ANIMAL UNIT

- 6-3.1 Vertebrates and Invertebrates
- 6-3.2 Obtaining Resources
- 6-3.3 Endothermic and Ectothermic
- 6-1.3 Dichotomous Keys

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		
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K		
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Y		
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V_____

live on FARM B!

F_____

A_____

R_____

M_____

B_____

I_____

make A MESS!

A_____

M_____

E_____

S_____

S_____

ANIMAL VOCABULARY

6.3.1 & 6-3.3 VOCABULARY PAGE 1

6.3.1 Compare the characteristic structures of <u>invertebrate</u> <u>animals</u> (including sponges, segmented worms, echinoderms, mollusks, and arthropods) and <u>vertebrate</u> <u>animals</u> (fish, amphibians, reptiles, birds, and mammals).

6-3.3 Compare the response that a warm-blooded (endothermic) animal makes to a fluctuation in environmental temperature with the response that a cold-blooded (ectothermic) animal makes to such a fluctuation.

1. vertebrates are animals that:
- **☑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:
- **☑ 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**

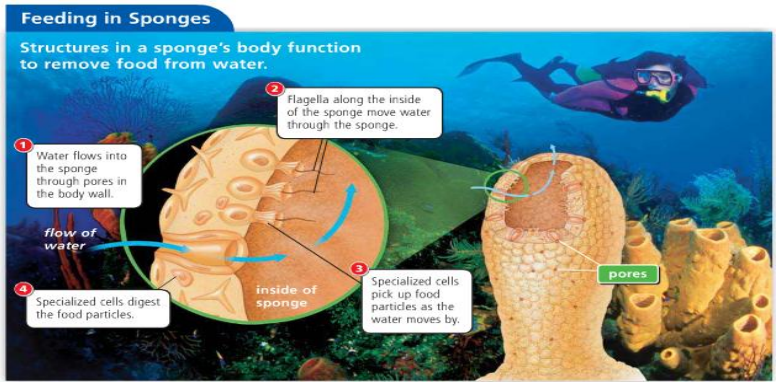
<u>Taking a look at word parts</u>:
ecto (means outside) + therm (heat) = ecothermic (means outside heat)
endo/internal (means inside) + therm (heat) = endothermic (means inside heat)
homeo(human) + sta (keep the same) + is (condition of) = homeostasis
Homeostasis is a condition that constantly regulates our body temperature 98.6.

ANIMAL VOCABULARY

6.3.1 & 6-3.3 VOCABULARY PAGE 2

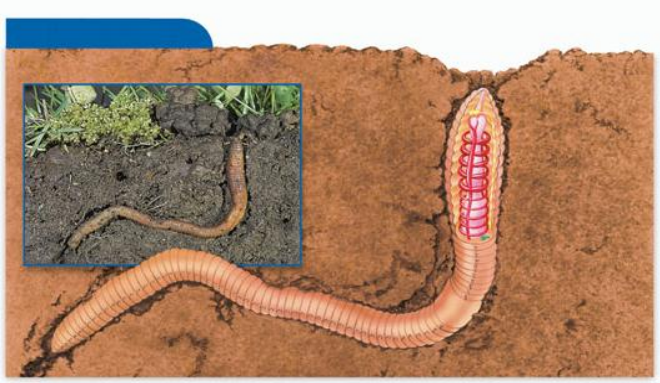
6. Sponges:

- ☑ 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.



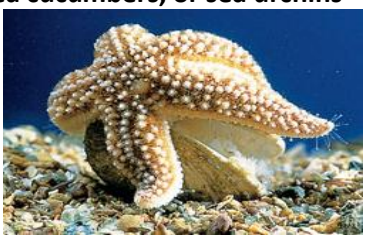
7. Segmented Worms

- ☑ 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

Visit Weebly> ANIMAL UNIT folder> 6-3.1 Vertebrates & Invertebrates
Use the Fact Sheets PDF and/or the Facts Slideshows to fill in the table below.

