



◀ Education Program Packet—5th Grade ▶

Zoo Atlanta Education Programs:

Zoo School Auditorium: Classification Quiz Show

Zoo School Classroom: Animal Kingdom

Zoomobile Outreach: What Vertebrate Am I?

NightCrawlers Overnight: Global Grasslands or Animal Trackers

GEORGIA PERFORMANCE STANDARDS: For program information and Georgia Performance Standards for each program, click http://www.zooatlanta.org/education_school_programs.htm and follow the links to the program(s) you registered for.

Activity Packet

◀ **Subject/Course:** Science and Math

◀ **Grade:** 5th

Activity Packet: Stage 1-Desired Results

Packet Established Goals:

- **S5L1.** Students will classify organisms into groups and relate how they determined the groups with how and why scientists use classification. **a.** Demonstrate how animals are sorted into groups (vertebrate and invertebrate) and how vertebrates are sorted into groups (fish, amphibian, reptile, bird, and mammal).
- **S5CS1.** Students will be aware of the importance of curiosity, honesty, openness, and skepticism in science and will exhibit these traits in their own efforts to understand how the world works. **c.** Offer reasons for findings and consider reasons suggested by others.
- **S5CS3.** Students will use tools and instruments for observing, measuring, and manipulating objects in scientific activities. **c.** Use computers, cameras and recording devices for capturing information.
- **M5D1.** Students will analyze graphs. **a.** Analyze data presented in a graph.
- **M5P5.** Students will create and use pictures, manipulatives, models, and symbols to organize, record, and communicate mathematical ideas.

<p>Understandings: Students will understand that...</p> <ul style="list-style-type: none"> • Animals are classified according to their shared characteristics, such as physical traits. • When classifying organisms, scientists study a wide range of features, including those visible to the naked eye; those detectable only under a microscope; and those that can be determined only by chemical tests. Scientists compare the external shapes and sizes of organisms, as well as the anatomy and function of internal organs and organ systems, such as the digestive or reproductive systems. 	<p>Essential Questions:</p> <ul style="list-style-type: none"> • How do scientists classify animals? • Why is it important to classify animals?
<p>Students will know...</p> <ul style="list-style-type: none"> • How adaptive characteristics help animals to survive and reproduce in an ecosystem. • How animals are sorted into groups (vertebrate and invertebrate) and how vertebrates are sorted into groups (fish, amphibian, reptile, bird and mammal). • Key terminology 	<p>Students will be able to...</p> <ul style="list-style-type: none"> • Identify, describe and analyze adaptive characteristics that allow organisms to survive and reproduce in an ecosystem • Compare and contrast vertebrates and invertebrates • Conduct, record, and organize information • Construct simple graphs, tables, maps and charts using tools, including computers, to organize, examine and evaluate information
 <p>Stage 2-Assessment Evidence</p>	
<p>Performance Tasks:</p> <p>You and 3-4 of your classmates have the opportunity to open the largest and most unique virtual zoo- a collection of local animals native to Atlanta. You will be competing with other grouped classmates who also want to open a virtual zoo. You and your partners will investigate zoos and research animals (mammals, reptiles, amphibians, fish and birds) that are common and unique to Georgia. Your task will be to classify and research animals according to their specific group that will be available for the public to observe online in your virtual zoo. Your group of partners will design and create a model of their zoo. Provide information about the animals and how humans can help with conservation of local wildlife in</p>	

the future. Teamwork and collaboration will be very important to the success of the virtual zoo.

- You and your partners will research information about your animal groups.
- Each member will research a specific animal under each group (mammals, reptiles, amphibians, fish, and birds). Each group will use a computer, camera, recording devices, diagrams, pictures, graphs and/or charts to prepare a report on the animals selected.
- Team members will meet and come up with characteristics for the animal groups.
- Keep a journal to record information about your animal groups.
- Groups will report the status of their research to the class and receive feedback from the teacher and class.
- After each group has reported, begin creating a model of your virtual zoo. Prepare a list of materials needed for your virtual zoo. Group the animals according to their specific characteristics. Each team should have five to six different animal areas in the zoo. Don't forget to select a name for your virtual zoo. Use any materials available in the classroom or at home.

