

ANIMAL UNIT

Weeks 2, 3 & 4

- 6.L.4B.1 Vertebrates and Invertebrates
- 6.L.4B.5 Endothermic and Ectothermic



List as many animals as you can in the space provided. Leave 2 small columns blank.

My A-Z Animal List		
A		
B		
C		
D		
E		
F		
G		
H		
I		
J		
K		
L		
M		
N		
O		
P		
Q		
R		
S		
T		
U		
V		
W		
X		
Y		
Z		

V _____

live on FARM B!

ONLY 3-5% of all animals!

F _____

A _____

R _____

M _____

B _____

I _____

make A MESS!

95-97% of all animals!

A _____

M _____

E _____

S _____

S _____

ANIMAL VOCABULARY

6.L.4B.1 & 6.L.4B.5 VOCABULARY

6.L.4B.1 Analyze and interpret data related to the diversity of animals to support claims that all animals (vertebrates and invertebrates) share common characteristics.

6.L.4B.5 Analyze and interpret data to compare how endothermic and ectothermic animals respond to changes in environmental temperature.

1. vertebrates are animals that make up only 3-5% of all animals on earth and:

- ☒ have backbones, an internal skeleton, & muscles
- ☒ blood that circulates through blood vessels
- ☒ lungs (or gills) for breathing
- ☒ protective skin covering
- ☒ a nervous system with a brain
- ☒ have legs, wings, or fins for movement



2. endoskeleton-internal skeleton



3. invertebrates are animals that make up 93-97% of all animals on earth and:

- ☒ do not have backbones or internal skeletons
- ☒ have external skeletons



4. exoskeleton-external skeleton

5. common characteristics of all animals:

- ☒ bodies are multi-cellular
- ☒ they are heterotrophs (they cannot make their own food) and must get their energy by eating plants or other animals
- ☒ major functions are:
 - a. to obtain food and oxygen for energy
 - b. keep their internal conditions in balance
 - c. move
 - d. reproduce

Taking a look at word parts:

ecto (means outside) + therm (heat) = ectothermic (means outside heat)

endo/internal (means inside) + therm (heat) = endothermic (means inside heat)

homeo(human) + sta (keep the same) + is (condition of) = homeostasis

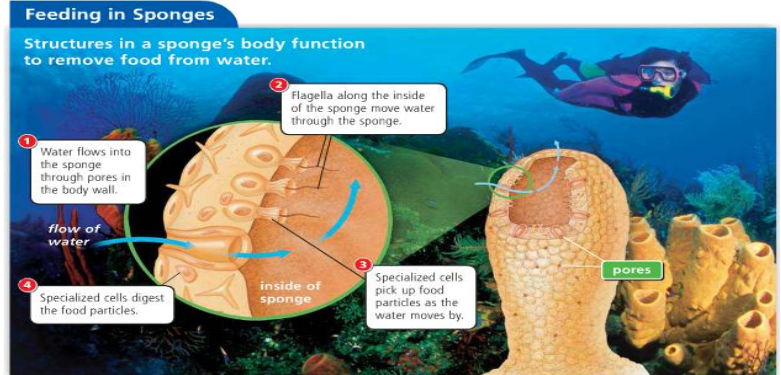
Homeostasis is a condition that constantly regulates our body temperature 98.6.

ANIMAL VOCABULARY

6.L.4B.1 & 6.L.4B.5 VOCABULARY

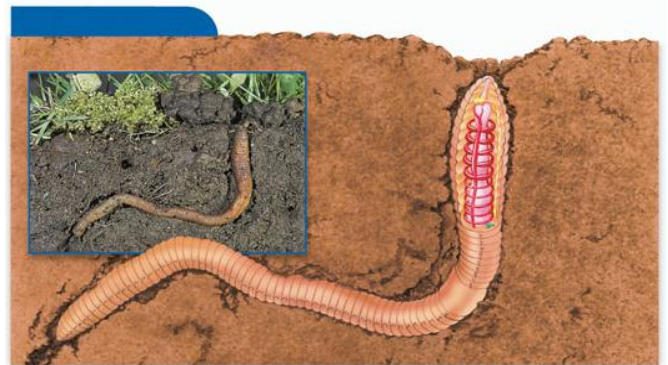
6. Sponges:

- ☑ Very simple invertebrate animals that have many *pores* (holes) through which water flows.
- ☑ Water moves into a central cavity and out through a hole in the top.
- ☑ Obtain their food and eliminate wastes through this passage of water.
- ☑ Specialized cells for obtaining food and oxygen from the water.
- ☑ Illustrate (draw and label) page 131.