TABLE 1: VERTEBRATES

Characteristics • 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** • Warm blooded (endothermic) • Mothers nurse their young • Breath through lungs • All have hair at some stage in development •Babies born from live birth	**Characteristics** • Most lay eggs • Cold blooded (ectothermic) • Most have bodies covered in scales • Obtain dissolved oxygen in water through gills	**Characteristics** • Has 2 legs • Breath through lungs • Warm blooded (endothermic) • Feathers • Lays eggs • Two wings	**Characteristics** • 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 • 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** •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** •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** •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** •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**

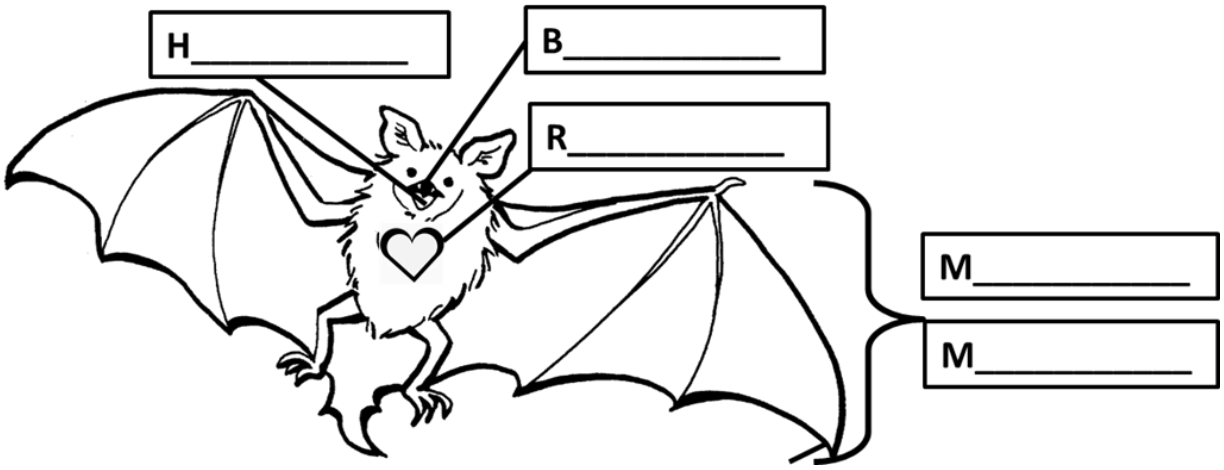
INVERTEBRATES- **ARTHROPODS** are in the ___ ___ ___

Define Arthropod- _____

Fill in the correct information regarding these invertebrate groups by using the **FACTS SLIDESHOW**.

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

Valadamir the Verterbrate Vampire Bat: Use the **FACTS SLIDESHOW** to list and draw/color the characteristics of ALL ANIMALS.



