

Warm Up
Copy in Journal

Animal

Characteristics

#1

Characteristic
#1

- **Multicellular** (more than one cell)

Characteristic
#2

- **Keep Internal Conditions in Balance**(obtain constant body temperature/heat up/cool down)

Characteristic
#3

- **Breathing** (obtain oxygen for energy)
- **Heterotrophs** (gather food from plants or other animals for energy)

Characteristic
#4

- **Movement** (use body structures to move/flee)

Characteristic
#5

- **Reproduce**

Animal Observations

Animal Name	Draw it	Invertebrate or Vertebrate	Qualitative Observation •Color •Shape •Five senses	Quantitative Observation (Numbers) •#Eyes? •#Legs?
Goldfish				
Crayfish				
Crickets				
Tadpoles				
Snails				
Bess Beetles				
Earthworms				

Animal Heterotroph Chant

Hunter, gatherer, predator,
prey, going to Food Lion to
get my food today!

***REMEMBER**

Autotroph: Plants

Make their own food through photosynthesis
(sugar production).

Animals can be divided into 2 major categories: animals without backbones (**invertebrates**) and animals with backbones (**vertebrates**).

Copy in your journal:

You are walking in the woods when you spot an animal you have never seen before. How would you figure out which phylum or class it belongs to?

- 1. Which kind of animal is born in water but lives on land as an adult?
a. reptile B. mammal C. amphibian D. fish**
- 2. Which animals have lightweight, hollow bones?
a. reptile B. birds C. fish D. mollusks**
- 3. Which group of animals are endothermic vertebrates?
a. fish B. amphibian C. mammals D. reptiles**
- 4. What does it mean to be an invertebrate?
a. To have a backbone B. to live in water
C. to have no backbone D. to be able to fly**

Dichotomous Key Practice

CANDY DICHOTOMOUS KEY

1a	The candy is hard	Go to 2
1b	The candy is not hard	Go to 3
2a	The candy is on a stick	Lollius poppius
2b	The candy is not on a stick	Redstipium mintium
3a	The candy is long and thin	Go to 4
3b	The candy is not long and thin	Go to 5
4a	The candy is made of chocolate	Snickerium chocolicious
4b	The candy is not made of chocolate	Bubblicious gummius
5a	The candy is triangle shaped	Candius cornius
5b	The candy is not triangle shaped	Gummium bearius

1.



7.



2.



3.



4.



5.



#5

Copy in your journal:

- 1. What is a stimulus?**
 - a. the reaction you have when a car goes speeding by
 - B. a change in your environment that causes you to react**
 - C. an automatic behavior that you cannot control
 - D. the environment around you at a given moment

- 2. How do dogs respond to heat on a summer day?**
 - a. by lying in a puddle
 - B. by hissing**
 - C. by panting
 - D. by yawning**

- 3. Which of the following is an internal stimulus?**
 - a. a piece of dirt getting in your eye
 - B. bright sunlight**
 - C. the sound of a car horn
 - D. a feeling of hunger

- 4. Which of the following is a response?**
 - a. A horse swishing its tail at a fly
 - B. a loud clap of thunder**
 - C. a puddle drying up
 - D. a seed being planted

Animals can respond to change.

Copy in your journal:

1. What is a learned behavior?

- A. peacocks courting**
- B. a robin building a nest**
- C. a lion hunting**
- D. the turtle running to the ocean**

2. What is an instinct?

- A. a learned behavior**
- B. grouping to gain protection**
- C. something taught to an animal**
- D. a behavior an animal does not need to learn**

3. What kind of behavior is using language?

- a. instinct**
- B. learned behavior**
- C. inherited behavior**
- D. a imprinting**

4. What is an inherited behavior?

- a. A baby bird bobbing its head for food**
- B. a lion hunting**
- C. a dog doing tricks**
- D. a disliking the taste of lima beans**

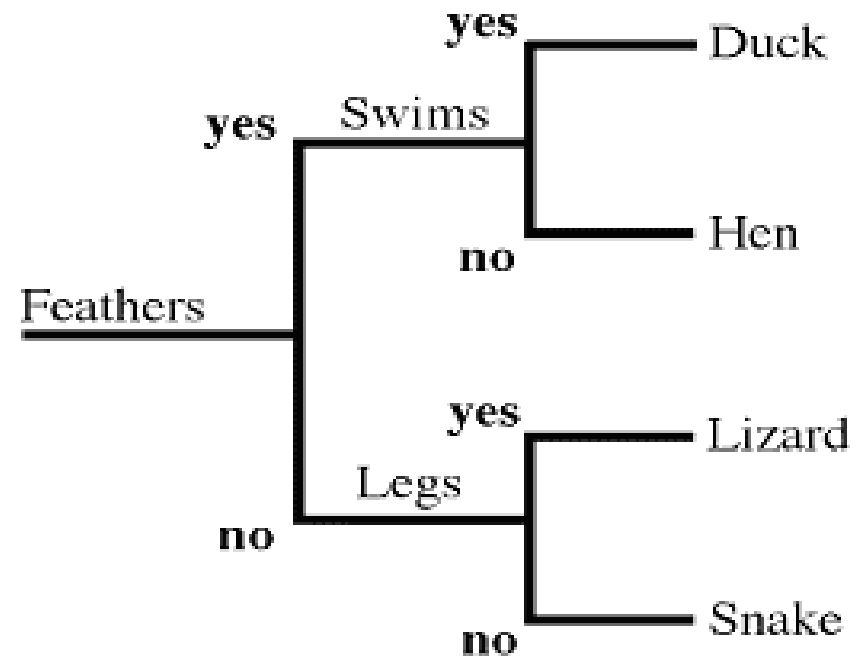
Oblong means oval shaped.

A *dichotomous key* is a special identification key that uses a series of paired characteristics that leads to the identification of an organism, object, or material.

Always begin with a choice from the first pair of characteristics.

At the end of each characteristic is either the name of the organism, object, or material or directions to go to another step. Keep following the choices until the identity is determined.

Once the identity is determined, the physical characteristics can be identified.



Example of a Dichotomous Key

WARM UP

1. _____ obtain their food and eliminate wastes through a central cavity.
2. _____ are the simplest organisms with a true nervous system and blood contained in vessels.
3. _____ have *arms* that extend from the middle body outwards. They have tube feet that take in oxygen from the water and spines.
4. _____ have soft bodies; most have a thick muscular foot for movement or to open and close their shells.
5. _____ have jointed legs, segmented bodies, and some have wings.

1. _____ and _____ maintain a nearly constant internal temperature in any environment.
2. _____, _____, and _____ have an internal body temperature that changes with environment.

3. Why do you think the following statement is true?

If it is cold outside, ectothermic animals move very slow. Some animals bask in the sun (lizards, snakes) or move to a warmer area (fish) before they can move about to hunt for food.

Vertebrate or Invertebrate?



1. _____



2. _____



3. _____



4. _____



5. _____



6. _____



7. _____



8. _____



9. _____



10. _____

#11

Warm Up

Put the type of animals under the correct classification.

Invertebrates

Vertebrates

cnidarians segmented worms fish sponges
echinoderms mollusks arthropods amphibian
reptiles birds mammals

What are the characteristics that separate living things from non-living things?

Warm Up Compare & Contrast

A. birds

D. worms

G. sponges

J. arthropods

B. cnidarians

E. echinoderms

H. fishes

K. mollusks

C. mammals

F. reptiles

I. amphibians

Invertebrates

Vertebrates

Warm Up

Make a wheel diagram with these terms: Which word should go in the center?

amphibians

most are fish

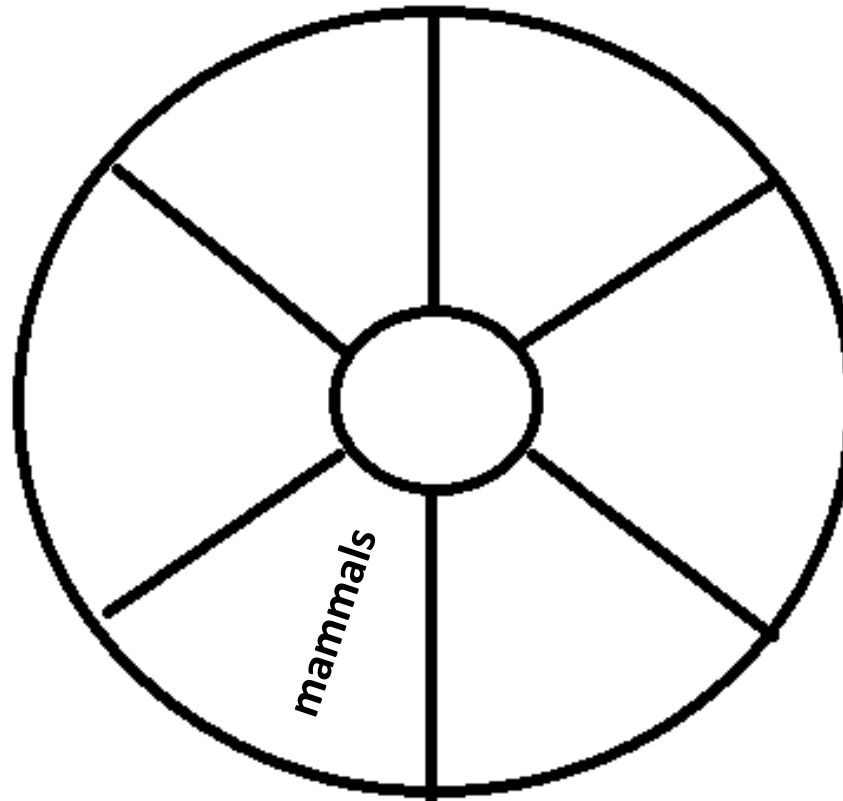
skeleton with backbone

reptiles

mammals

birds

vertebrates



Copy the descriptions of the ARTHROPODS.