Key Criteria

- Rubrics
- Sort animals into the proper groups according to characteristics
- Accurate usage of terms
- Compare and contrast vertebrates and invertebrates

Other Evidence

- Observations
- Journal writing
- Peer collaboration

Stage 3-Learning Plan

Materials: Books about Georgia, pictures of animals, writing journals, graphic organizers

Vocabulary: classification, animal kingdoms, mammals, reptiles, amphibians, fish, birds, extinction, endangered, threatened, habitat, predator, prey, camouflage, producers, consumers, decomposers, ecosystems, hibernation, protection, regions, mountains, coast, marsh/swamp, Piedmont, Atlantic Ocean, entrepreneur

Learning Activities

Pre-visit Classroom Activities

- Visit <http://www.cviog.uga.edu/gsb/student/wildlife/index.htm>. Allow students to research information about Georgia's wildlife. Research the different regions and the animals that live there. Be sure to include animals from different classes (mammal, bird, reptile, fish, amphibian, and insects).
- Discuss how scientists sort animals into groups (vertebrate and invertebrate) and how vertebrates are sorted into groups (fish, amphibian, reptile, bird, and mammal). Students will collect and sort animal pictures by physical attributes.

Post-Program Zoo Activities

- Have students identify mammals, reptiles, amphibians, birds, and fish as they tour the Zoo. List the Zoo animals that fit into these groups. Keep a record of the number of each species. Use this information when you return to school to write math problems (i.e., What percentage of animals are mammals, reptiles, birds, amphibians, and fish?), and create graphs depicting information collected. Discuss your findings.
- Question students as they complete the Zoo activity sheet. Students will decide and record the classification of the animals (vertebrate and invertebrate) and sort vertebrates into groups (fish, amphibian, reptile, bird, and mammal).
- Compare physical characteristics of two animals. Determine the similarities and differences between the two organisms. Classify the animals according to body structures, habitat, color, and outer covering.

Post-visit Classroom Activities

- Reflect how and why scientists classify organisms into groups. Have students sort animal pictures or drawings into categories according to scientific classification of groups. Use the graphic organizers provided for assistance.
- Guide students as they create a presentation or display that would teach someone how to classify organisms. Presentations should include multimedia presentation, picture collage, drawing and sketching, diorama, or research report.
- Visit www.georgiawildlife.dnr.state.ga.us website and find additional information about the Georgia wildlife. Students can create a pamphlet about the animals of Georgia and how individuals can protect Georgia wildlife.



Suggested Reading

Reptiles and Amphibians by Catherine Howell (National Geographic society, 1994)

New True Books Bird Series by Alice Flanagan (Children's Press, 1996)

Mammals by Martyn Branwell (DK Publishing Inc., 1993)

Animals by Frank Schaffer Publications, Inc., Palos Verdes, CA

Animal Kingdom by Instructional Fair Inc., Grand Rapids, MI

Amazing Sharks by Melvin Berger. Newbridge Educational Publishing, New York: 1995

The Encyclopedia of Mammals by David W. Macdonald (Editor)

Simon & Schuster's Guide to Mammals by Luigi Boitani

The Diversity of Fishes by Gene S. Helfman

Spineless Wonders : Strange Tales from the Invertebrate World by Richard Coniff

Suggested Websites

Zoo Atlanta- <http://www.zooatlanta.org>

Association of Zoos and Aquariums- www.aza.org

Georgia Wildlife Federation: Gardening for Wildlife- www.gwf.org/habitats.htm

Georgia Wildlife Federation Plant Index- www.gwf.org/plantindex.htm

Georgia Native Plant Society- www.gnps.org

Georgia's Natural Wonder- [www.okeswamp.com/ts Animals/plants animals.html](http://www.okeswamp.com/ts_Animals/plants_animals.html)

PBS: Nature - <http://www.pbs.org/wnet/nature/>

Animal World- <http://www.kbears.com/borrigo>

Quia - Simple Animals- <http://www.quia.com/custom/3406main.html>

Zoo Animals- <http://edtech.kennesaw.edu/web/zooanim.html>

Animal Diversity Web - <http://animaldiversity.ummz.umich.edu/site/index.html>

Systematics- <http://www.nbi.gov/disciplines/systematics.html>

Tree of Life- <http://tolweb.org/tree/phylogeny.html>

Classifying Animals- www.kn.pacbell.com/wired/fil/pages/listclassifyst.html

Create a Graph - <http://nces.ed.gov/nceskids/createagraph/>

Zoo Keeper Animal Guessing Game - <http://www.braingle.com/games/animal/index.php>