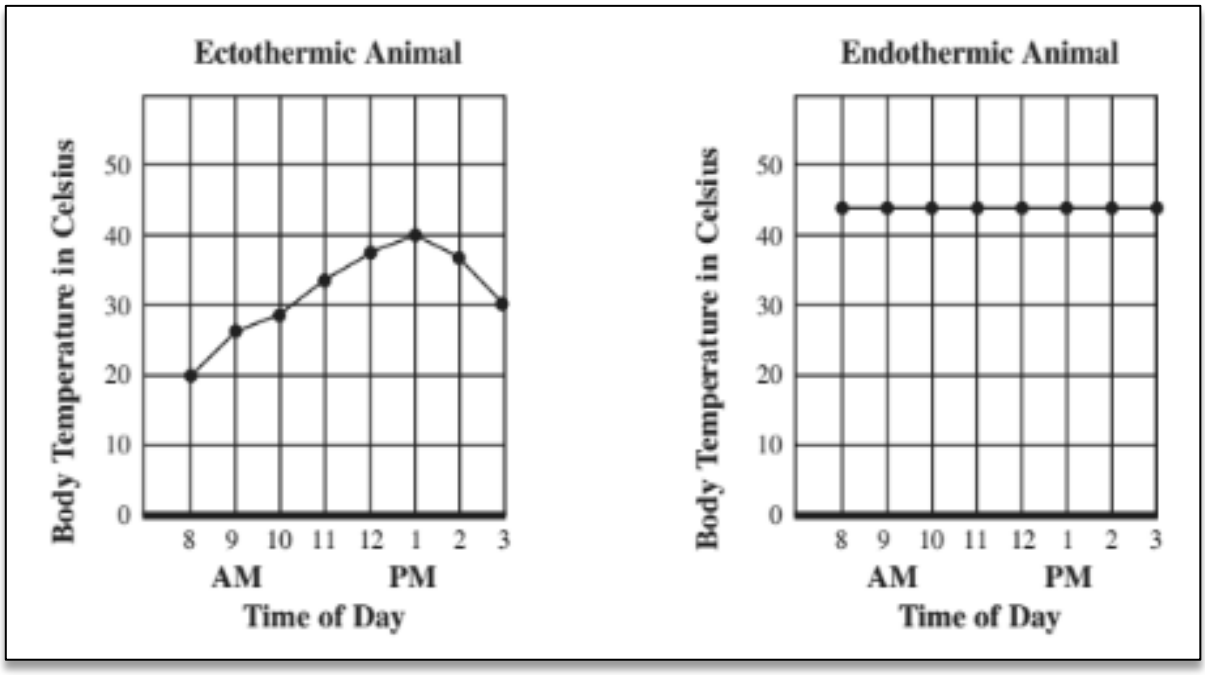
Trick: _____

Characteristics of Vertebrates

Draw an example of a vertebrate. Label at least 5 parts that prove it is a vertebrate.

6-3.3 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.

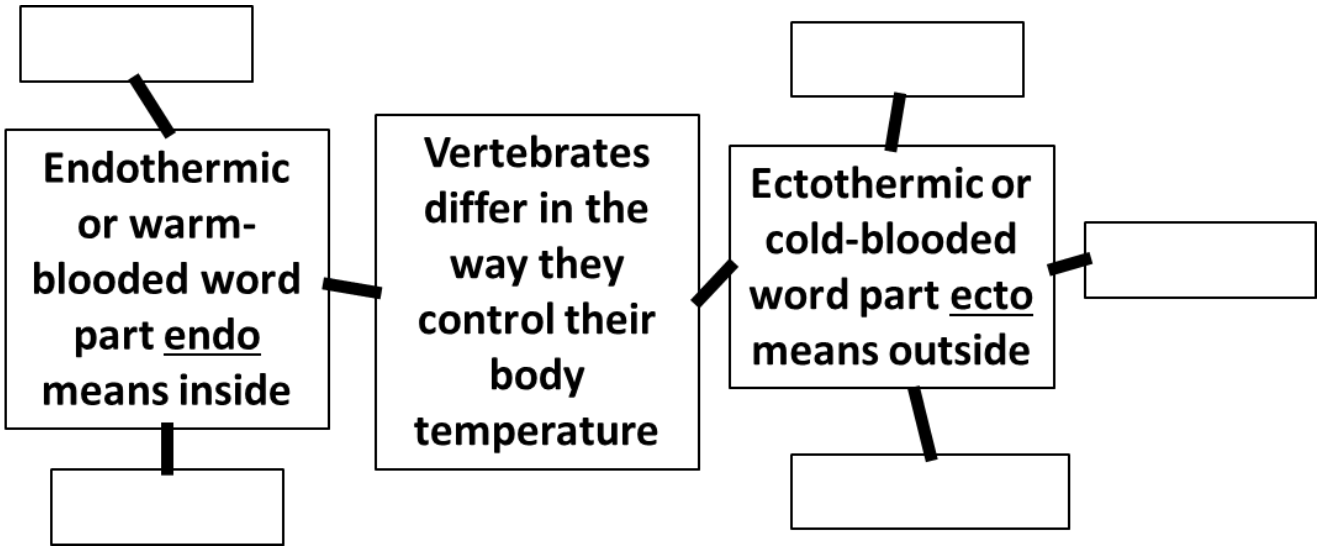


Using the information from the graph, create a definition for ectothermic and endothermic animals.