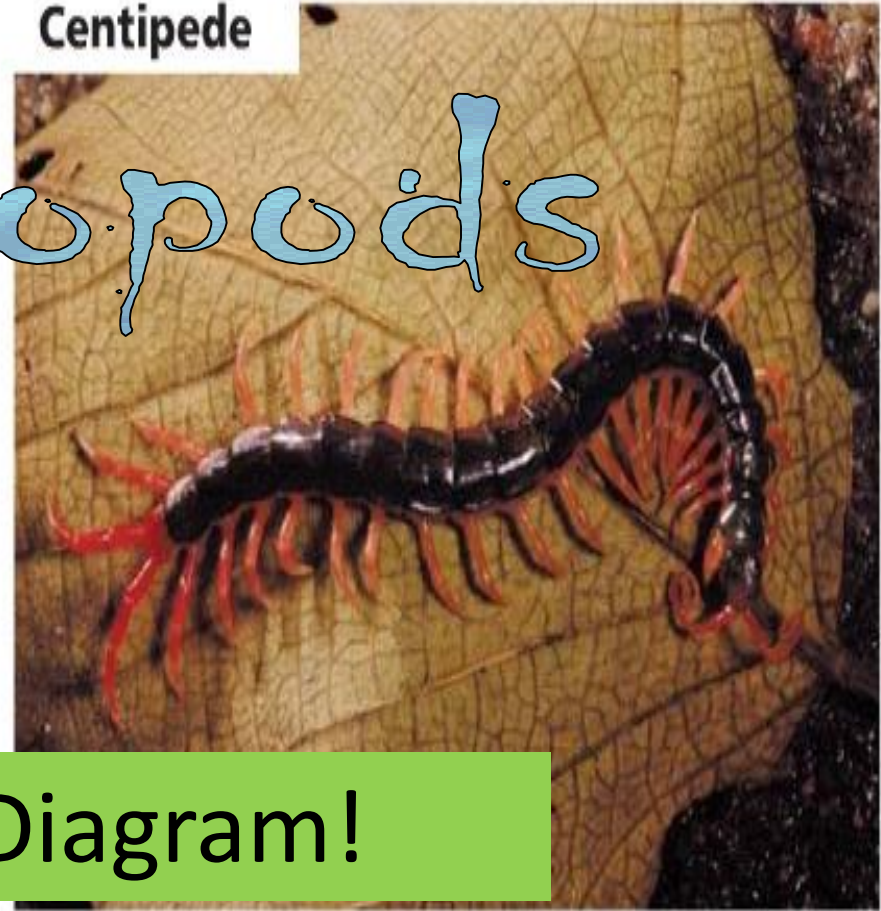
ARTHROPOD DESCRIPTIONS

Insects	Arachnids	Crustaceans
<ul style="list-style-type: none">•3 body segments•3 pairs of legs•1 pair of antennae•Live on land	<ul style="list-style-type: none">•2 body segments•4 pairs of legs•No antennae•Most live on land	<ul style="list-style-type: none">•Most have 2 body segments•Most have 5 pairs of legs•2 pair of antennae•Most live in water
<p><u>Examples:</u> Beetles, bees, wasps, ants & butterflies</p>	<p><u>Examples:</u> spiders, mites, scorpions, & ticks</p>	<p><u>Examples:</u> Shrimp, crab, lobster, barnacles, pill bugs</p>

Millipede



Centipede

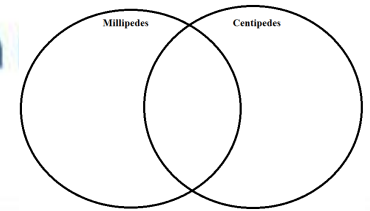


Arthropods

Make a Venn Diagram!

READING
VISUALS

COMPARE AND CONTRAST With their long segmented bodies, a millipede and a centipede look very similar. How are they different?



Millipedes and centipedes are arthropods.

#16

Arthropods

Millipedes

Centipedes



Warm Up

Identify the class of the following

1.



nals.

4.



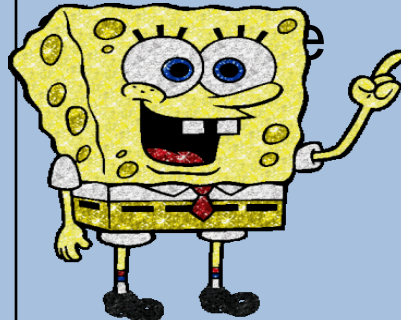
2.



5.



3.



6.



Copy Chart to View the Video Clips of Odd Creatures

Creature	Snail Zombies	Hagfish	Sea Lamprey
•Web address	• http://video.nationalgeographic.com/video/animals/invertebrates-animals/other-invertebrates/snail_zombies/	• http://www.youtube.com/watch?v=bqk0mnMgwUQ	• http://www.youtube.com/watch?v=lgrOK_831DY
Make this chart in your notebook and write notes about what you see while we watch the videos together.			

Warm Up

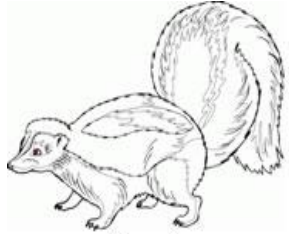
1. Most animals on earth can be classified as _____.
 - A. vertebrates
 - B. invertebrates
 - C. bacteria
 - D. mammals
2. How do sponges differ from humans?
 - A. They do not have tissues.
 - B. They are not multicellular
 - C. Their cells possess cell walls.
 - D. They are members of the Kingdom Animalia.
3. Which animal is the most complex?
 - A. sea anemone
 - B. earthworm
 - C. sponge
 - D. snail

Animals can be divided into 2 major categories: animals without backbones (**invertebrates**) and animals with backbones (**vertebrates**).

Discussion Questions:

1. How do mollusk move?
 - a. using tube feet
 - B. using a muscular foot
 - C. fins for swimming
 - D. the do not move
2. Which animal lassos its prey and paralyzes it with stinging cells?
 - a. sponge
 - B. lobster
 - C. jellyfish
 - D. fish
3. How do sponges obtain food?
 - a. grab it with sharp teeth
 - B. pry it apart with tube feet
 - C. put it in their mouth with jointed appendages
 - D. filter it from the water
4. Which is an example of camouflage?
 - a. All water buffalo look alike
 - B. an Io Moth has spots that look like the eyes of an owl
 - C. A male cardinal is bright red, and the female cardinal is pale red
 - D. A leafy sea dragon has appendages that look like the plants where it hides

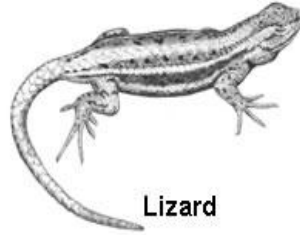
Warm Up



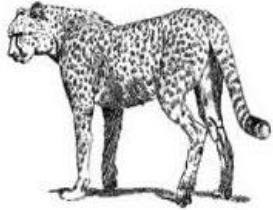
Skunk



Bat



Lizard



Cheetah



Elephant



Snake

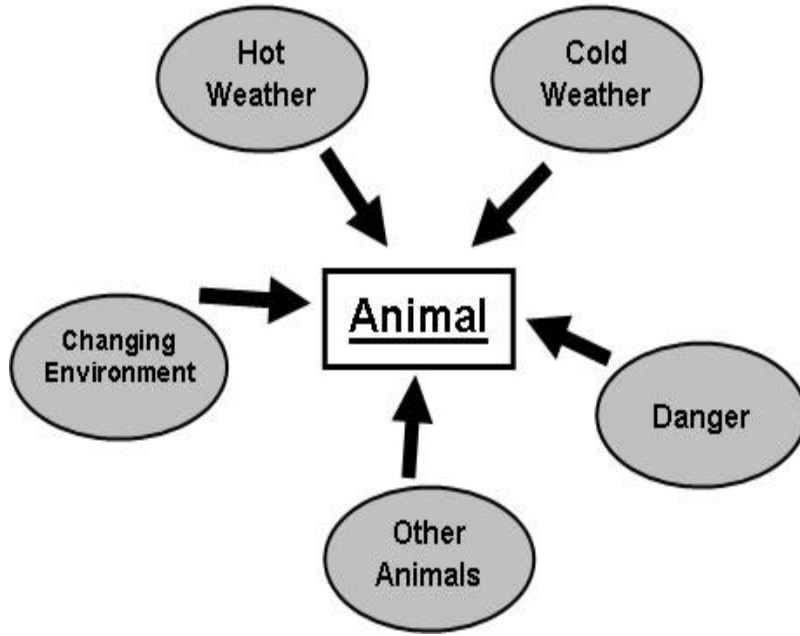
2. Many lizards can change color to match their surroundings. Which feature on another animal serves the same purpose?
- the large tusks of an elephant
 - the spotted skin of a leopard
 - the wide wings of a bat
 - the foul smell of a skunk

1. A bat is the only animal shown above that can fly. This ability helps it to do which of the following?
- live in dark places
 - hide from predators.
 - flee from its enemies
 - hang upside down

3. As a defense mechanism, the skunk above will release a very foul odor. This is similar to the snake:
- hibernating during the winter.
 - releasing poison when it bites.
 - shedding its skin.
 - unhinging its jaw to eat.

