized nucleus, including some that can cause disease)

FGIUN _____

(any of a group of spore-producing organisms feeding on organic matter, including molds, yeast,

Word Scramble

AMMAML	~~MAMMAL~~
RLPIEET	~~REPTILE~~
ESITNC	~~INSECT~~
DBRI	~~BIRD~~
FSHI	~~FISH~~
PBIAAIHNM	AMPHIBIAN
IACTARBE	~~BACTERIA~~
FGIUN	~~FUNGI~~

mushrooms, and toadstools)

C. Developing and Deepening Understanding

Day 2

SUB-TOPIC 1: Characteristics of animals including mammals, reptiles, insects, birds, fish, and amphibians.

1. **Explicitation**

Learners will be required to categorize which group the representative animal is a member of. They are to make use of the word box below.

Mammal	Reptile	Insect
Fish	Amphibian	Bird

Sample animal	Classification

Monkey – Mammal
Bee – insect
Snake – reptile
Eagle – bird
Milkfish – fish
Frog – amphibian

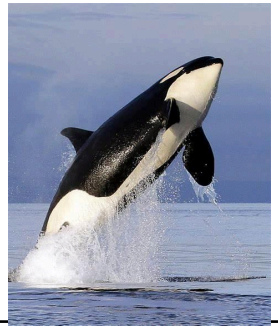
2. **Worked Example**

Learners will be grouped into six representing the six major animal classification namely, mammal, reptile, insect, bird, fish, and amphibian.

Each group will be given two representative samples which they will work on. They are to take down notes on the key characteristics.

MAMMAL GROUP:

https://animalstodraw.com/wp-cont



https://th.bing.com/th/id/OIP.zzbOC3JTPPI2aohONC60swHaJF?rs=1&pid=ImgDetMain

Characteristics of Mammals

What is a mammal? These animals range from bats, cats, and rats to dogs, monkeys, elephants, and whales. They walk, run, swim, and fly. They live in the ocean, fly in the sky, walk on the prairies, and run in the savanna. There is a tremendous amount of diversity within the group in terms of reproduction, habitat, and adaptation for living in those different habitats.

What allows them to live in such diverse environments? They have evolved specialized traits, unlike those of any other group of animals. Mammals (class Mammalia) are endothermic (warm-blooded) vertebrate animals with a number of unique characteristics. In most mammals, these include:

The presence of hair or fur.
Sweat glands.
Glands specialized to produce milk, known as mammary glands.
Three middle ear bones.
A neocortex region in the brain, which specializes in seeing and hearing.
Specialized teeth.
A four-chambered heart.
There are approximately 5,400 mammalian species, ranging in size from the tiny 1–2-inch bumblebee bat to the 108-foot blue whale. These are distributed in 29 orders, 153 families, and about 1,200 genera.

There are three types of mammals, characterized by their method of reproduction. All mammals, except for a few, are viviparous, meaning they produce live young instead of laying eggs. The monotremes, however, have birdlike and reptilian characteristics, such as laying eggs and a cloaca. An example of a monotreme is the platypus with its birdlike beak and egg-laying characteristics. The echidnas are the only other monotreme mammals. A second type of mammal, the marsupial mammal, includes kangaroos, wallabies, koalas and possums. These mammals give birth to underdeveloped embryos, which then climb from the birth canal into a pouch on the front of the mother's body, where it feeds and continues

to grow. The remainder of mammals, which is the majority of mammals, are placental mammals. These mammals develop in the mother's uterus, receiving nutrients across the placenta. Placental mammals include humans, rabbits, squirrels, whales, elephants, shrews, and armadillos. Dogs and cats, and sheep, cattle and horses are also placental mammals.

Mammals are also the only animal group that evolved to live on land and then back to live in the ocean. Whales, dolphins, and porpoises have all adapted from land-dwelling creatures to a life of swimming and reproducing in the water. Whales have evolved into the largest mammals.

Dolphins have adapted to swimming and reproducing in water.

Both humans and bats have body hair, and both humans and bats can nurse their young. These are both characteristics of mammals, the class that both bats and humans belong to.
(https://flexbooks.ck12.org/cbook/ck-12-middle-school-life-science2.0/section/10.20/primary/lesson/mammal-characteristics-ms-ls/)

INSECT GROUP

https://images.freeimages.com/images/large-previews/a74/grasshopper-1381146.jpg

https://th.bing.com/th/id/OIP.RUw8flLAYJkSPf1Fr8mPpAHaFj?rs=1&pid=ImgDetMain

An insect is an invertebrate which fits into the arthropod group because it has an exoskeleton and a segmented body. Some examples of insects include bees, ants and butterflies.