7. Segmented Worms

- ☑ invertebrates that have long tube-like bodies that are divided into segments
- ☑ the simplest organisms with a true nervous system and blood contained in vessels
- ☑ a long digestive tube runs down the length of the worm's inner body
- ☑ take in dissolved oxygen from the water through their skin.
- ☑ examples are earthworms and leeches.
- ☑ Illustrate (draw and label) p. 138



8. Echinoderms

- ☑ invertebrates that have *arms* that extend from the middle body outwards
- ☑ have tube feet that take in oxygen from the water and spines
- ☑ examples are sea stars, brittle stars, sea cucumbers, or sea urchins



9. Mollusks

- ☑ *invertebrates that* have soft bodies
- ☑ most have a thick muscular foot for movement or to open and close their shells
- ☑ more developed body systems than sponges or worms
- ☑ take in oxygen through gills or lungs, and some have shells
- ☑ examples may be slugs, snails, clams, and octopi



10. Arthropods

- ☑ *invertebrates that* have jointed legs, segmented bodies, and some have wings
- ☑ have hard outer coverings called *exoskeletons*
- ☑ obtain oxygen from the air through gills or air tubes
- ☑ examples may be insects, arachnids, and crustaceans



ANIMAL VERTEBRATE/INVERTEBRATE ACTIVITIES

6.L.4B.1 Visit Weebly> ANIMAL UNIT > 6.L.4B.1 [Vertebrates & Invertebrates](#)

Use the Fact Sheets PDF and/or the Facts Slideshows to fill in the table below.

TABLE 1: VERTEBRATES

Characteristics <ul style="list-style-type: none"> • Soft, moist skin • Go through metamorphosis • Lay jelly-like eggs • Most can breathe in water with gills as young, and breathe on land with lungs as adults • Cold blooded (ectothermic) 	Characteristics <ul style="list-style-type: none"> • Warm blooded (endothermic) • Mothers nurse their young • Breath through lungs • All have hair at some stage in development • Babies born from live birth 	Characteristics <ul style="list-style-type: none"> • Most lay eggs • Cold blooded (ectothermic) • Most have bodies covered in scales • Obtain dissolved oxygen in water through gills 	Characteristics <ul style="list-style-type: none"> • Has 2 legs • Breath through lungs • Warm blooded (endothermic) • Feathers • Lays eggs • Two wings 	Characteristics <ul style="list-style-type: none"> • Most lay eggs • Most have four legs • Breathe with lungs • Cold blooded (ectothermic) • Scales or plates for skin
Examples	Examples	Examples	Examples	Examples

Characteristics of ALL Animals

- 1 _____
- 2 _____
- 3 _____
- 4 _____
- 5 _____

Think of a trick to remember these 5 characteristics.

Tricks from other classmates:

- _____
- _____
- _____

TABLE 2: INVERTEBRATES

Characteristics <ul style="list-style-type: none"> • Most have an inner and outer shell. • Have soft bodies; most have a thick muscular foot for movement or to open and close their shells. • They have more developed body systems than sponges or worms. • They take in oxygen through gills or lungs, and some have shells. • Examples may be slugs, snails, clams, and octopuses. 	Characteristics <ul style="list-style-type: none"> • It has pores to absorb nutrients and oxygen. • Most live in salt water. • Water moves into a central cavity and out through a hole in the top 	Characteristics <ul style="list-style-type: none"> • Have long tube-like bodies that are divided into segments. • They are the simplest organisms with a true nervous system and blood contained in vessels. • A long digestive tube runs down the length of the worm's inner body. 	Characteristics <ul style="list-style-type: none"> • It has a hard outer body called an exoskeleton. • It has jointed limbs. • It sheds its outer exoskeleton as it grows. This process is known as molting. • They obtain oxygen from the air through gills or air tubes. • Examples may be insects, arachnids, and crustaceans. 	Characteristics <ul style="list-style-type: none"> • Have arms that extend from the middle body outwards. • They have tube feet that take in oxygen from the water and spines. • Examples may be sea stars, brittle stars, sea cucumbers, or sea urchins.
Examples	Examples	Examples	Examples	Examples