Warm Up

Outside Stimuli



3. Which of the following behaviors in an animal would be prompted by the presence of other animals of the same species?
 - a. migration
 - b. shedding
 - c. hibernation
 - d. courtship
1. Hibernation is a response to which of the following environmental stimuli?
 - a. danger
 - b. hot weather
 - c. other animals
 - d. cold weather
2. In some animals, migration is a behavioral response to cold weather. Why is this response helpful to the animal?
 - a. it moves them to a warmer area where there are fewer predators
 - b. it moves them to a colder area where food is more abundant
 - c. it moves them to a colder area where there are fewer predators
 - d. it moves them to a warmer area where food is more abundant
4. Which of the following stimuli will prompt a bee to use its stinger?
 - a. danger
 - b. lack of food
 - c. a changing environment
 - d. an injury

Warm Up

What are some of the similarities and differences in learned and inherited behavior?

LEARNED BEHAVIOR	INHERITED BEHAVIOR

Warm Up

Fill in the blanks:

- 1. As a result of cold winter weather (stimulus) some animals will _____.**
- 2. The movement of animals from one place to another in response to seasonal changes is called _____.**
- 3. How are terms like camouflage, smells, stingers, ejections, mimicry, and grouping similar?**

Warm Up

Fill in the blanks.

1. _____ is an activity or action ,in response to changes in the environment.
2. _____ behavior that is the result of direct observation or experience.
3. _____ behavior that is passed from parent to offspring at birth, the animal is born knowing this behavior.

WORD BANK

inherited behavior

behavior

learned behavior

Warm Up

Fill in the blanks.

1. _____ behavior in which newborn animals recognize the first moving object.
2. _____ behavior in which an animal learns that a stimulus leads to good or bad results.
3. Give some examples of behaviors that animals are born knowing how to do.

Beak Bingo

Can you match the beak with the food it catches?

① _____



A.

② _____



C.

③ _____



④ _____



B.



D.

Warm Up

- 1. What happens to the temperature of a snake that sits in the sun on a warm day?**
- 2. What happens to the temperature of a scientist who goes to the North Pole?**
- 3. Create your own dichotomous key for these animals below:**



WARM UP

1. _____ animals must gain heat to perform internal activities like digestion.
2. If the environment is cold, ectothermic animals become _____ moving and _____.
3. Cold blooded animals don't have to eat as often when the temperature is _____.
4. When the temperature is too hot, ectothermic animals need to find a _____ temperature.

Endothermic (mouse)	Ectothermic (lizard)

WARM UP

Compare and contrast the amounts of food endothermic and ectothermic animals must eat.

Warm Up

Responses to Environment

Response	Stimulus (Why?)	Animal Example
Shedding		
	To get rid of excess body heat	Humans
Panting		
	Mammals reaction to increased heat	Horses
Blinking		
	To find or store nutrition in the form of fat or blubber	Walruses

Warm Up

A "Hot Dog"



1. Aside from panting, which of the following is a natural physical response that is intended to keep a dog from getting overheated?
 - a. laying down in the shade
 - b. jumping in a lake
 - c. shedding its fur
 - d. going to sleep

2. The dog in the picture is trying to cool off by panting. This response is similar to when a human does what?
 - a. shivers
 - b. sweats
 - c. snores
 - d. sneezes

3. Which of the following responses in a dog serves the opposite purpose as panting?
 - a. stretching
 - b. shedding
 - c. growling
 - d. shivering

Warm Up

Animal Behaviors

Behavior A — an automatic and instant reaction to some outward stimuli

Behavior B — a natural and sometimes complex behavior that is inherent in an animal

Behavior C — a behavior that develops in response to the availability of food and other resources

Behavior D — a behavior that develops in response to the physical characteristics of the environment

Behavior E — a behavior that develops in response to other organisms in an environment

2 **Behaviors C, D, and E are all examples of:**

- a. **internal stimuli**
- b. **aggressive behaviors**
- c. **inherited behaviors**
- d. **learned behaviors**

4

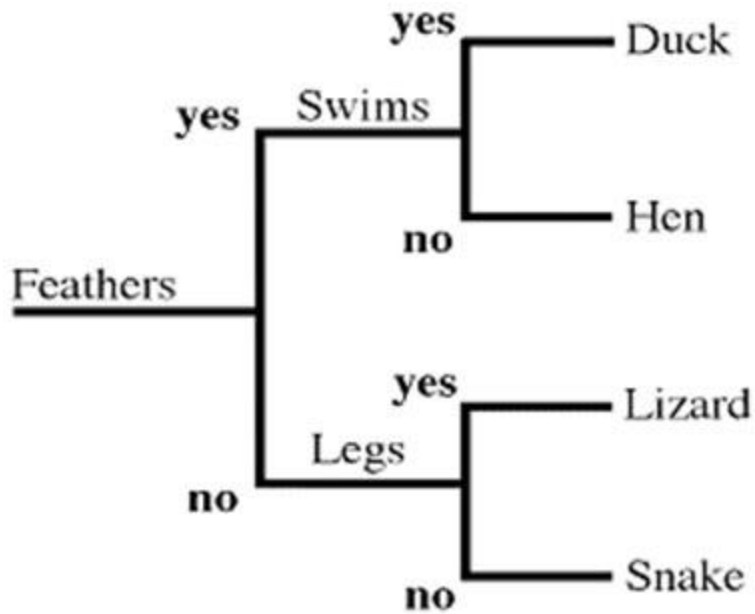
The term "instinct" is described by Behavior B. Which of the following is an example of an animal showing an instinctive behavior?

- a. **a bear sitting in a cave to avoid getting wet during a rain storm**
- b. **a baby boy sneezing when he smells pepper in the air**
- c. **a bird building a perfect nest the first time it tries**
- d. **a dog fetching a stick and bringing it back to the owner**

3 **Which of the following is the term used to describe Behavior A?**

- a. **instinct**
- b. **learned behavior**
- c. **reflex**
- d. **complex behaviors**

Warm Up



1. The chart shown above is which of the following?
- a. cause-and-effect flow chart
 - b. scientific taxonomy
 - c. monotonous key
 - d. dichotomous key

2. The chart shown above is best used for which of the following?

- | | |
|----|--|
| a. | assigning specific characteristics to individual items |
| b. | classifying items into groups based on their characteristics |
| c. | assigning different characteristics to a group of items |
| d. | separating several items with identical characteristics |

3. The above chart is used to identify only four animals. What would be the case if many more animals were involved?
- a. each branch would have to have more options than "Yes" or "No"
 - b. the chart would expand into many more branches
 - c. a different type of chart would need to be used
 - d. the first line of the chart ("Feathers") would have to be changed

Warm Up

Safety Collage



2. Which of the following is the most important characteristic of a rubber glove (Letter B) during a scientific experiment?

- | | |
|----|------------------|
| a. | heat conductor |
| b. | hand cleaner |
| c. | protective layer |
| d. | reliable grip |

1. Which of the following gives the best definition for a "safe experiment"?
- | | |
|----|--|
| a. | an experiment where no dangerous tools or materials are used |
| b. | an experiment where all reasonable steps are taken to avoid dangerous situations |
| c. | an experiment where the observer does not interact with the items being observed |
| d. | an experiment where nobody gets hurt |

3. Which of the following best explains how safety glasses (Letter E) protect the eyes?
- | | |
|----|--|
| a. | they keep smoke and other gases from blocking vision |
| b. | they protect the eye from bright lights and harmful rays |
| c. | they prevent dangerous objects or liquids from touching the eye |
| d. | they allow a person to observe a burning flame at a very close range without being in danger |