Endothermic- _____

Ectothermic- _____

Fill in the animal groups in the word map below.



CLASSIFICATION PRACTICE

Identify the correct information regarding each animal listed.

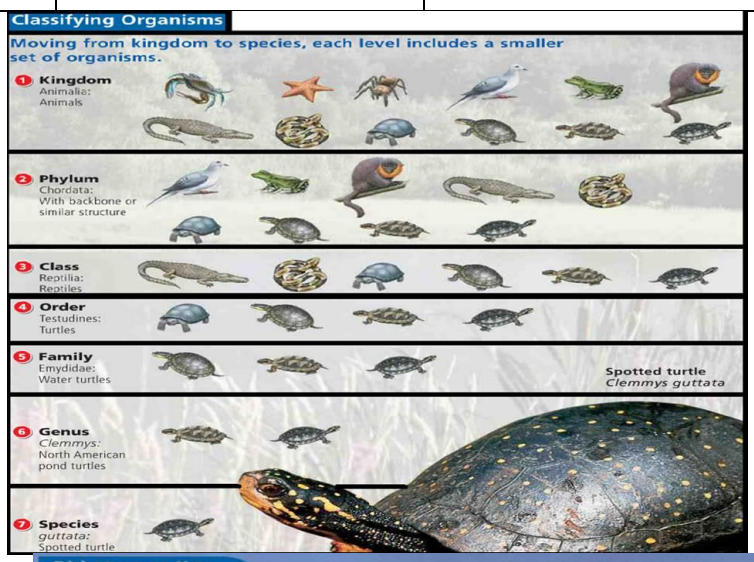
Animal	Vertebrate or Invertebrate	Endothermic or Ectothermic	Class (FARM B) or (A MESS)
Skunk			
Salamander			
Sea Turtle			
Slug			
Star Fish			
Earthworm			
Fruit Bat			
Shark			
Manatee			
Ostrich			

CLASSIFICATION

Classification of Organisms

Taxonomists- scientists who group organisms.

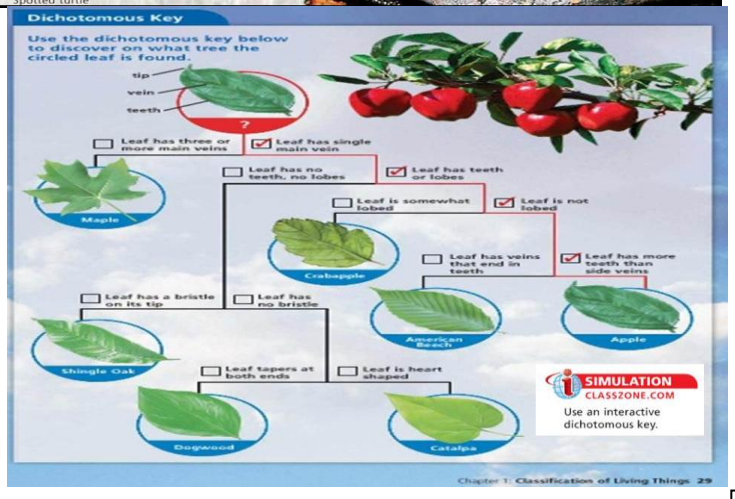
KINGDOM
PHYLUM
CLASS
ORDER
FAMILY
GENUS
SPECIES



Clemmys guttata

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

Felis catus



Animals

All animals:
_____ their internal conditions, rep_____, move, obtain _____ and _____ for energy, are multi_____, and are _____trophs (hunter gatherers!)