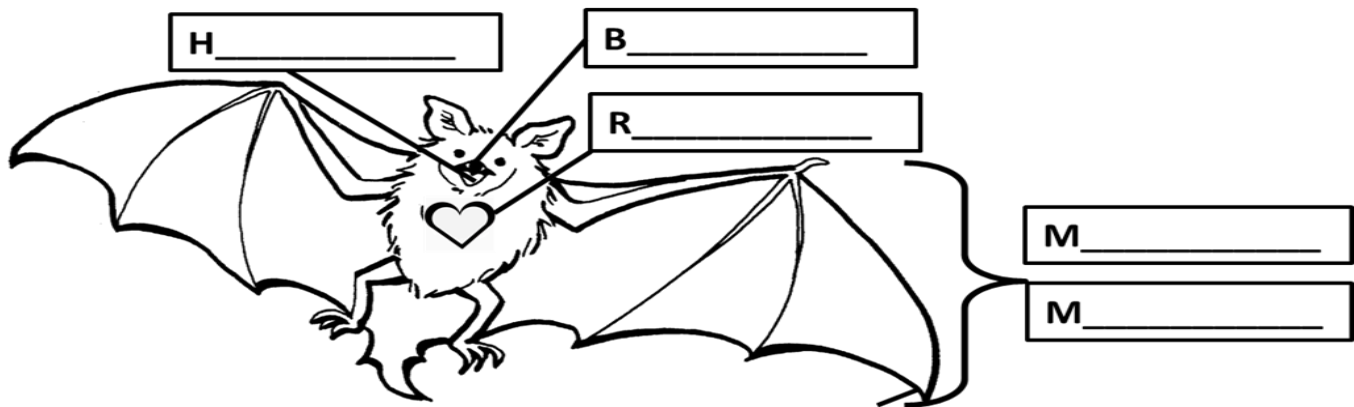
INVERTEBRATES- ARTHROPODS are in the ____ ____ ____

Define an Arthropod- _____

Fill in the correct information regarding these invertebrate groups by using the [FACTS SLIDESHOW](#).

Arthropod Characteristics↓	Arthropod Groups		
	Crustaceans	Insects	Arachnids
# of body segments			
# of legs			
# of antennae			
Live on land/water			

Valadamir the Verterbrate Vampire Bat: Use slide 2 of the [FACTS SLIDESHOW](#) to list and draw/color the characteristics of ALL Animals.