WARM UP

A. Kingdom Animalia

B. Bask in Sun

C. Birds

D. Fish

E. Mammals

F. Burrow in cool ground

G. Amphibians

H. Reptiles

I. Temperature Changes

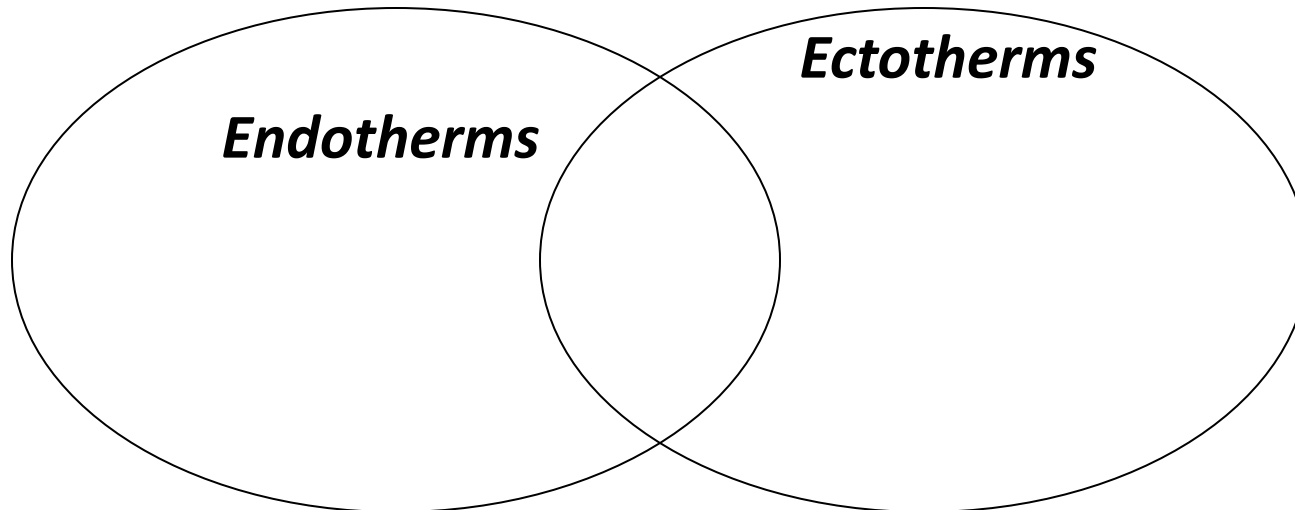
J. Temp Stays the Same

K. Sweat

L. Pant

M. Eat more often

N. Eat less often



Warm Up

List A

Jellyfish
Worms
Sponges
Snails
Spiders
Ants
Lobsters
Grasshoppers

List B

Tigers
Snakes
Penguins
Frogs
Monkeys
Horses
Chickens
Ostriches

1

All animals in List B have a backbone. This means that the list includes any animal that is a:

- a. insect
- b. reptile
- c. shellfish
- d. land animal

2

Breaking the backbone is very serious injury to a vertebrate (such as the animals in List B). This is because which bodily system is largely located along the backbone?

- a. digestive system
- b. reproductive system
- c. central nervous system
- d. cardiovascular system

3. What are the two groups that all animals can be divided into?
Explain the differences.

Warm Up

List B

Tigers
Snakes
Penguins
Frogs
Monkeys
Horses
Chickens
Ostriches

List A

Jellyfish
Worms
Sponges
Snails
Spiders
Ants
Lobsters
Grasshoppers

1. What are the appropriate titles for List A and List B?

- a. Herbivores and Carnivores**
- b. Invertebrates and Vertebrates**
- c. Nocturnal and Diurnal**
- d. Sea Animals and Land Animals**

2. Are all animals autotrophs or heterotrophs? Explain.

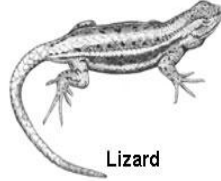
Warm Up



Skunk



Bat



Lizard

1.

A bat is the only animal shown above that can fly. This ability helps it to do which of the following?

- a. live in dark places
- b. hide from predators.
- c. flee from its enemies
- d. hang upside down



Cheetah



Elephant



Snake

2.

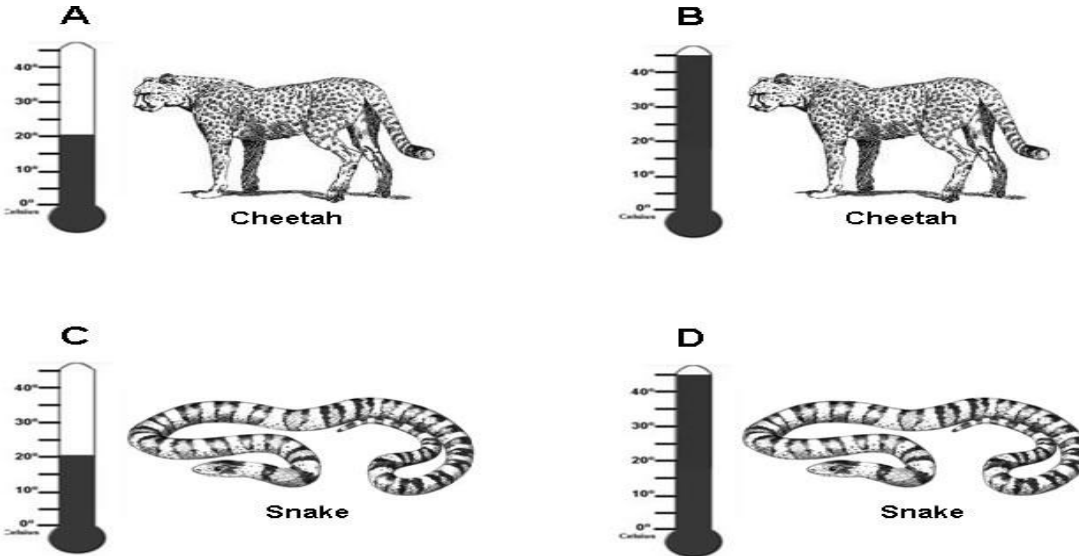
Many lizards can change color to match their surroundings. Which feature on another animal serves the same purpose?

- a. the large tusks of an elephant
- b. the spotted skin of a leopard
- c. the wide wings of a bat
- d. the foul smell of a skunk

3. As a defense mechanism, the skunk above will release a very foul odor. This is similar to the snake:

- a. hibernating during the winter.
- b. releasing poison when it bites.
- c. shedding its skin.
- d. unhinging its jaw to eat.

Warm Up



****Thermometers indicate outside air temperature.*

2. If the temperature outside rose from 20 degrees Celsius to 45 degrees Celsius (as in scenarios C and D), the body temperature of the snake would:
- remain at 20 degrees Celsius.
 - rise to well over 45 degrees Celsius.
 - remain at its permanent body temperature (around 30 degrees Celsius).
 - rise with the outside temperature.

1. Even as the temperature changes, the body temperature of the cheetah remains fairly constant (between 35 and 40 degrees Celsius). This is because the cheetah is what kind of animal?
- ectothermic
 - cold-blooded
 - endothermic
 - invertebrate

3. The term endothermic and ectothermic are used to describe cold-blooded (such as the snake) and warm-blooded animals (such as the cheetah). The root word of these terms is "therm", which means:
- "heat".
 - "heart".
 - "aggressive".
 - "size".

Warm Up

Invertebrates have these characteristics:

No b_____

External skeletons or _____

What are the 3 ways endotherms cool off?

S _____

P _____

C _____ P _____

Warm Up

Ectotherms act very slow_____ and slow_____ when it is cold out.

Foraging_____ is the process of finding food by hunting or fishing or gathering seeds, berries, or roots.

Many animals will hibernate_____ in the form of fat_____ in response to cold weather and drought, such as, bears, penguins, walruses, chipmunks and ants.

Warm Up-

Identify the correct information regarding each animal listed.

Animal	vert/ invert	endo/ ecto	Class
skunk	Vert	Endo	Mammal
salamander			
sea turtle			
slug			
star fish			
earthworm			
bat			
shark			
manatee			
ostrich			

1. Which animal is born in the water, and then lives out of, but near, water in its adult life?
 - A. reptile
 - B. mammal
 - C. amphibian
 - D. fish
2. Which animal has lightweight, hollow bones?
 - A. reptile
 - B. bird
 - C. fish
 - D. mollusk
3. Which animal has radial symmetry?
 - A. reptile
 - B. mollusk
 - C. bird
 - D. echinoderm
4. What does it mean to be an invertebrate?
 - A. you have a backbone
 - B. you live in water
 - C. you have no backbone
 - D. you can fly

1. How do mollusks move?
 - A. tube feet
 - B. muscular foot
 - C. free swimming
 - D. no movement

2. How do sponges obtain food?
 - A. lasso it with a thread
 - B. pry it apart with tube feet
 - C. take it in their mouth with jointed appendages
 - D. filter it from water

3. Which of the following specialized structures aids in locomotion?
 - A. polychaete
 - B. stinging cells
 - C. bristles
 - D. blood

4. Which animal lassos its prey and paralyzes it with stinging cells?
 - A. sponge
 - B. jellyfish
 - C. lobster
 - D. fish

5. Which of the following animal groups have the greatest speed and ease of locomotion due to advanced, specialized structures?
 - A. arthropods
 - B. mollusks
 - C. echinoderms
 - D. amphibians

1. Sponges

2. cnidarians

3. arthropods

4. echinoderms

5. mollusks

6. segmented worms

a. earthworms, leeches, & bristle worms

b. jellyfish

c. lobsters, spiders, mites, ticks, & insects

d. snails, clams, squids, & octopus

e. sea stars, urchins, cucumbers, & sand dollars

f. simplest invertebrate

#48

1. fish

2. amphibians

3. reptiles

4. birds

5. mammals

a. walk or run

b. fly with wings

c. swim, wiggle or walk

d. swim in early life & walk or jump in adult life

e. swim with fins

Adaptations for Flight

This diagram shows some of the adaptations that make flight possible for most birds.