What are some key characteristics of insects?

2. Their bodies are split into three parts and they have six legs (or three pairs of legs).
3. Most insects have two pairs of wings.
4. Insects lay eggs.
5. Insects have antennae (little feelers that help them find their way around and sense what's going on).

(https://www.twinkl.com.ph/parenting-wiki/insect)

Insects, with over a million described species, are the most diverse group of animals on Earth. They may be found in nearly all environments on the planet. No matter where you travel, you will see organisms from this group. Adult insects range in size from a minuscule fairy fly to a 21.9-inch-long stick insect. Insect movement can include flight, walking, and swimming. Insects were the only invertebrates to develop the ability to fly, and this has played an important role in their success. Many adult insects use six legs for walking, and they walk in alternate triangles touching the ground. This allows the insect to walk quickly while staying stable. A few insects have evolved to walk on the surface of the water, like water striders. A large number of other insects also live parts of their lives underwater. Water beetles and water bugs have legs adapted to paddle in the water. Young dragonflies use jet propulsion, sending water out of their back end to move.
(https://flexbooks.ck12.org/cbook/ck-12-middle-school-life-science-2.0/section/9.15/primary/lesson/insects-ms-ls/)

REPTILE GROUP

https://th.bing.com/th/id/OIP.Jy_GsS2JNuOvMSc6RXcR-AHaE7?rs=1&pid=ImgDetMain

https://th.bing.com/th/id/OIP.iF13JiSmDJIEiAFLLIwz7wHaEf?rs=1&pid=ImgDetMain

A reptile is an air-breathing animal that has scales instead of hair or feathers. Reptiles have lived on Earth for more than 280 million years. Scientists consider them to be the ancestors of birds and mammals.

Over the years many kinds of reptiles have become extinct, or died out. The dinosaurs are well-known reptiles that became extinct about 65 million years ago. Today there are about 6,000 species, or types, of living reptile. They include snakes, lizards, turtles, alligators, and crocodiles.

Reptiles are found all over the world, except in very cold areas. The greatest number and variety are in the hot, humid tropics. Snakes and lizards live in many different kinds of places. They can live on land, in trees, in underground tunnels, or in water. Most turtles live in water but spend some time on land. Tortoises live only on land. Alligators and crocodiles spend most of their time in water, but they can make short trips on land.

Reptiles are vertebrates, or animals with a backbone. Except for snakes, most reptiles have four limbs. Reptiles vary greatly in size. Some snakes and lizards are less than 2 inches (5 centimeters) long. The largest crocodiles, pythons, and anacondas can grow to more than 30 feet (9 meters) long. The largest lizard is the Komodo dragon, which reaches a length of more than 10 feet (3 meters). Leatherback turtles grow to more than 7 feet (2 meters) long.

Reptiles have dry skin that is covered with scales. Scales are hardened folds of the upper layer of skin. The scales of many lizards overlap. They are arranged side by side in snakes and alligators and crocodiles. Scales also cover the bony shells of turtles.

Reptiles are cold-blooded animals. This means that their body temperature changes when the temperature around them changes. Reptiles warm or cool

themselves by moving to warmer or cooler places. Most reptiles are inactive during winter. This is called hibernation. Some are inactive during parts of the summer. This is known as estivation.

(https://kids.britannica.com/kids/article/reptile/353708#:~:text=Reptiles%20are%20vertebrates%2C%20or%20animals%20with%20a%20backbone.,to%20more%20than%2030%20feet%20%289%20meters%29%20long.)

FISH GROUP

https://th.bing.com/th/id/OIP.KO29NlZ_LMqlwWMGBkqysQHaFj?rs=1&pid=ImgDetMain

https://th.bing.com/th/id/OIP.U1eXTK2Cr3zsVioEE2ItvgHaEK?rs=1&pid=ImgDetMain

Fish are a kind of animal that lives in water. Fish have lived on Earth for more than 450 million years. There are more than 24,000 species, or kinds, of fish. New ones are discovered every year.

The many different kinds of fish have some things in common. They are all vertebrates, which means that they have a backbone. They are cold-blooded, which means that their body temperature changes along with the temperature of their surroundings. Fish generally breathe through organs called gills. They usually have pairs of fins in place of arms and legs. Most fish are covered with scales.

