



DISTANCE LEARNING PACKET

5TH GRADE

SCIENCE

CLASSIFICATION

Classification: Animals are classified based on similarities in their characteristics. There are many physical characteristics that can be used to classify animals into specific groups. Animals are grouped with other animals that they are similar to. One major characteristic used to classify animals is whether or not an animal has a backbone. An animal with a backbone is called a **vertebrate**. Vertebrates include mammals, reptiles, fish, amphibians, and birds. An animal that does not have a backbone is called an **invertebrate**. Invertebrates include insects, arachnids, and mollusks. The major groups of vertebrates are **mammals, fish, birds, reptiles, and amphibians**.

Mammals: Mammals are animals that

- are warm-blooded.
- have backbones.
- live on land and/or in water.
- breathe air with lungs.
- have fur or hair.

Female mammals produce milk from mammary glands to feed their young. Almost all give birth to live offspring. Mammals can be found living on land and in water. Humans, bears, dogs, cats, elephants, dolphins, whales, squirrels, foxes, giraffes, rabbits, and wolves are all examples of mammals.

Birds: Birds are animals that

- are warm-blooded.
- have backbones.
- live mostly on land.
- breathe air with lungs.
- have feathers, wings, and a toothless beak.

Female birds lay hard-shelled eggs in nests. Most take care of the eggs and offspring for at least some period of time. Examples of birds include parrots, eagles, penguins, hawks, chickens, ducks, turkeys, and ostriches.

Reptiles: Reptiles are animals that

- are cold-blooded.
- have backbones.
- live on land and in water.
- have lungs that breathe air.
- have bodies covered with dry, scaly skin or plates.

Most female reptiles lay soft-shelled (leathery) eggs on land, but some give birth to live young. Rattlesnakes are an example of this. Some reptiles that lay eggs also build nests. Crocodiles and alligators build nests on the ground where they lay their eggs. Others, like turtle, dig holes on land and bury the eggs. Examples of reptiles include snakes, lizards, turtles, and crocodiles.

Amphibians: Amphibians are animals that

- are cold-blooded.
- have backbones.
- usually live at least part of their lives in water.
- have smooth, moist skin without scales.

Most female amphibians lay jelly-like eggs in water, but some have very unusual ways of reproducing. For example, some frogs lay eggs in plants, some carry the eggs inside of their bodies, and some frogs carry their eggs around on their backs. Eggs that are laid in water develop into larvae, such as tadpoles, first. Then they later change into an adult form, such as a frog, that looks very different. Some amphibians spend only portions of their lives in water. These usually have gills when

they hatch but develop lungs as adults. Some types of amphibians live their entire lives in water. Frogs, including toads, and salamanders are two of the major kinds of amphibians.

Fish: Fish are animals that

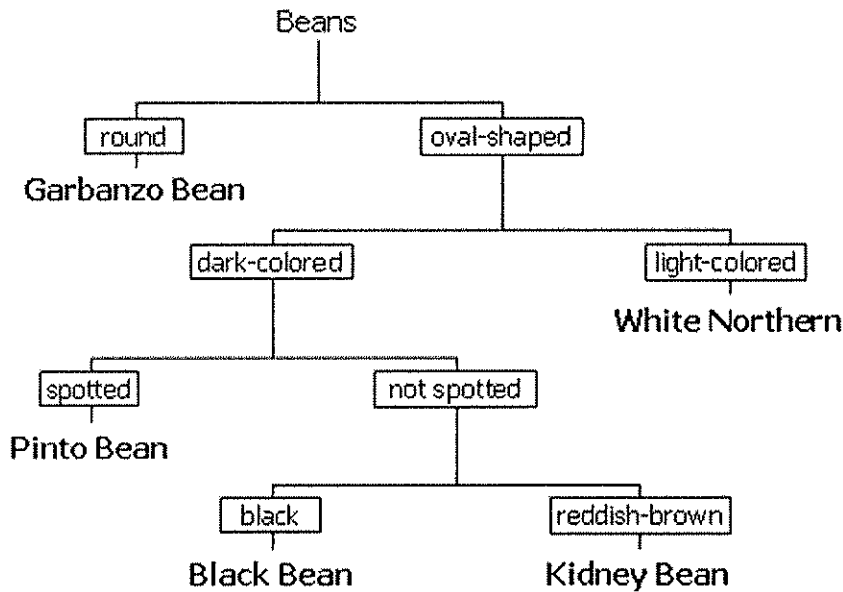
- are cold-blooded.
- have backbones.
- live in water.
- use gills to "breathe" air dissolved in water.
- have fins and scales.

Most female fish lay eggs that hatch later, but some give birth to live young. Salmon, clownfish, tuna, sharks, trout, snapper, and swordfish are all classified as fish.