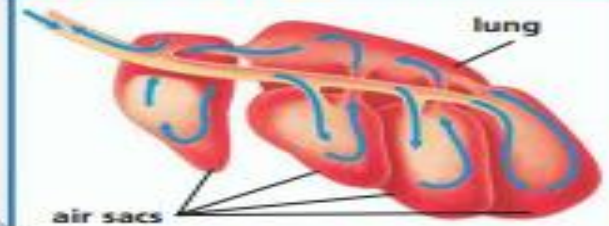
1 Endoskeleton

A bird's skeleton is strong and light. Some bones are fused, or connected without joints.

2 Wings and Feathers

A bird's wings are specialized arm bones that support its flight feathers.

3 Respiratory Structures



A bird's connected system of air sacs and lungs keeps oxygen moving through its body.

4 Hollow Bones



Air fills the inside of a bird's bones.

Warm Up: Draw and label the bird's anatomy.





READING VISUALS

Do you think any one of these adaptations is more important than the rest?

#50

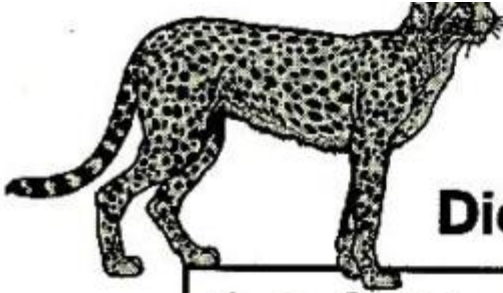
WARMUP

1. What is the correct way to write the scientific name for the spotted turtle?
_____ (p. 27 in text may help you)
2. What can you conclude from this classification chart?

	 1 Tiger	 2 Polar Bear	 3 Mountain Lion	 4 Zebra
Kingdom	Animalia	Animalia	Animalia	Animalia
Phylum	Chordata	Chordata	Chordata	Chordata
Class	Mammalia	Mammalia	Mammalia	Mammalia
Order	Carnivora	Carnivora	Carnivora	Perissodactyla

- A. All of the animals are in the same family
- B. The tiger and the polar bear are in different orders
- C. The tiger and the zebra are in the same family
- D. The zebra is in a different order than the other animals.

WARM UP



Dichotomous Key: Types of Wild Cats

1. a. Solid coat b. Not solid coat	Go to 2. Go to 3.
2. a. Smooth coat, long tail, no mane b. Smooth coat with mane	<i>Puma concolor</i> <i>Panthera leo</i>
3. a. Striped b. Spotted	<i>Panthera tigris</i> <i>Acinoryx jubatus</i>

Name the characteristics of each wild cat:

1. **Puma concolor** _____

2. **Panthera leo** _____

3. **Panthera tigris** _____

4. **Acinoryx jubatus** _____

WARM UP

The chart below shows how animals respond to internal and external stimuli. Describe two different times when your behavior changed due to a stimulus in the environment.

Responses to Stimuli

Animal	Stimulus	Response
Earthworm	Sunlight	Move toward shade
Moth	Candle or porch light	Fly toward light
Fish	Food /hunger	Swim toward it
Dog	Heat	Pant, sweat through foot pads
	Food /hunger	Drool
	Owner walking into the room	Wag tail
Cat	Heat	Pant
	Fear	Hiss and arch back
Horse	Fly landing on skin	Twitch muscle
Human	Particle in eye	Blink
	Cold	Shiver
	Heat	Sweat
	Tiredness	Yawn
	Dust in breathing passages	Sneeze

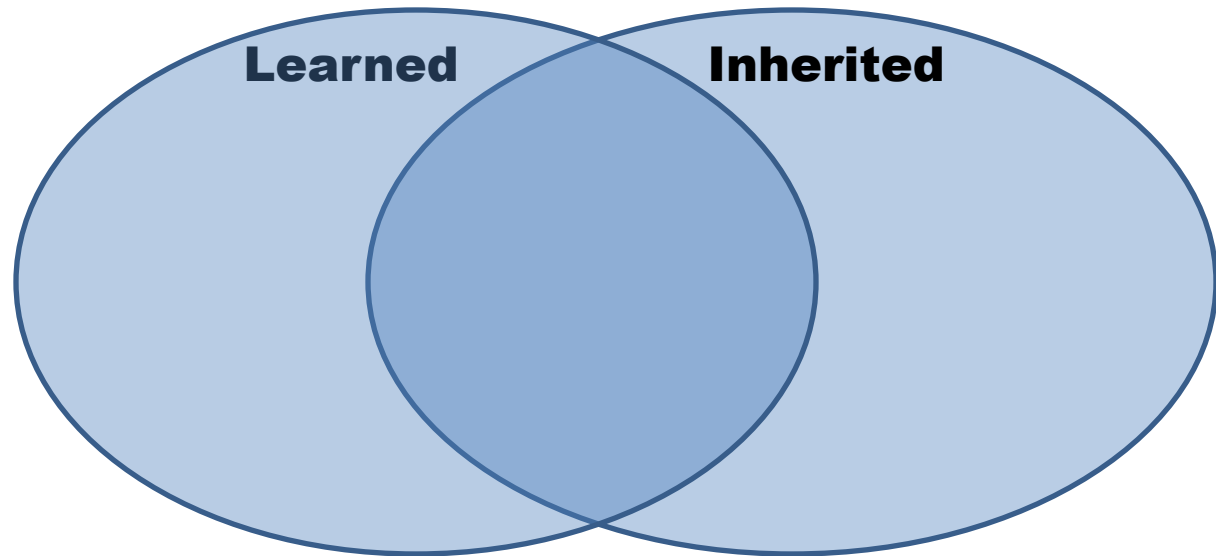
Copy
chart

#53

WARM UP

Place these behaviors in the correct part of the Venn Diagram. Remember that some behaviors are learned in some species and inherited in others. For example, a fish is born knowing how to swim, but humans have to be taught.

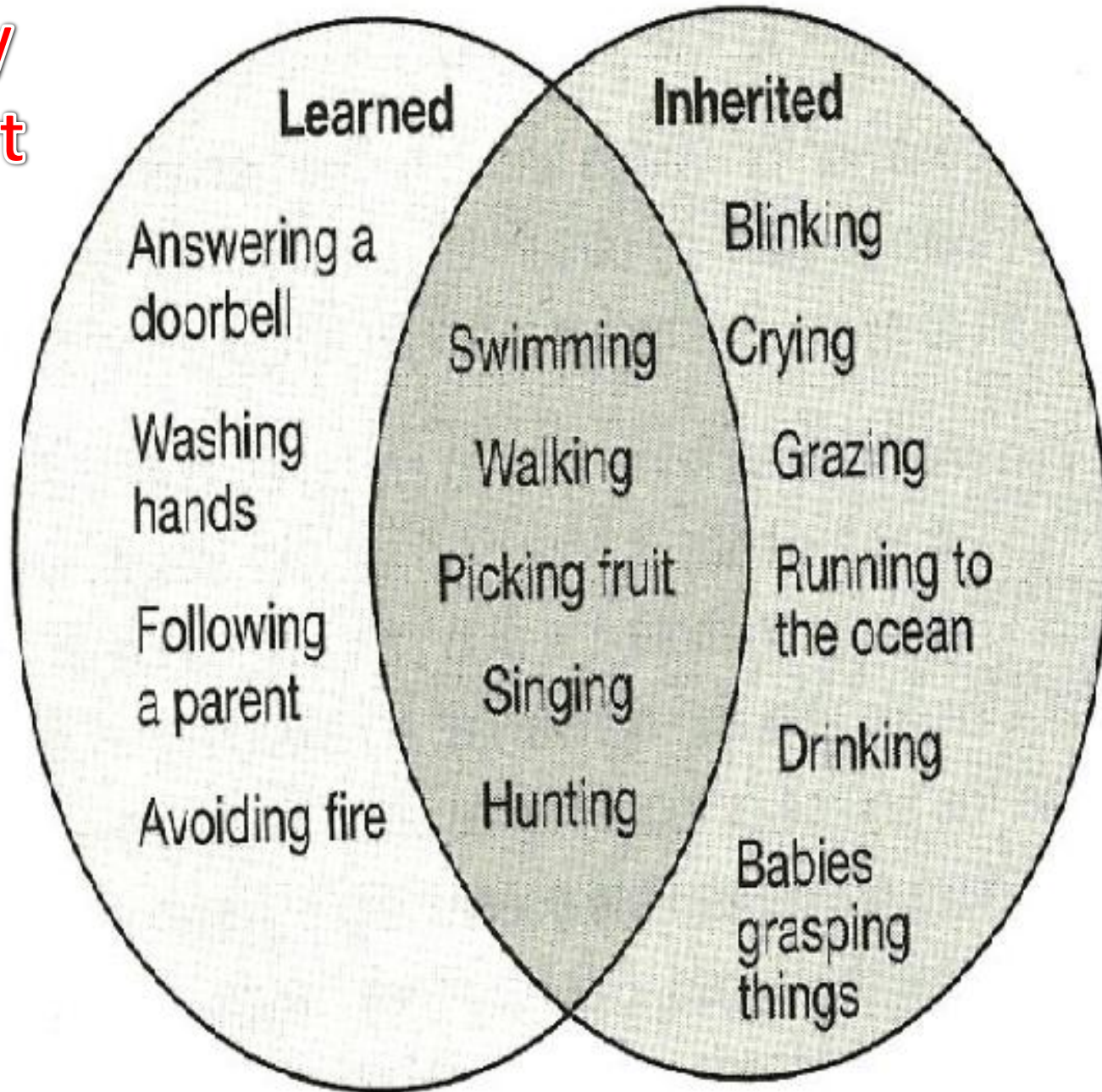
- **Babies grasping things**
- **grazing**
- **avoiding fire**
- **following a parent**
- **crying**
- **drinking**
- **washing hands**
- **running to the ocean**
- **walking**
- **picking fruit**
- **answering a doorbell**
- **swimming**
- **singing**
- **blinking**
- **hunting**