Vertebrates: "Many R Big Furry Animals!"
-have _____skeletons (a backbone inside of their body
-lungs or _____ to breathe
-blood
-protective _____ covering
-legs, _____ or _____ to move
-nervous system with a _____

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)
  - If hot, can cool off by _____, panting, or moving locations
  - _____ more often because maintaining the correct temperature takes more _____
- **ECtothermic**- ecto means _____ so the body temperature of the animal changes with its outside _____ (_____ blooded
  - Must gain _____ to perform activities
  - Too Cold? Will move _____ but can lay in sun or move to a warmer location to warm up
  - Too Hot? Can _____ in the ground to cool off.

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

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 urchins

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

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

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

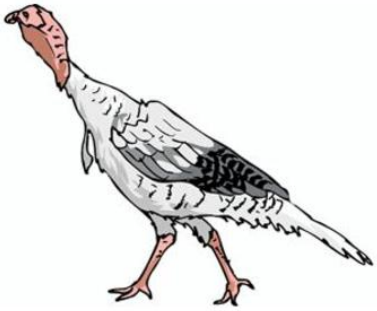

Flamingo


Owl

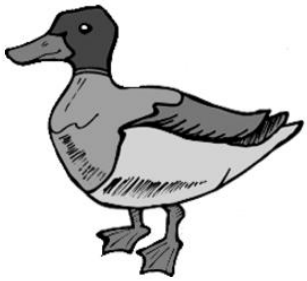
Bird Beaks and Feet

Bluebird

Pheasant



Duck



Eagle

Sparrow

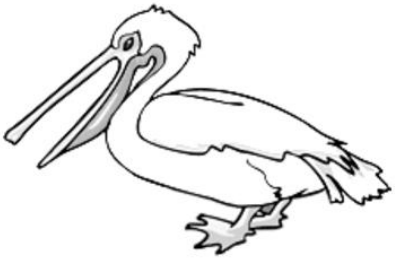
Flamingo

Heron

Kingfisher

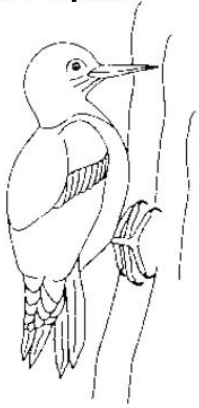
Owl

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			*shrimp*	
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)