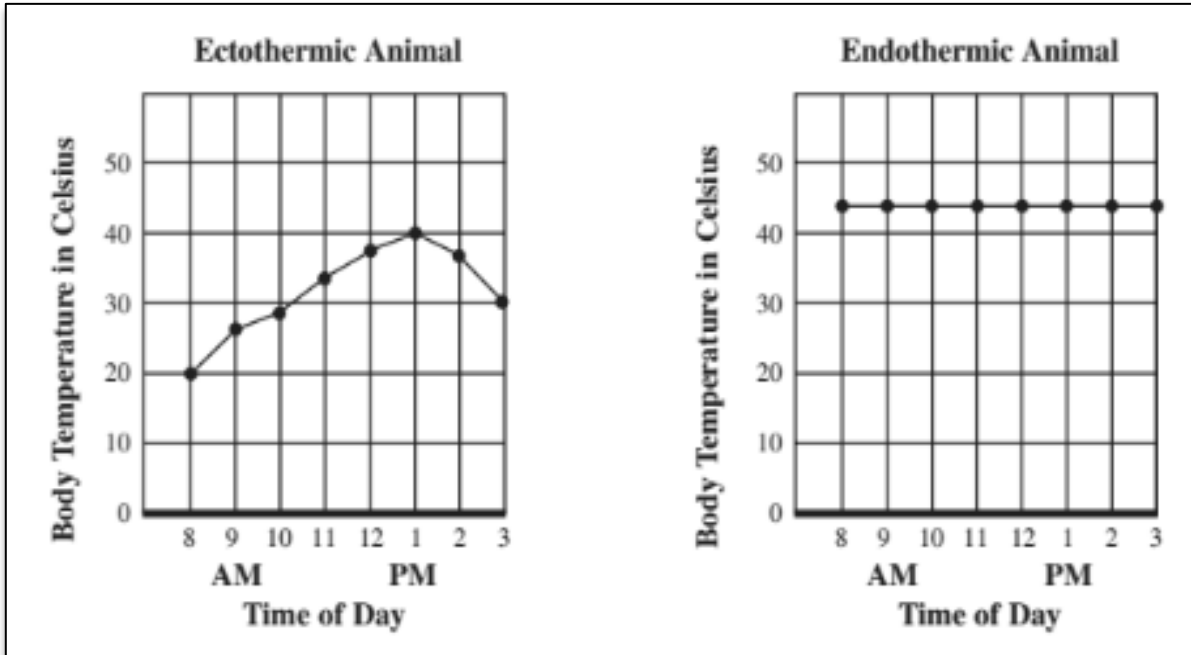


Trick: _____

Characteristics of Vertebrates and Invertebrates: Use slide 3 of the [FACTS SLIDESHOW](#) and pages 2 and 3 of this booklet, list and draw/color the characteristics of vertebrates in the left hand box and invertebrate characteristics in the right hand box. Draw an example of a each. Label at least 5 facts/parts that prove it is a vertebrate and two to prove it is an invertebrate.

6.L.4B.5 ENDOTHERMIC AND ECTOTHERMIC

The graphs below display the body temperatures of two different animals. The temperatures were recorded at the same time and day, and both animals remained in their respective places.

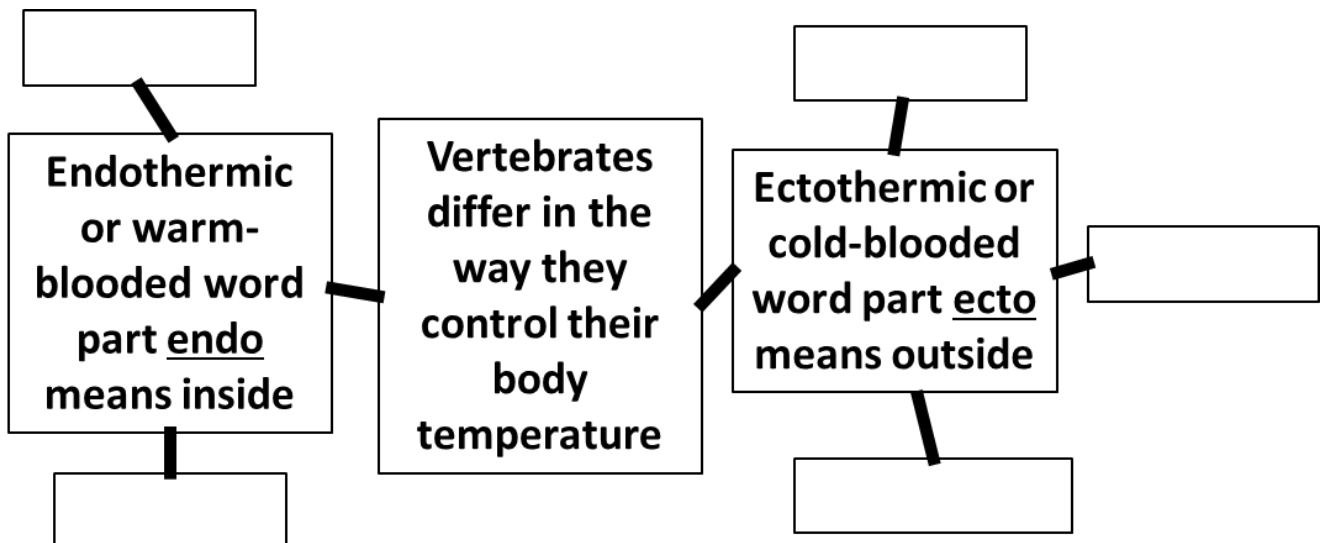


Using the information from the graph, create a definition for ectothermic and endothermic animals.