Warm Up

Behavior

Copy
chart



WARM UP

- 1. Which of these is a defensive behavior?**
 - A. Caribou migrating south when it gets cold**
 - B. A tiger hiding in the tall grass when hunting**
 - C. An octopus producing a cloud of black ink**
 - D. A snake hibernating**

- 2. Which of these is an example of an inherited behavior?**
 - A. Parrots speaking English words**
 - B. A dolphin jumping through a hoop**
 - C. A whale swimming**
 - D. A lion hunting in the same area as its mother**

- 3. Which is a characteristic of all animals?**
 - A. Migration**
 - B. Response to stimuli**
 - C. Photosynthesis**
 - D. Sexual reproduction**

WARM UP

The state reptile for South Carolina is the loggerhead turtle. Why do you think it is against the law to use a flashlight on the beach in South Carolina from May to October?

WARM UP

1. _____ is anything an organism does in response to changes in its environment. These actions help it to survive.
2. _____ is a behavior that an animal is taught by its parents or learns through experience.
3. _____ is a behavior in which newborn animals recognize and follow the first moving thing they see.
4. _____ is a learned behavior. Animals learn this because the response keeps having the same results.
5. Inherited behaviors are also called _____.

Internal Stimuli	External Stimuli

WARM UP

Copy the internal and external stimuli and their examples.

Internal stimuli	External stimuli
<p>signals from inside the body to:</p> <ul style="list-style-type: none">•Hunger•Sleepiness•thirst <p>Responses:</p> <ul style="list-style-type: none">•eat•sleep•drink	<p>stimuli from the environment:</p> <ul style="list-style-type: none">•sunlight•heat•cold•seeing other animals•noises <p>Response to these include:</p> <ul style="list-style-type: none">•blinking•food gathering•hibernation•migration•courtship

Behavioral Adaptations in Animals

WHAT BEHAVIORS HELP ANIMALS SURVIVE IN THEIR ENVIRONMENTS?

Animals have a variety of behaviors that help them survive in their environment.

HIBERNATION Animals that hibernate enter a sleeplike state during which breathing and heart rates slow down. Body temperature also goes down. In this state, animals need less food to stay alive. This adaptation helps them survive during winter when food is less plentiful.

ESTIVATION Some animals estivate, a sleeplike state similar to hibernation. The behavior helps the animal survive when it is especially hot and dry. Some desert spiders and rodents, like ground squirrels, estivate in summer. The spadefoot toad can live underground for months or even years, waiting for rain. Other animals go in and out of a sleeplike state each day. They may hide in burrows or under rocks and shrubs during the hottest part of the day. Then they come out at night to search for food.

MIGRATION Many animals migrate, or move from one place to another for different parts of the year. Some animals migrate to escape

Cardinals sing to protect their territory from other cardinals.



winter temperatures and low food supplies. Mammals like caribou, elk, some bats, and whales migrate. So do some fish and insects. Birds like geese fly south in flocks to warmer climates. Other birds fly alone.

TERRITORY A territory is a space that an animal defends, or protects, against other animals of its own kind. An animal like a mockingbird may drive other birds away to protect its nest and young. During breeding season, songbirds defend their territories to make it easier to find mates and food.

Show What You Know

Use a word that describes a behavior to complete each sentence.

1. A chipmunk _____ when it burrows into the ground and sleeps all winter.
2. Humpback whales _____ when they swim to their winter feeding grounds.
3. A tarantula _____ for the hottest part of the day and becomes active at night.
4. A pack of wolves chases away an unfamiliar wolf to defend a _____.

#60

Structural Adaptations in Animals

WHAT STRUCTURES HELP ANIMALS SURVIVE?

Animals also have structural adaptations that help them survive in their environments.

BODY TEMPERATURE All animals must maintain a steady body temperature, including animals that live in extreme environments, such as the arctic, a hot desert, or an ocean. The hairs of a polar bear's fur are hollow to trap air and help insulate, or keep the bear warm. Beneath its fur, the bear's skin is black, which absorbs heat energy. The desert kit fox has large ears filled with blood vessels that release extra heat to the air. Penguins have blubber for insulation, and a gland that produces an oil that they smear over their tightly-packed feathers to keep them waterproof.

KEEPING WATER Desert animals have adaptations for preventing water loss. Desert toads stay buried in moist soil during the hottest part of the day. Scorpions have a hard outer covering. Turkey vultures get their water from the

food they eat. A kangaroo rat has kidneys that take water from urine and return it to the animal's blood. Special organs in its nose capture the water in the air the rat breathes out.

FINDING FOOD Animals must be able to find or capture food. Animals that capture other animals have sharp eyesight. A golden eagle can see a rabbit more than one mile away. It can see the rabbit blink or twitch its nose one-quarter mile away. The eagle's sharp hooked beak and its curved talons help it capture and eat its prey.

PROTECTIVE COLORATION A polar bear's fur reflects light to appear white and blend with ice. A kit fox is brown, like desert sand. Pale colors also absorb less heat. Such protective coloration helps animals blend into their surroundings, making it harder for their enemies to see them. A penguin looks black on top and white on bottom. That makes them almost invisible to predators swimming above or below them.

Draw What You Know

The shape of a bird's beak tells you about its diet. Beneath each picture, write what you think each bird eats.

a.



b.



c.

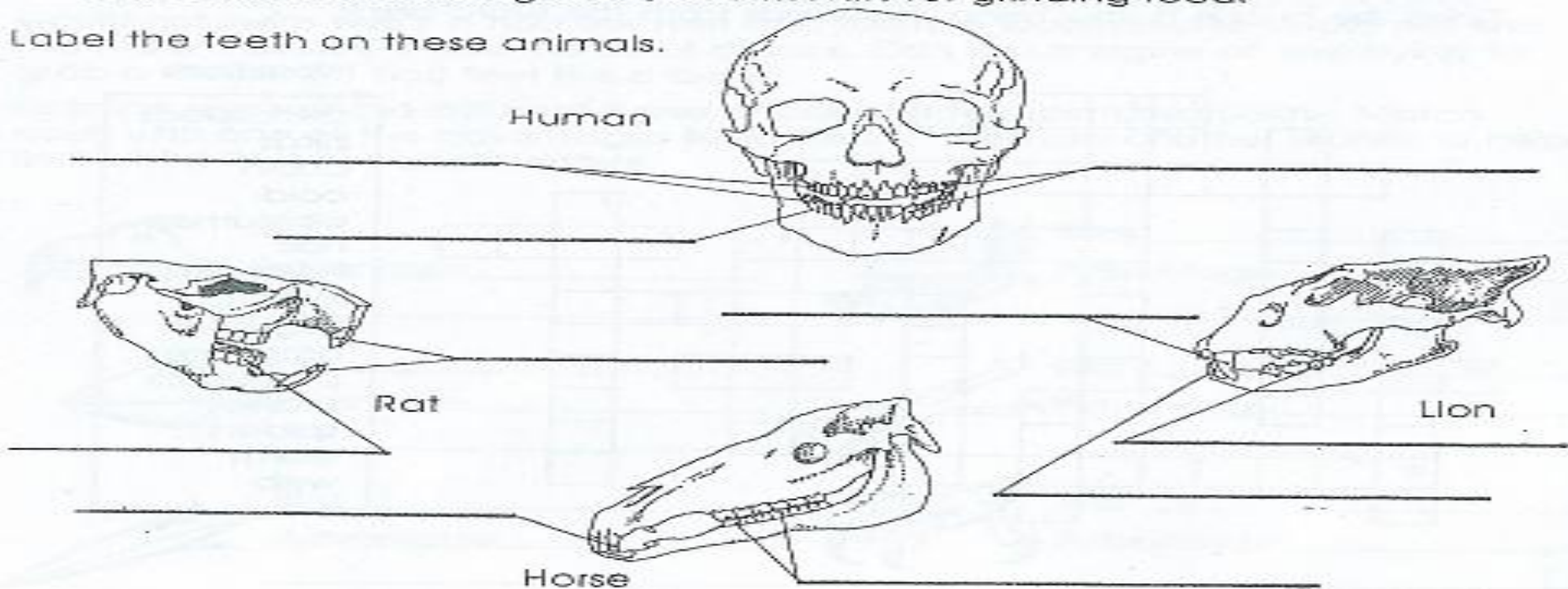


#61

Rippers, Nippers and Grinders Name _____

Most mammals have two or more types of teeth: **incisors** for nipping food like scissors; **canines** for tearing food; and **molars** for grinding food.