Many fish have adaptations to help protect them from enemies. For example, some fish have spots near their tail that look like eyes. When an enemy strikes at what it thinks is the head, the fish can escape quickly. Other fish can change color and pattern to match their surroundings and hide themselves.

(https://kids.britannica.com/kids/article/fish/353130#:~:text=They%20are%20all%20vertebrates%2C%20which%20means%20that%20they,and%20legs.%20Most%20fish%20are%20covered%20with%20scales.)

AMPHIBIAN GROUP

https://th.bing.com/th/id/OIP.IFParkXUEc_fPYuiJdY9YAHaE8?rs=1&pid=ImgDetM

https://images.freeimages.com/images/large-previews/1fd/bullfrog-1369128.j

The organisms belonging to the class Amphibia fall under the Chordata phylum of the kingdom Animalia. These are multicellular vertebrates that live both on land and water. This class includes about 3000 species. They are the first cold-blooded animals to have appeared on land.

The characteristics of the organisms present in class amphibia are as follows:
1. These can live both on land and in water.

2. They are ectothermic animals, found in a warm environment.

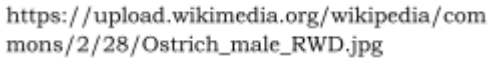
3. Their body is divided into head and trunk. The tail may or may not be present.

4. The skin is smooth and rough without any scales, but with glands that make it moist.
5. They have two pairs of limbs for locomotion.

(https://byjus.com/biology/amphibia/#:~:text=These%20can%20live%20both%20on%20land%20and%20in,scales%2C%20but%20with%20glands%20that%20make%20it%20moist.)

BIRD GROUP

https://th.bing.com/th/id/OIP.1iVg1UR2V9UBPF8u1_0jLwHaEs?rs=1&pid=ImgDetMain



https://upload.wikimedia.org/wikipedia/commons/2/28/Ostrich_male_RWD.jpg

Birds are a group of warm-blooded,
feathered vertebrates that lack teeth and lay hard-shelled eggs. They live in nearly every environment, from the polar regions to the tropics. Most birds fly, but there are also flightless birds, such as penguins and emus. Let's explore the characteristics of birds, compare them with other vertebrates, and examine their classification system.
Birds are a group of endothermic (warm-blooded) vertebrates that are characterized by feathers, toothless beaked jaws, the laying of hard-shelled eggs, a high metabolic rate, a four-chambered heart, and a lightweight skeleton. Key characteristics of birds include:

Feathers: Feathers are unique to birds. These structures evolved from reptilian scales to serve functions like flight, insulation, and display.
Beaks and Bills: Birds have a toothless beak. The beak varies greatly in size and shape, mainly according to feeding habits.
Wings: Not all birds fly, but all have wings.
Oviparity: Birds lay eggs with a calcium carbonate shell. Unlike the eggs of fish, reptiles, and amphibians, birds lay hard eggs.
High Metabolism: Birds have a fast metabolism that supports their high energy activities, especially flight.
Four-chambered Heart: A hear with four chambers allows efficient separation of oxygenated and deoxygenated blood.
Lightweight Skeleton: Many of a bird's bones are hollow. This reduces weight while maintaining strength.
(https://sciencenotes.org/birds-or-class-aves-description-and-characteristics/)

Day 3

a. **Lesson Activity**

Learners will be asked to answer the semantic feature analysis matrix by checking which key feature(s) the major classification of animals belongs to.

Activity 1. Semantic feature analysis

Classification of animals	Key features					
	Vertebrates	Invertebrates	Warm-blooded	Cold-blooded	With jointed legs	Without legs
Insect						
Fish						
Amphibian						
Bird						
Reptile						
Mammal						

Classification of animals	Key features					
	Vertebrates	Invertebrates	Warm-blooded	Cold-blooded	With jointed legs	Without legs
Insect		/			/	/
Fish	/			/		/

Amphibian	/			/		
Bird	/		/			
Reptile	/			/		
Mammal	/		/			

Day 4
SUB-TOPIC 2: Characteristics of microorganisms including fungi and bacteria

a. **Explicitation**

Before the lesson, read each statement below and decide whether you agree or disagree. Answer first in the before-lesson column.

Before Lesson (Agree/Disagree)	**Statement**	**After Lesson (Agree/Disagree)**	**Reflection (What did you learn?)**
	1. All fungi are harmful to humans.		
	2. Bacteria are only found in dirty places.		
	3. Mushrooms are a type of fungus.		
	4. Fungi can help decompose dead plants and animals.		