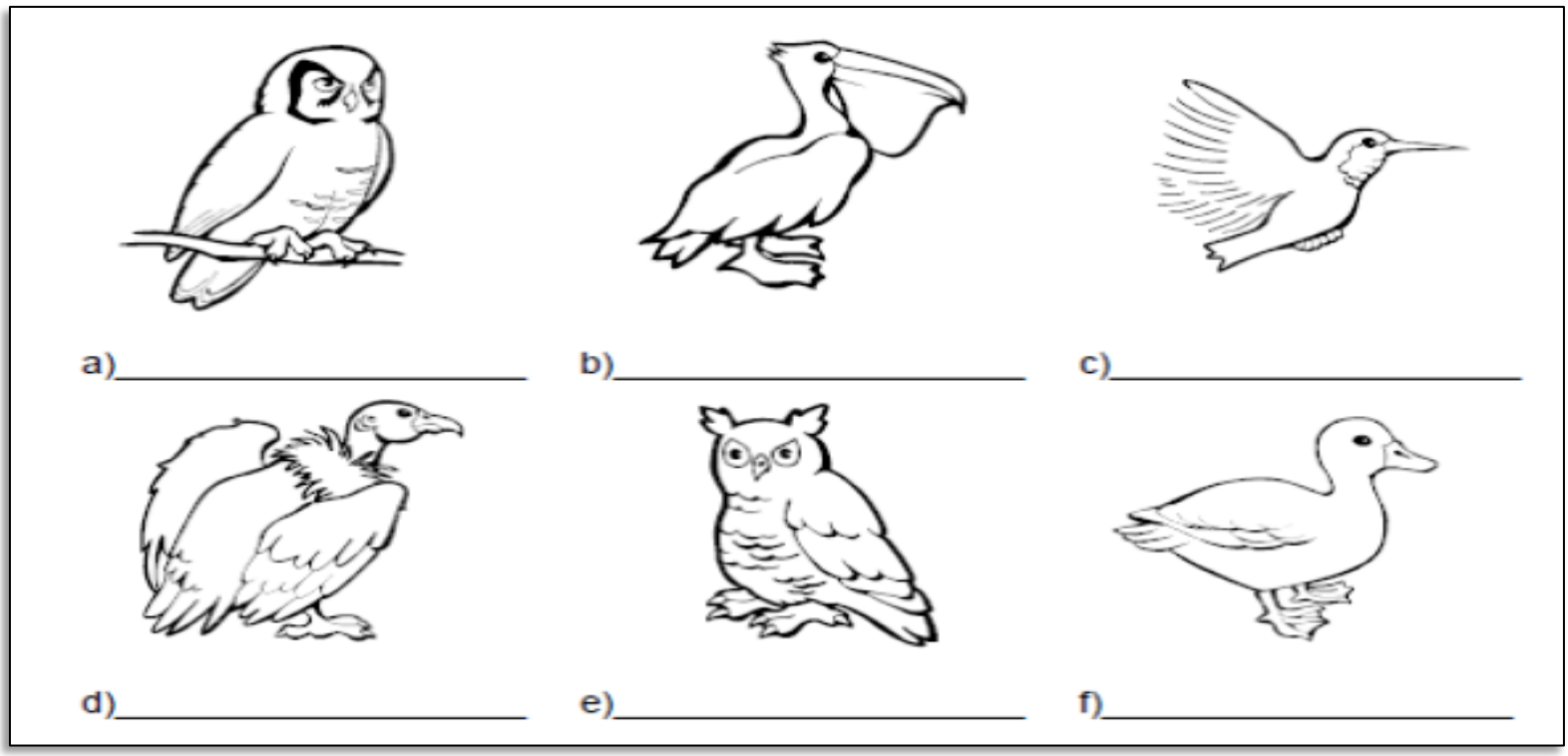
2. There are exceptions! The secretary bird is well known for its snake hunting skills. What do you think its long legs are used for?

Loon

ANIMAL DICHOTOMOUS KEY ACTIVITIES

6-1.3 DICHOTOMOUS KEYS

Use the key to determine the identity of the birds.



1. **Does this bird have talons (sharp claws)? If YES, go to 2. If NO, go to 5.**
2. **Does this bird have ear tufts (clump of feathers near ears)? If YES, it is a SCREECH OWL. If NO, go to 3.**
3. **Does this bird have a featherless head? If YES, it is a vulture. If NO, go to 4.**
4. **Does this bird have bar-like markings on its chest? If YES, it is a BARRED OWL. If NO, go to 1.**
5. **Does this bird have a long, pointed beak? If YES, for to 6. If NO, go to 7.**
6. **Does this bird have a straight beak? If YES, it is a HUMMING BIRD. If NO, go to 7.**
7. **Does this bird have webbed feet? If YES, go to 8. If NO, go to 5.**
8. **Does this bird have a throat pouch? If YES, it is a PELICAN. If NO, go to 9.**
9. **Does this bird have a short, rounded beak? If YES, it is a DUCK. If NO, go to 1.**