Label the teeth on these animals.



Animal	Type of Teeth	Kinds of Food Eaten
Rat		
Lion		
Horse		
Human		

WORD BANK

incisors
grains
vegetables

molars
grasses
dairy products

canines
meats
fruits

#62

Animal Defenses

Name _____

Each of the animals on this page has a special defensive adaptation.

a. Name the animal.

b. Describe its defensive adaptation.



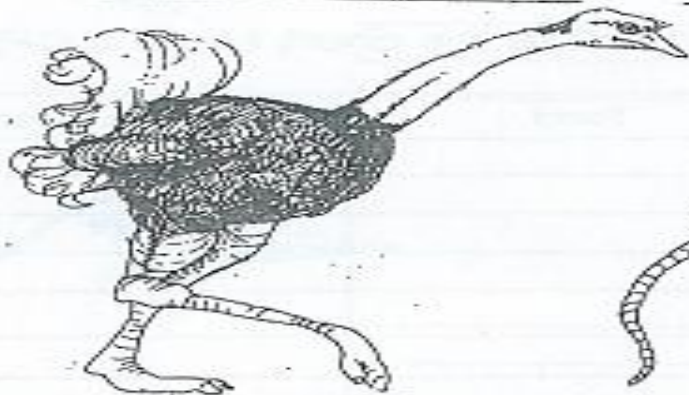
a. _____
b. _____



a. _____
b. _____



a. _____
b. _____



a. _____
b. _____



a. _____
b. _____



a. _____
b. _____

WORD BANK

opossum
ostrich

turtle
skunk

walking stick
porcupine

#63

Animals with a Double Life

Name _____

Amphibians are cold-blooded vertebrates. The word amphibia means to live a double life. Some amphibians live exclusively on land or in the water, while others live in both habitats. Frogs, toads, and salamanders are three of the most common amphibians.

Adult frogs and toads are able to hear you sneak up on them because they have large eardrums, called tympanums.

Salamanders do not have eardrums but sense vibrations through their legs.

Frogs and toads develop from eggs that are laid in the water. The larval forms of the frog and toad are called tadpoles. Salamanders hatch from eggs within the adult.



Use the pictures and information above to complete the chart. Make a (✓) in the correct box or boxes.

	Frog	Toad	Salamander
smooth skin			
bumpy skin			
nostrils			
tympanum			
tail			
strong hind legs			
backbone			
warm-blooded			
cold-blooded			

#64

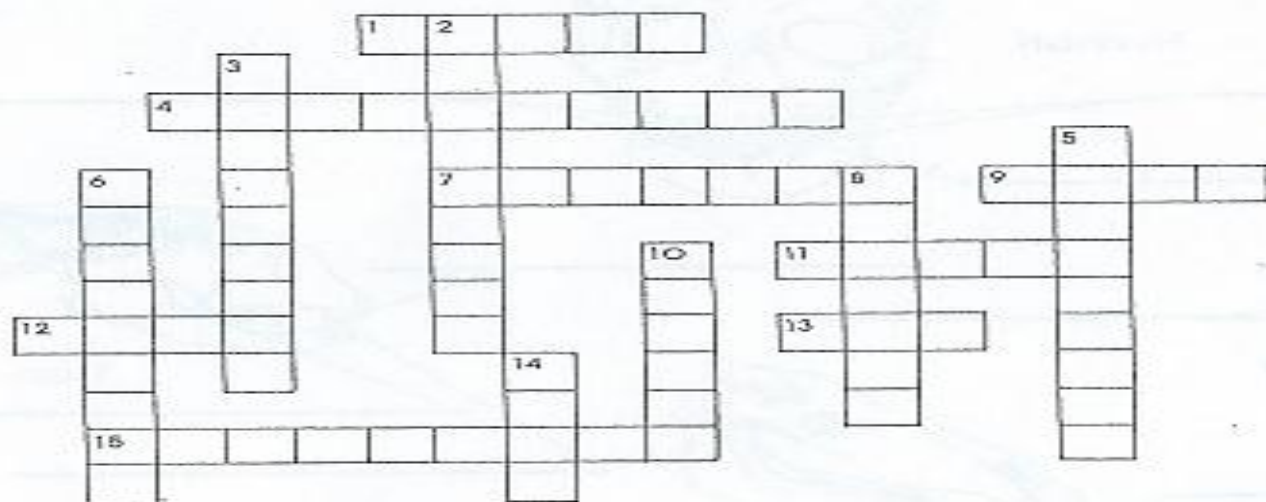
Find Out

Egg-Tadpole-Frog. These are the three stages of a frog's life cycle. What adaptations help the frog get food? What adaptations help the frog breathe in each stage? What adaptations give the frog movement in each stage?

Animal Facts

Name _____

Finish the puzzle below using the words from the word bank.



Word Bank

arthropods
birds
chain
cold
consumers
hair
herbivore
insects
migration
omnivores
producers
scales
spiders
warm
web

Across

1. A series of animals that feed on each other is a food _____.
4. Invertebrates with jointed legs
7. Largest group of invertebrates
9. Reptiles are _____-blooded.
11. Feathered, warm-blooded vertebrates
12. Body covering of mammals
13. Interlocking food chains form a food _____.
15. Organisms that eat both plants and animals

Down

2. Animal that eats only plants
3. Organisms that make their own food
5. Organisms that do not make their own food
6. Seasonal movement of animals
8. Arthropods with eight legs, two body sections, and no antennae
10. Body covering of reptiles
14. Birds and mammals are _____-blooded animals.

Best Foot Forward

Name _____

Like other animals, birds have adaptations that help them survive. A duck would not swim well if it had the feet of a robin. A woodpecker would not find too many insects if it had the bill of a duck. Can you imagine an owl trying to grab a mouse if it had feet like a duck?

Examine each of the different types of bills and feet pictured below. Match each with one of the advantages listed below. Then use another source to help find a bird that has each feature.



Bird _____

Advantage _____



Bird _____

Advantage _____



Bird _____

Advantage _____



Bird _____

Advantage _____



Bird _____

Advantage _____



Bird _____

Advantage _____



Bird _____

Advantage _____



Bird _____

Advantage _____

Advantages (bills)
cracking seeds
straining water for food
tearing flesh
probing for insects

Advantages (feet)
climbing trees
swimming
grabbing onto animals
perching

#66

Something Special

Create your own unique bird. Write a paragraph that describes your bird's habitat, food, enemies, and size. Give your bird a name. Draw a picture of it.

The shape of a bird's bill will often tell what kind of food the bird eats.

Describe the feeding habits of each bird.













WORD BANK

cracks nuts and seeds
 tears flesh
 traps insects in midair
 scoops fish from water

grabs and holds worms
 sweeps back and forth through
 water and filters out tiny plants
 and animals

#67

The shape of a bird's bill can often tell what the bird eats. How do each of these birds use their bills in a special way to eat food?

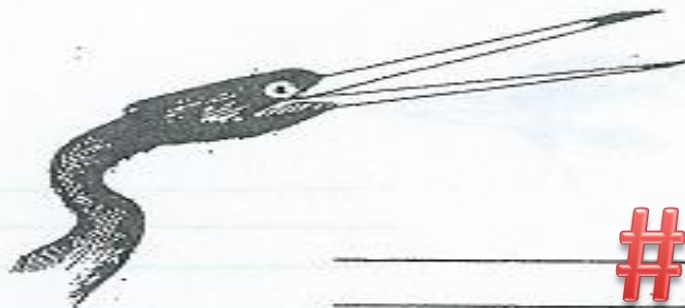












#68

WORD BANK

for pounding holes to find insects
 to tear the flesh of animals
 to scoop large mouthfuls of water and fish

to suck nectar from flowers
 to stab small fish
 to crack open seeds

Feathered Friend's Feet

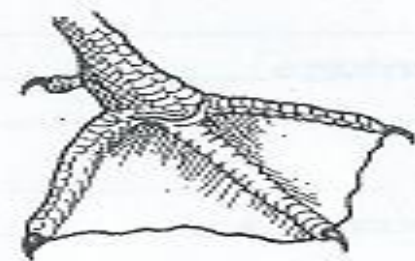
Name _____

A bird's feet can tell you many things about its habits or home. How do each of these birds use their feet in a special way?