	5. Bacteria are always bad for our health.		
	6. Yeast, which is used in baking, is a type of fungus.		
	7. There are more bacteria in our mouth than people on Earth.		
	8. We can see bacteria with the naked eye.		
	9. Some bacteria are used to make medicines.		
	10. Molds are a type of bacteria.		

For small group discussions. Learners will be grouped with three to five members per group. They will be learning through discussion and brainstorming about the given topics. Each group will receive a handout on fungi and bacteria.

Fungi

Fungi are a group of living organisms which are classified in their own kingdom. This means they are not animals, plants, or bacteria. Unlike bacteria, which have simple prokaryotic cells, fungi have complex eukaryotic cells like animals and plants.

Fungi are found throughout the Earth including on land, in the water, in the air, and even in plants and animals. They vary widely in size from microscopically small to the largest organisms on Earth at several square miles large. There are more than 100,000 different identified species of fungi.

How are fungi different from plants?

	Fungi were once classified as plants. However, they are different from plants in two important ways: 1) fungi cell walls are composed of chitin rather than cellulose (plants) and 2) fungi do not make their own food like plants do through photosynthesis. Characteristics of Fungi They are eukaryotic. They get their food by decomposing matter or eating off their hosts as parasites. They do not possess chlorophyll like plants. They reproduce through numerous spores rather than pollen, fruit, or seeds. They are usually not motile, meaning they cannot actively move around. Roles of Fungi Food - Many fungi are used as food such as mushrooms and truffles. Yeast, a type of fungi, is used when baking bread to help it rise and to ferment beverages. Decomposition - Fungi play an important role in the decomposition of organic matter. This decomposition is necessary for many of the cycles of life such as the carbon, nitrogen, and oxygen cycles. By breaking down organic matter, fungi release carbon, nitrogen, and oxygen into the soil and the atmosphere. Medicine - Some fungi are used to killed bacteria that can cause infections and disease in humans. They make antibiotics like penicillin and cephalosporin. Types of Fungi Scientists often divide fungi into four groups: club fungi, molds, sac fungi, and imperfect fungi. Some of the more common fungi that you are likely to see or use everyday are described below. Mushrooms - Mushrooms are part of the club fungi group. Mushrooms are the fruiting body of a fungus. Some mushrooms are good to eat and are used as food, while others are very poisonous. Never eat a mushroom you find in the woods! Mold - Molds are formed by filaments called hyphae. Molds tend to form on old fruit, bread, and cheese. They sometimes look furry as the hyphae grow upward and release more mold spores from their tips. Yeast - Yeasts are small round single-celled organisms. Yeasts are important in making bread rise. (https://www.ducksters.com/science/biology/fungi.php)	

	Bacteria Bacteria are tiny little organisms that are everywhere around us. We can't see them without a microscope because they are so small, but they are in the air, on our skin, in our bodies, in the ground, and all throughout nature. Bacteria are single-celled microorganisms. Their cell structure is unique in that they don't have a nucleus and most bacteria have cell walls similar to plant cells. They come in all sorts of shapes including rods, spirals, and spheres. Some bacteria can "swim" around using long tails called flagella. Others just hang out or glide along. Are bacteria dangerous? Most bacteria aren't dangerous, but some are and can make us sick. These bacteria are called pathogens. Pathogens can cause diseases in animals and plants. Some examples of pathogens are leprosy, food poisoning, pneumonia, tetanus, and typhoid fever. Fortunately, we have antibiotics we can take which help to fight off the bad pathogens. We also have antiseptics to help us keep wounds clean of bacteria and antibiotic soap we use to wash to help keep off bad pathogens. Remember to wash your hands! Are bacteria all bad? Not at all. Actually, most bacteria are very helpful to us. They play an important role in the planet's ecosystem as well as in human survival. Bacteria in the soil Bacteria work hard in the soil for us. One type of bacteria, called decomposers, break down material from dead plants and animals. This might sound kind of gross, but it's an important function that helps to create soil and get rid of dead	The teacher has the option to have the pupils play the game online or print the photos and cut them out.

tissue. Another type of bacteria in the soil is Rhizobium bacteria. Rhizobium bacteria help to fertilize the soil with nitrogen for plants to use when growing.