ALIEN DICHOTOMOUS KEY

1a	Alien has one eye	**Shrekius monoculus**
1b	Alien has two eyes	Go to 2
2a	Alien has green skin	Go to 3
2b	Alien does not have green skin	Go to 7
3a	Alien has shrek-like ears	**Shrekius dioculus**
3b	Alien does not have shrek-like ears	Go to 4
4a	Alien has oval shaped head	Go to 5
4b	Alien has giant bubble-shaped head	Go to 6
5a	Alien has plain shaped cheeks	**Greenius plaincheekius**
5b	Alien has rectangular shaped on cheeks	**Greenius rectangucheekius**
6a	Alien has no hair	**Baldius Owlius**
6b	Alien has lots of hair	**Furius Owlius**
7a	Alien has blue skin	Go to 8
7b	Alien does not have blue skin	Go to 13
8a	Alien has light blue skin	Go to 9
8b	Alien has dark blue skin	Go to 11
9a	Alien has small head	Go to 10
9b	Alien has giant bubble-shaped head	**Giganticus Cabezius**
10a	Alien has oval-shaped head	**Tinius Cabaezius**
10b	Alien has non-oval-shaped head	Go to 12
11a	Alien has eyes spaced far apart	**Wide-eyed Freekius**
11b	Alien has eyes placed close together	**Close-eyed Freekius**
12a	Alien has one distinct eyebrow	**Weirdo Unibrowus**
12b	Alien has two distinct eyebrows	**Weirdo Doublebrowus**
13a	Alien has yellow skin	Go to 14
13b	Alien has non-yellow skin	Go to 15
14a	Alien has eyes at the top of face	**Higheyed Creepazoid**
14b	Alien has eyes at bottom of face	**Loweyed Creepazoid**
15a	Alien has pink skin	Go to 16
15b	Alien has purple skin	Go to 17
16a	Alien has large ears	**Longia Elephantella**
16b	Alien has small ears	**Petita Elephantella**
17a	Alien has slender-shaped pupils	**Purple Cateyezius**
17b	Alien has large, round shaped pupils	**Purple doeyesiuz**

Alien Identity	
1	
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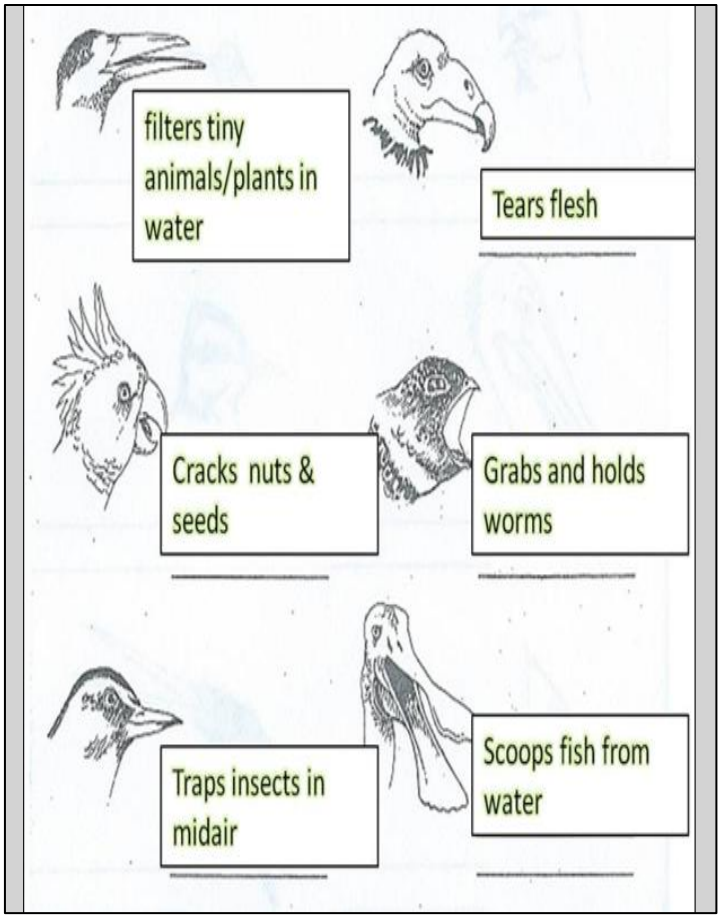

Shape of Bird Foot	Type of Bird Foot	Adaptation and Lifestyle
	Climbing	Feet like these help birds, like woodpeckers, climb trees. Notice the sharp nails for digging into the wood, and the back toes so that the bird doesn't topple backward.
	Swimming	Webbed feet help birds, like ducks, paddle through 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 *talons* 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.