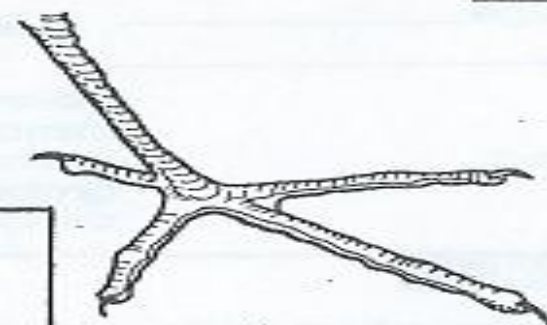








WORD BANK
for perching on branches
for wading in mud
for grasping in order to climb
for swimming
for catching prey



#69

Grouping Animals by Class - Multiple Choice Test

Name: _____ Date: _____ Class: _____

1	A frog belongs to which animal group? A bird B reptile C amphibian D mammal E fish
2	An eagle belongs to which animal group? A bird B reptile C amphibian D mammal E fish
3	A seahorse belongs to which animal group? A bird B reptile C amphibian D mammal E fish
4	A bat belongs to which animal group? A bird B reptile C amphibian D mammal E fish
5	An alligator belongs to which group? A bird B reptile C amphibian D mammal E fish

6	A salamander belongs to which animal group? A bird B reptile C amphibian D mammal E fish
7	A turtle belongs to which animal group? A bird B reptile C amphibian D mammal E fish
8	A dolphin belongs to which animal group? A bird B reptile C amphibian D mammal E fish
9	A pelican belongs to which animal group? A bird B reptile C amphibian D mammal E fish
10	A trout belongs to which animal group? A bird B reptile C amphibian D mammal E fish

Mammal Traits 1 – Multiple Choice Test

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Name: _____ Date: _____ Class: _____

1	Which of the following animals is a mammal? A duck B rabbit C frog D fish E shark
2	Which of the following mammals is not covered with fur/hair? A whale B horse C mouse D monkey E squirrel
3	Which of the following mammals is a marsupial? A rabbit. B kangaroo. C elephant. D human. E beaver.
4	Which of the following animals is the one <u>mammal</u> that lays eggs? A penguin. B alligator. C duck-billed platypus. D monkey.

5	Why do mammals have fur/hair? A To stay warm. B To protect them from sunburn. C To protect them from scratches. D To help them blend in. E All of the above.
6	Which of the following mammals has hairs adapted for defending against predators? A horse B fur seal C mouse D porcupine
7	Mammals have all the following traits, EXCEPT : A warm blooded. B backbone. C hair or fur. D scales.
8	Which of the following is not a mammal? A person B ape C elephant D duck E armadillo

#71

Mammals Traits 2 – Multiple Choice Test

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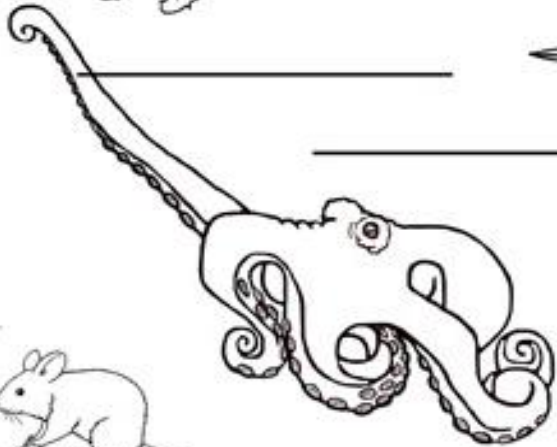
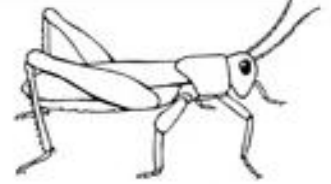
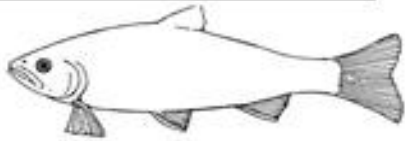
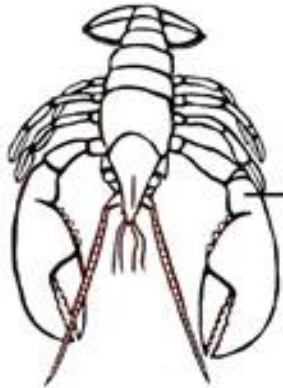
Name: _____ Date: _____ Class: _____

1	<p>Mammals have all the following traits, EXCEPT:</p> <p>A They are covered in body hair/fur (land mammals). B The females have mammary glands. C The females feed their young milk. D They are cold blooded.</p>
2	<p>Which of the following animals is the largest <u>mammal</u>?</p> <p>A ostrich B horse C mouse D great white shark E squirrel</p>
3	<p>Which of the following mammals is a marsupial?</p> <p>A rabbit. B kangaroo. C elephant. D human. E beaver.</p>
4	<p>Which of the animals below is the one <u>mammal</u> that lays eggs?</p> <p>A penguin. B alligator. C duck-billed platypus. D monkey.</p>

5	<p>Some mammals have hair:</p> <p>A to help them stay warm. B to protect them from scratches or sunburn. C to warn off others – dog raising its "hackles". D adapted into a protective tool (porcupine). E all of the above.</p>
6	<p>Some mammals' hair can be used for:</p> <p>A tasting things - like tastebuds. B making noise - like vocal chords. C feeling things - like whiskers. D None of the above</p>
7	<p>Mammals have all the following traits, EXCEPT:</p> <p>A three ear bones for better hearing. B a backbone. C specialized teeth. D feathers.</p>
8	<p>Which of the following animals is not a mammal?</p> <p>A person B ape C elephant D duck E armadillo</p>

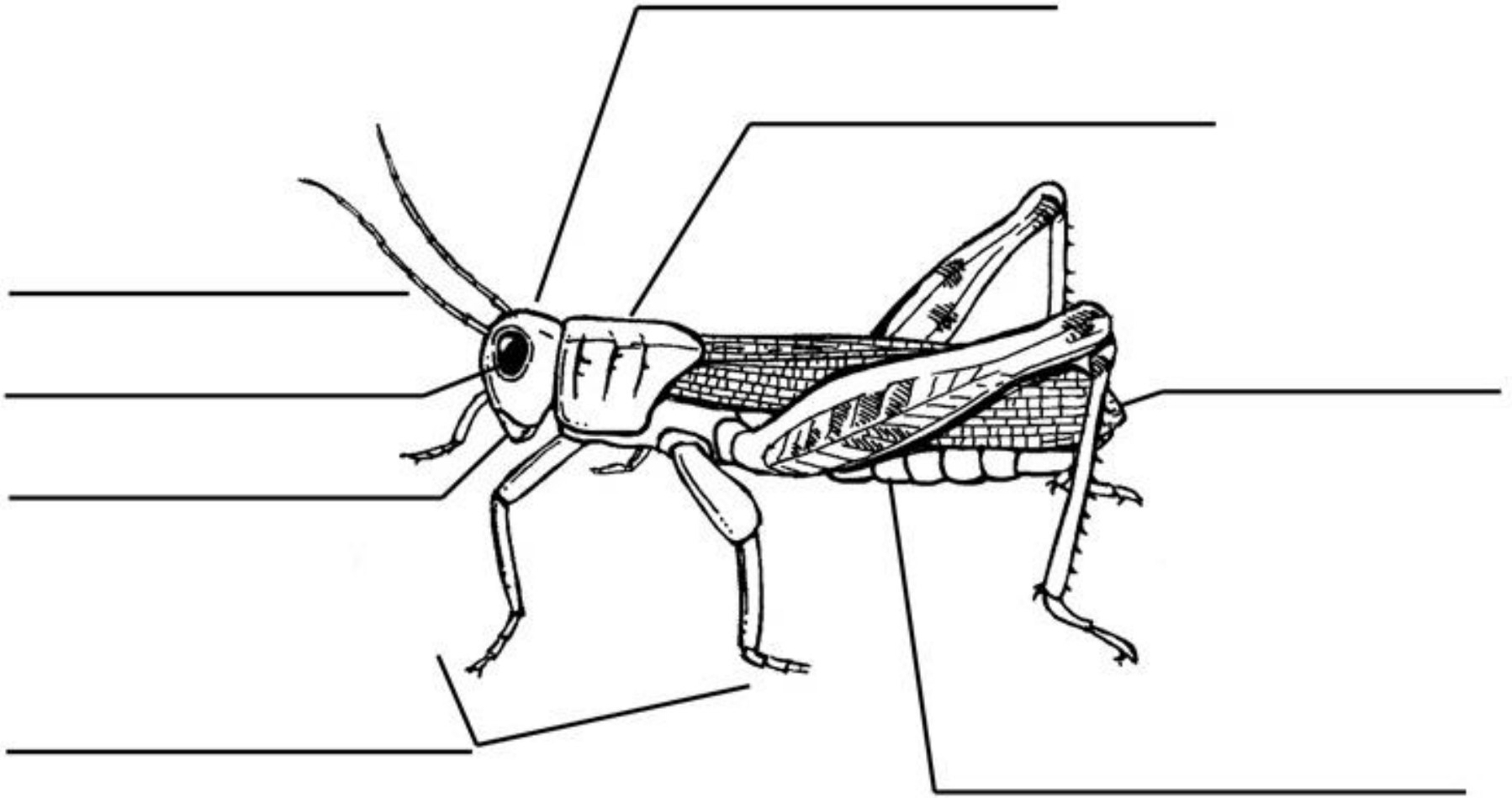
#72

Name the Different Classes from the Animal Kingdom



Label the Parts of an Insect

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#74