Bacteria in food

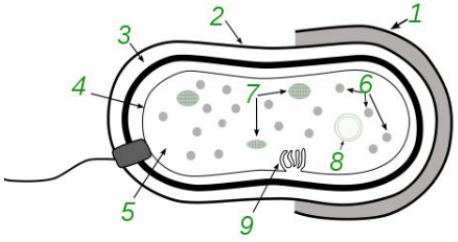
Yep, there's bacteria in our food. Yuck! Well, they aren't really that bad and bacteria is used when making foods like yogurt, cheese, pickles, and soy sauce.

Bacteria in our bodies

There are many good bacteria in our bodies. A primary use of bacteria is to help us digest and breakdown our food. Some bacteria can also help assist our immune system in protecting us from certain organisms that can make us sick.

Parts of the Bacteria Cell (see picture)

The scientific name for bacteria cells is prokaryotes. Prokaryotes are fairly simple cells in that they do not have a cell nucleus or other specialized organelles.
1. Capsula
2. Outer membrane
3. Periplasm and Cell wall
4. Cytoplasmic (inner) membrane
5. Cytoplasm
6. Ribosome
7. Reserve food supplies
8. Chromosome
9. Mesosome



Interesting Facts about Bacteria:
There are around 40 million bacteria in a gram of soil.
Bacteria can survive in very harsh conditions including deep areas of the Earth's crust and in radioactive waste.
There are around as many bacteria cells in a human body as there are human cells.
Bacteria are used to help the environment by treating sewage and breaking down oil from oil spills.
Some bacteria have chemicals that can generate light. This is called bioluminescence.

(https://www.ducksters.com/science/bacteria.php)

b. **Lesson Activity**
After the lesson, learners will review the statements and see if their opinions have changed. They will fill out the after-lesson column. They are to reflect on what they have learned as well.

Statement	**Before Lesson (Agree/Disagree)**	**After Lesson (Agree/Disagree)**	**Reflection (What did you learn?)**
1. All fungi are harmful to humans.			
2. Bacteria are only found in dirty places.			
3. Mushrooms are a type of fungus.			
4. Fungi can help decompose dead plants and animals.			
5. Bacteria are always bad for our health.			

6. Yeast, which is used in baking, is a type of fungus.			
7. There are more bacteria in our mouth than people on Earth.			
8. We can see bacteria with the naked eye.			
9. Some bacteria are used to make medicines.			
10. Molds are a type of bacteria.			

Statement	**Before Lesson (Agree/Disagree)**	**After Lesson (Agree/Disagree)**	**Reflection (What did you learn?)**
1. All fungi are harmful to humans.		Disagree	
2. Bacteria are only found in dirty places.		Disagree	
3. Mushrooms are a type of fungus.		Agree	
4. Fungi can help decompose dead plants and animals.		Agree	

Flashcards are created in cram.com. The teacher can visit the links for better images.

Mammals:
https://www.cram.com/flashcards/mammals-14336885

Birds:
https://www.cram.com/flashcards/birds-14337106

Fish:
https://www.cram.com/flashcards/fish-14337122

Amphibian:
https://www.cram.com/flashcards/amphibians-14337138

Insect:
https://www.cram.com/flashcards/insects-14337099

Reptile:
https://www.cram.com/flashcards/reptiles-14337094

Fungi:

5. Bacteria are always bad for our health.		Disagree	
6. Yeast, which is used in baking, is a type of fungus.		Agree	
7. There are more bacteria in our mouth than people on Earth.		Agree	
8. We can see bacteria with the naked eye.		Disagree	
9. Some bacteria are used to make medicines.		Agree	
10. Molds are a type of bacteria.		Disagree	

https://www.cram.com/flashcards/fungi-14337157

Bacteria: https://www.cram.com/flashcards/bacteria-14337150

b. **Worked Example**

Learners will be asked to create an inventory of animals found in their local community. They are to list it on the matrix and complete the required information.