Classification Keys

A classification key is a tool that can be used to identify an unknown object or organism based on its unique traits.

For example, the diagram below shows a "trait tree" for different types of beans.



The classification key that matches this trait tree is shown below.

1a.	The bean is round.	Garbanzo Bean
1b.	The bean is oval-shaped.	Go to step 2
2a.	The bean is dark-colored.	Go to step 3
2b.	The bean is light-colored.	White Northern
3a.	The bean has spots.	Pinto Bean
3b.	The bean does not have spots.	Go to step 4
4a.	The bean is black.	Black Bean
4b.	The bean is reddish-brown.	Kidney Bean

A classification key is made up of steps and lines. A step is used for each different trait category in the key. In the classification key above, step 1 is based on the trait category of bean shape. A line is a part of a step. Each line describes a variation of the trait at hand. In the classification key above, line 1a refers to round shape. Each line ends in one of two ways: it either identifies a specimen or indicates the next step to move on to.

By following the steps in the classification key, one can eventually determine the identity of the unknown object or organism.

SCIENCE DAY 6: CLASSIFICATION

NAME: _____

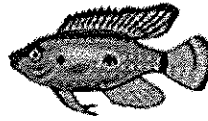
DATE: _____



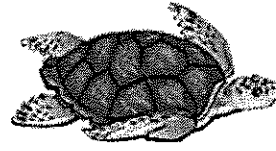
Dolphin



Seahorse



Fish

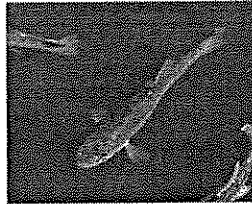


Sea Turtle

Which of the following is a characteristic that these animals have in common? .

- A. They are all the same color and live on land.
- B. Their main method of movement is walking.
- C. They all use swimming as a method of movement.
- D. They all have fur and live in the water.

Henry sees the animal shown below in a pond by his house. This animal has gills and lives in the water. Using the classification key below, what kind of animal did Henry see?



Classification Key

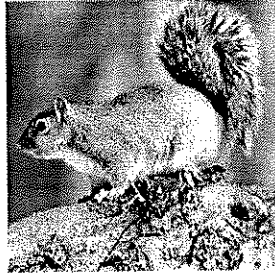
#1	Animal lives only on land	Go to # 2
	Animal lives in water	Go to # 3
#2	Animal has fur	Mammal
	Animal does not have fur	Go to # 4
#3	Animal has gills	Fish
	Animal has lungs only	Go to # 5
#4	Animal has scales	Reptile
	Animal has feathers	Bird
#5	Animal has scales	Reptile
	Animal does not have scales	Amphibian

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

SCIENCE DAY 7: CLASSIFICATION

NAME: _____ Date: _____

Manuel sees the animal shown below in the forest. This animal has fur and lives on land. Using the classification key below, what kind of animal did Manuel see?



Classification Key

# 1 Animal lives only on land	Go to # 2
Animal lives in water	Go to # 3
# 2 Animal has fur	Mammal
Animal does not have fur	Go to # 4
# 3 Animal has gills	Fish
Animal has lungs only	Go to # 5
# 4 Animal has scales	Reptile
Animal has feathers	Bird
# 5 Animal has scales	Reptile
Animal does not have scales	Amphibian

- A. amphibian
- B. bird
- C. reptile
- D. mammal

Birds, lizards, and amphibians are very different groups of animals. However, these groups share some qualities that help them survive. Which of the following is an example of such a quality?

- A. Birds, lizards, and amphibians have fur to keep their bodies warm.
- B. Birds, lizards, and amphibians produce milk to feed their young.
- C. Birds, lizards, and amphibians reproduce by laying eggs.
- D. all of these

SCIENCE DAY 8: ANIMAL CLASSIFICATION

NAME: _____ date: _____

Complete the Paragraph: Use the Word Bank to complete the paragraph. Each word will be used ONE time.

Word Bank				
reptiles	reproduce	groups	invertebrates	trees
classification	vertebrates	two	sharks	spores
spiders	ferns	vegetables	moss	scientists

Plants and animals can both be divided into _____. The process of putting things into groups based on similarities is called _____. One basic way to classify plants is by seed producers and non-seed producers. Plants that do not produce seeds, use _____ to reproduce. _____ means to make more. Plants like _____ and _____ make spores, which are much smaller than seeds. Plants that reproduce using seeds include _____, flowers, and most of the _____ we eat.