Endothermic- _____

Ectothermic- _____

Fill in the animal groups in the word map below.



6.L.4A.2 CLASSIFICATION PRACTICE

Identify the correct information regarding each animal listed.

Animal	Vertebrate or Invertebrate	Endothermic or Ectothermic	Class (FARM B) or (A MESS)
Skunk			
Salamander			
Sea Turtle			
Slug			
Star Fish			
Earthworm			
Fruit Bat			
Shark			
Manatee			
Ostrich			

Classification of Organisms

Taxonomists- scientists who group organisms.

King Phillip Came Over For Great Spaghetti...



KINGDOM
PHYLUM
CLASS
ORDER
FAMILY
GENUS
SPECIES

Clemmys guttata



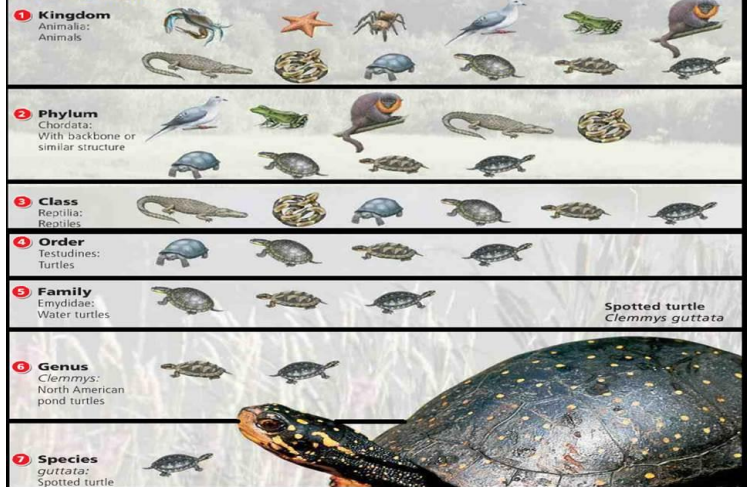
Classification Hierarchy		
	Spotted turtle	Cat
Kingdom	Animalia	Animalia
Phylum	Chordata	Chordata
Class	Reptilia	Mammalia
Order	Testudines	Carnivora
Family	Emydidae	Felidae
Genus	<i>Clemmys</i>	<i>Felis</i>
Species	<i>guttata</i>	<i>catus</i>



Felis catus

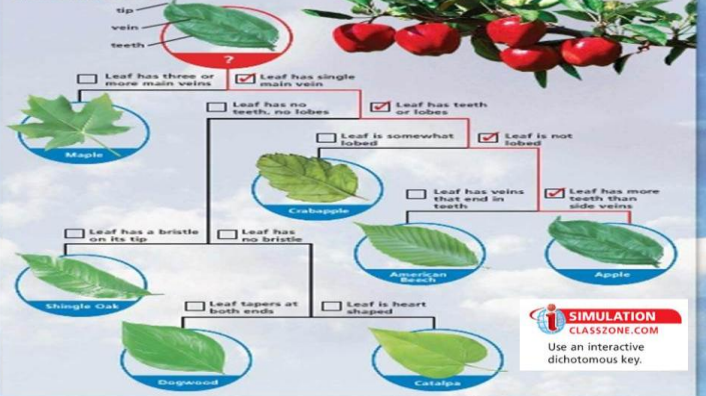
Classifying Organisms

Moving from kingdom to species, each level includes a smaller set of organisms.



Dichotomous Key

Use the dichotomous key below to discover on what tree the circled leaf is found.



All animals:

_____ their internal conditions, rep _____, move, obtain _____ and _____ for energy, are multi _____, and are _____ trophs (hunter gatherers!)

Vertebrates: "Many R Big Runy Animals!"

- have _____ skeletons (a backbone inside of their body)
- lungs or _____ to breathe
- blood
- protective _____ covering
- legs, _____ or _____ to move
- nervous system with a _____

Animals

Invertebrates: They Make "A. M. E. S. S."