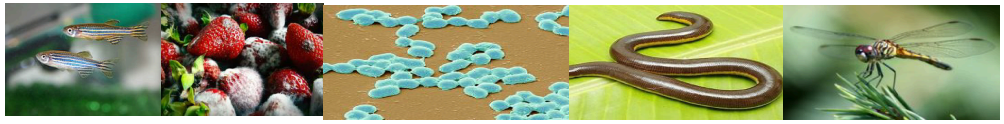
Animal name	Classification (mammals, reptiles, birds, fish,	Description	Habitat	Behavior	Date	Location

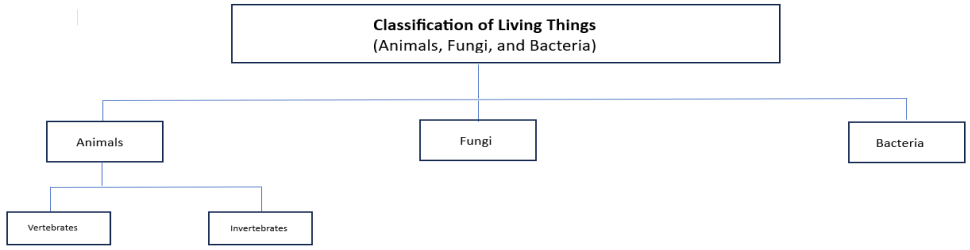
	amphibians, insects, fungi, bacteria)					
Example:						
Cat (domesticated)	Mammal	Small carnivorous mammal; four-legged; with fur	living among people	Licking, head rubbing, and scratching	9 June 2024	House

(learners may add rows if necessary)

c. **Lesson Activity**

Learner will cut and paste the provided images. After sorting it, they'll paste it in the appropriate concept map column.





Mammal: Insect:

Amphibian:

Bird:

Fish:

Reptile:

D. Making Generalizations

1. Learners' Takeaways

Learners will be given two minutes to write down the most important thing they learned during the lesson and one question they still have. The teacher will collect and review their responses to gauge understanding and address any misconceptions.

Two-minute Paper activity:

Lesson learned	Question in mind

	<table><tr><td></td><td></td></tr></table> **2. Reflection on Learning** Learners will answer this question in a ½ sheet of paper: *Can you explain why it's helpful to learn about different kinds of animals and how scientists organize them into groups?*	

IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION		**NOTES TO TEACHERS**
A. Evaluating Learning	**1. Formative Assessment** 1. Which of the following animals is warm-blooded, gives birth to live young, and typically has hair or fur? A. Snake (Reptile) B. Frog (Amphibian) **C. Dog (Mammal)** D. Goldfish (Fish) 2. Which group of animals typically lays eggs, has scales, and is cold-blooded? A. Bird B. Mammal **C. Reptile** D. Insect 3. What type of animal spends part of its life in water and part on land, typically has smooth, moist skin, and undergoes metamorphosis? A. Bird	

	B. Fish C. Mammal **D. Amphibian** 4. Which of the following animals typically has gills for breathing and lives exclusively in water? A. Snake (Reptile) B. Frog (Amphibian) C. Dog (Mammal) **D. Goldfish (Fish)** 5. Which of the following animals typically has six legs, three body parts (head, thorax, abdomen), and undergoes metamorphosis? A. Fish **B. Insect** C. Bird D. Mammal 6. What type of animal typically has feathers, lays eggs, and has wings for flying? A. Mammal B. Reptile **C. Bird** D. Amphibian 7. Which of the following is a type of fungus? A. Goldfish **B. Mushroom** C. Eagle D. Snake 8. What is the role of fungi in ecosystems? A. They help in pollination. **B. They break down dead organic matter.** C. They produce oxygen. D. They are predators.	

<table>
<tr><td></td><td colspan="3">9. What shape are most bacteria?
A. Circular
B. Square
C. Triangle
D. Star

10. What is the primary role of bacteria in the environment?
A. Predation
B. Decomposition
C. Seed dispersal
D. Pollination

2. Homework (Optional)</td><td></td></tr>
<tr><td rowspan="5">B. Teacher’s Remarks</td><td>Note observations on any of the following areas:</td><td>Effective Practices</td><td>Problems Encountered</td><td rowspan="5"></td></tr>
<tr><td>strategies explored</td><td></td><td></td></tr>
<tr><td>materials used</td><td></td><td></td></tr>
<tr><td>learner engagement/ interaction</td><td></td><td></td></tr>
<tr><td>others</td><td></td><td></td></tr>
<tr><td>C. Teacher’s Reflection</td><td colspan="3">Reflection guide or prompt can be on:
▪ <u>principles behind the teaching</u>
What principles and beliefs informed my lesson?
Why did I teach the lesson the way I did?</td><td></td></tr>
</table>

	▪ *students* *What roles did my students play in my lesson?* *What did my students learn? How did they learn?* ▪ *ways forward* *What could I have done differently?* *What can I explore in the next lesson?*	

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