Animals can be classified in many different ways. All animals fall into _____ main groups called vertebrates and invertebrates. _____ do not have a backbone. Some examples of invertebrates are insects, squids, and _____. Animals that do have backbones are called _____. There are five groups of vertebrates: fish, amphibians, _____, mammals, and birds. Some examples of vertebrates include _____ (fish), frogs (amphibians), snakes (reptiles), dogs (mammals), and eagles (birds). Classification helps _____ all over the world study plants and animals.

Constructed Response: How does classification help scientists?

SCIENCE DAY 9: VERTEBRATE CLASSIFICATION

NAME: _____ Date: _____

Identify: Read each description, and determine which vertebrate group the animal belongs to.

***Hint: FARM B** (fish, amphibian, reptile, mammal, bird)

1. _____ I breathe through a blowhole and have lungs. I live in water, but give birth to live young. Which type of vertebrate am I?
1. _____ I spend most of my time in the water. I have dry rough skin and lay eggs. Which type of vertebrate am I?
1. _____ I use my feathered wings to navigate the sky. I breathe through lungs and lay eggs. Which type of vertebrate am I?
1. _____ I live on land, but I'm usually found near water. I am cold blooded and have dry scales. Which type of vertebrate am I?
1. _____ I have moist skin and spend a lot of time in or near the water. I was born with gills, but now I breathe through lungs. Which type of vertebrate am I?
1. _____ I use my two legs to walk on land. I am warm blooded and have hair. Which type of vertebrate am I?
1. _____ I have thick fur covering my body. I give birth to live young and breathe through lungs. Which type of vertebrate am I?
1. _____ I have smooth scales and use my gills to breathe underwater. I lay millions of eggs at a time. Which type of vertebrate am I?
1. _____ I have lungs and live on land. My feathers are very long, but I am not able to fly. Which type of vertebrate am I?
1. _____ I was born in the water, but now live on land. I have smooth moist skin, I lay eggs, and I'm cold blooded. Which type of vertebrate am I?

Constructed Response: Pick any vertebrate animal of your choice. Describe which vertebrate group it belongs to, and how you know. Be specific.

INHERITED AND ACQUIRED TRAITS

*Characteristics that are expressed through an organism's genetic material are **inherited traits**.*

*Characteristics that result from environmental influences, such as injuries or practiced skills, are **acquired traits**.
Acquired traits are not inherited.*

Inherited Traits: Every person has genetic material called **DNA** that is passed down from one generation to the next. **Genes** are segments of DNA that code for specific traits, like curly hair or the shape of a person's nose. Since genes are passed from parents to offspring during reproduction, traits that are expressed through genes are known as **inherited traits**. Organisms are born with their inherited traits.

Some examples of visible, inherited traits are eye color, hair color, dimples, height, and whether or not someone has attached earlobes or detached earlobes..

Blood type and immunity to certain diseases are examples of inherited human traits that can't be seen just by looking at a person.

Plants have inherited traits, too. Some common inherited plant characteristics include flower color, flower position, seed color, seed shape, pod shape, pod color, leaf pattern, and stem length.

Acquired Traits: Not all traits are inherited. Some characteristics are the result of **environmental influences** or **lifestyle choices** rather than genetics. These characteristics are known as **acquired traits**.

Some examples of acquired traits are scars, tattoos, piercings, clothing preferences, and hairstyles.

Instinctive Behaviors: Some behaviors are inborn. Behaviors of this type are called *instincts*. Organisms do not have to be taught how to do things that are instincts.

Some examples of instincts are breathing, hibernating, and migrating. Other examples of instinctive behaviors include:

- people and animals crying or howling when in pain
- people and animals eating when hungry
- fish knowing how to swim
- birds knowing how to build nests

Instincts also include *reflexes*, which are the body's fast, automatic responses to signals or events. Sneezing when your nose is tickled is an example of a reflex.

Learned Behaviors: Learned behaviors are actions carried out by an animal or human based on experience. For example, eating apples because you like the taste would be a learned behavior that was based on other times you've eaten apples.

Speaking English is a learned behavior. While most humans are born with some ability to make sounds, people have to *learn* to speak English, or any other language. Other learned behaviors include:

- skipping
- reading
- having good manners
- having pink as a favorite color
- wearing brightly colored clothes
- riding a bike

SCIENCE DAY 10: INHERITED AND ACQUIRED TRAITS

NAME: _____ date: _____

1

An elephant is taught how to stand on its hind legs on command. What type of trait is this?

- A. an inherited trait
- B. a lost trait
- C. a learned trait
- D. a skipped trait

The picture below shows a mother and her child. The mother is teaching her child how to use a computer.



2

Using a computer is a behavior that

- A. is not useful.
- B. is instinctive from birth.
- C. cannot be learned.
- D. must be learned.

3



Which of these is an acquired characteristic of the cat in the picture?

- A. white fur
- B. pointed ears
- C. yellow eyes
- D. body weight