- DO NOT have internal skeletons (_____)
- Some have external skeletons called _____

Ectothermic vs Endothermic

- Endothermic- endo means _____ so the temperature changes from _____ of the animal's body (_____ blooded)
 - o If hot, can cool off by _____, panting, or moving locations
 - o _____ more often because maintaining the correct temperature takes more _____
- Ectothermic- ecto means _____ so the body temperature of the animal changes with its outside _____ (_____ blooded)

Mammals:

_____ thermic, breathe with _____, most have _____ that are born live, have fur or _____, and produce _____ to feed young

Reptiles:

_____ thermic, breathe with _____, MOST lay _____, have _____ or plates

Birds:

_____ thermic, breathe with _____, lay _____, Have feathers, a _____, 2 wings and 2 _____

Fish:

_____ thermic, get oxygen through _____, lay eggs, have _____ and fins, live in the _____

Amphibians: Toads, Frogs, Salamanders

_____ thermic, have gills as young and _____ as adults, go through metamorphosis, lay _____ like eggs (different from reptiles!)
Toads have thick bumpy skin and frogs/salamanders have smooth, moist skin

Sponges:

- have pores for _____ to flow
- Obtain _____ and eliminate waste through passage of water

Arthropods:

- have _____ legs, _____ bodies, and some have _____
- Have _____ skeletons
- Get oxygen from _____ or _____ tubes
- **** Arthropods are in the C. I. A.!!!
→ Crustaceans, insects, arachnids

Mollusks:

- have _____ bodies, some have _____, and most have a thick, muscular _____ for movement
- more developed body _____
- take in oxygen through _____ or _____
- Ex: slugs, _____, clams, and _____

Echinoderms:

- have _____ that extend from the middle of the body outwards
- have tube feet that take in oxygen from the water
- Ex: sea stars, brittle stars, sea cucumbers, sea

Segmented Worms:

- have long _____-like bodies that are divided into _____
- Simplest organisms with true _____ systems and _____ vessels
- Take in oxygen through their _____
- Have long _____ tube
- Ex: Earthworms and leeches

Animal Characteristics Charts for Vertebrates and Invertebrates

Name: _____ Block: _____

Vertebrates	Backbone	Cold-blooded	Warm-blooded	Gills	Lungs	Smooth skin	Scales	Feathers	Fur or Hair	Produce milk for young	Structures	Specific Adaptations	Reproduction Sexual or Asexual or both
Reptiles													
Mammals													
Birds													
Fish													
Amphibians													

Invertebrates	Pores	Gills	Soft bodies	Exoskeleton	Segmented bodies	How does it dissolve Oxygen?	Reproduction Sexual or Asexual or both	Has shells	Lives in water	Jointed legs	Other Structures	Specific Adaptations	Symmetry Bilateral or Radial
Sponges													
Segmented worms													
Echinoderms													
Mollusks													
Arthropods													

ANIMAL BIRD BEAK/FEET ACTIVITIES

Bird Beaks and Feet

Introduction: A bird's beak and feet can tell us much about their habitat and lifestyle. Most birds are even classified according to structural similarities between their beaks and feet. In this exercise, you will look at pictures of birds and make inferences about their lifestyles.

Description	Function
Beaks	
Short & Rounded	Multipurpose, Eating Insects and Seeds
Spear Shaped	Spearing Fish
Chisel Shaped, Flat & Pointed	Drilling for Insects
Flat & Square-Shaped	Straining Algae
Long & Fat, Like a Scoop	Scooping Up Fish
Hooked	Catching & Tearing Prey
Long & Tubular	Sucking Nectar from Flowers
Feet	
Long Muscular Legs	Running
Long Skinny Legs	Wading
Short Legs with Blunt Claws	Scratching, Ground Walking
Three Toes in Front, One Behind	Perching
Webbed	Swimming
Large Hook-like Claws (Talons)	Grasping Prey
Tiny Short Legs	Hovering
Two Toes in Front, Two Behind	Climbing

Examine the images of birds and write your inference about what the bird eats, and where it lives in the data table.



Chicken



Bluebird



Duck



Humminabird



Pelican



Sparrow



Eagle



Heron



Woodpecker



Kingfisher



Flamingo



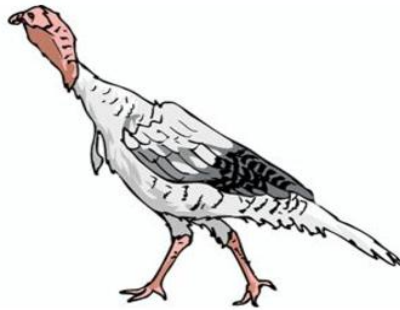
Owl

Bird Beaks and Feet

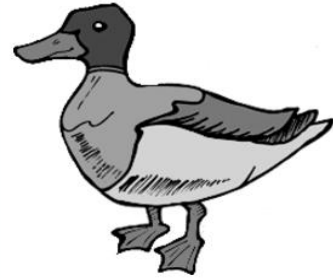
Bluebird



Pheasant



Duck



Eagle



Sparrow



Flamingo



Heron



Kingfisher



Owl



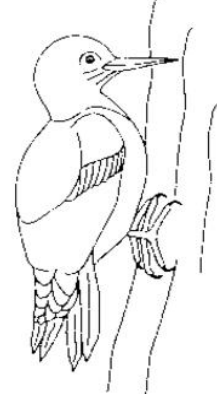
Pelican



Hummingbird



Woodpecker



Name _____

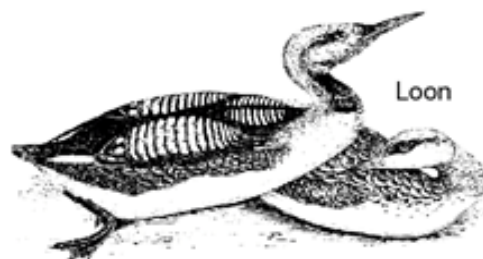
Data Table

Bird	Type of Feet (perching, climbing, running, grasping, wading, swimming, hovering)	Type of Beak (short, long, stout, thin, hooked, scoop, flat)	Probable Diet (seeds, nectar, insects, fish, rodents, algae)	Probable Habitat (forest, prairie, lake)
Bluebird				
Pheasant				
Duck				
Eagle				
Sparrow				
Flamingo			<i>shrimp</i>	
Heron				
Kingfisher				
Owl				
Pelican				
Hummingbird				
Woodpecker				
	Beaks Short and thick - seed cracking Long and thin, slightly curved - eating nectar Strong, chisel like - drilling Sharp, curved and pointed - tearing flesh Long and flattened - straining algae and plants Spear shaped - spearing fish		Feet 3 toes in front, 1 behind - perching 2 toes in front, 2 behind - climbing Powerful curved talons - grasping prey Webbed - swimming Long and thin - wading Thick and stout - running	

Analysis

1. Different birds may have similar beaks and diets. Herons and kingfishers, for instance, all have long sharp pointed beaks for spearing fish. Their feet, however, are quite different. Describe how the heron and kingfisher differ in the method by which they hunt for fish (using their feet to help you answer)

2. There are exceptions! The secretary bird is well known for its snake hunting skills. What do you think its long legs are used for?



Loon



filters tiny
animals/plants in
water



Tears flesh



Cracks nuts &
seeds









Grabs and holds
worms



Traps insects in
midair



Scoops fish from
water

Shape of Bird Foot	Type of Bird Foot	Adaptation and Lifestyle
	Climbing	Feet like these help birds, like woodpeckers, climb trees. Notice the sharp nails for digging into the wood, and the back toes so that the bird doesn't topple backward.
	Swimming	Webbed feet help birds, like ducks, paddle through the water more efficiently.
	Running	For running quickly, birds like emus, often have three toes, all of which face forward.
	Perching	Feet with four toes, one of which is in the back, are useful for perching on tree branches. Birds, like blue jays, wrap their toes around the branch to help balance.
	Grasping	Predatory birds, like hawks, have clawlike feet called <i>talons</i> for grabbing their prey.
	Scratching	Chickens, and other birds that scratch in the dirt for insects, usually have feet with four toes, all of which have strong nails for digging into the ground.