Animal Planet - <http://animal.discovery.com/>

Botany - <http://www.nbii.gov/disciplines/botany/index.html>

Children's Butterfly Site - <http://mpin.nbii.org/insects/kidsbutterfly/>

Fisheries & Aquatic Resources - <http://far.nbii.gov/>

Zoobooks - www.Zoobooks.com



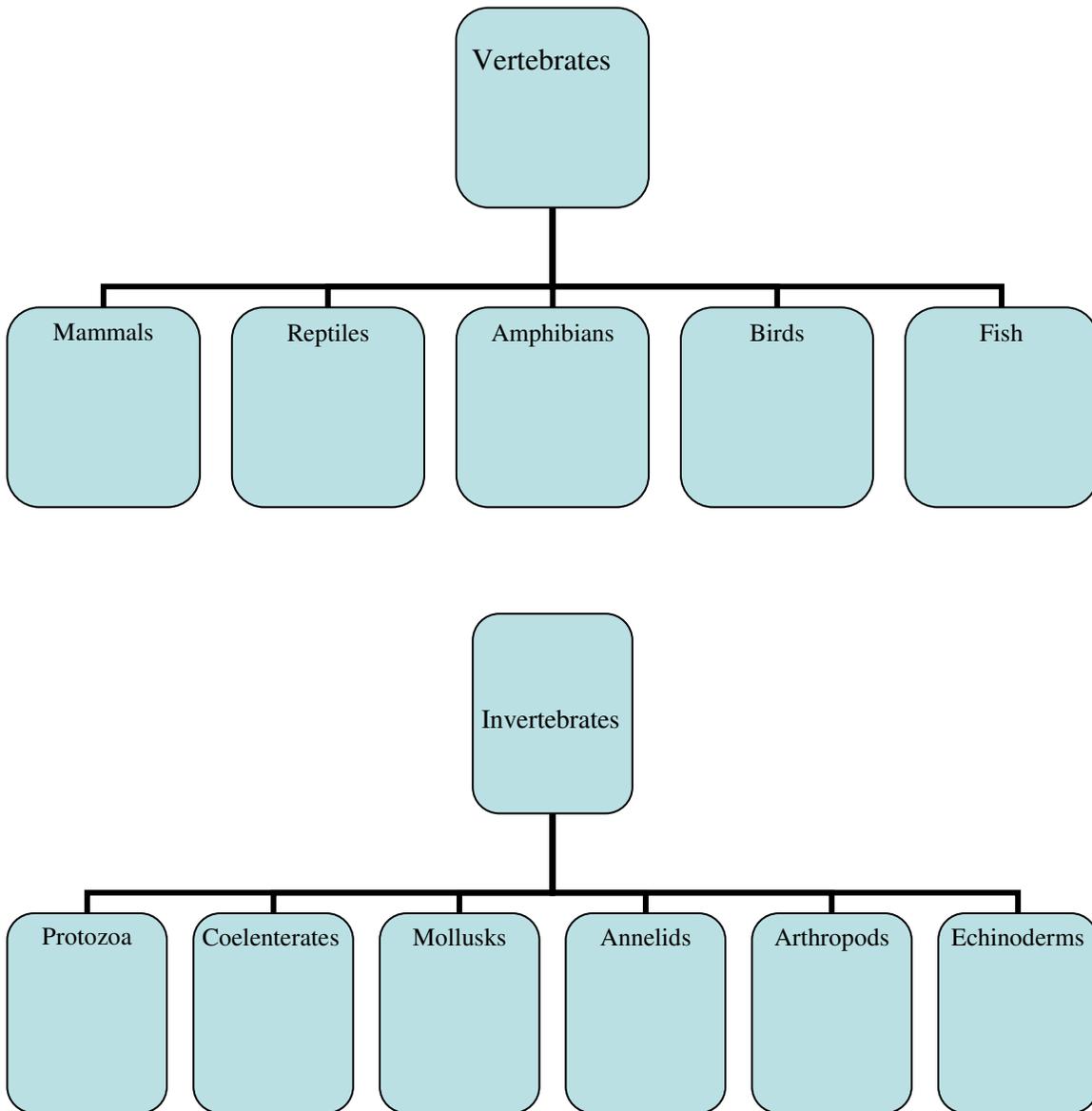
Graphic Organizers



Student Name _____ Date _____

Classifying Animals

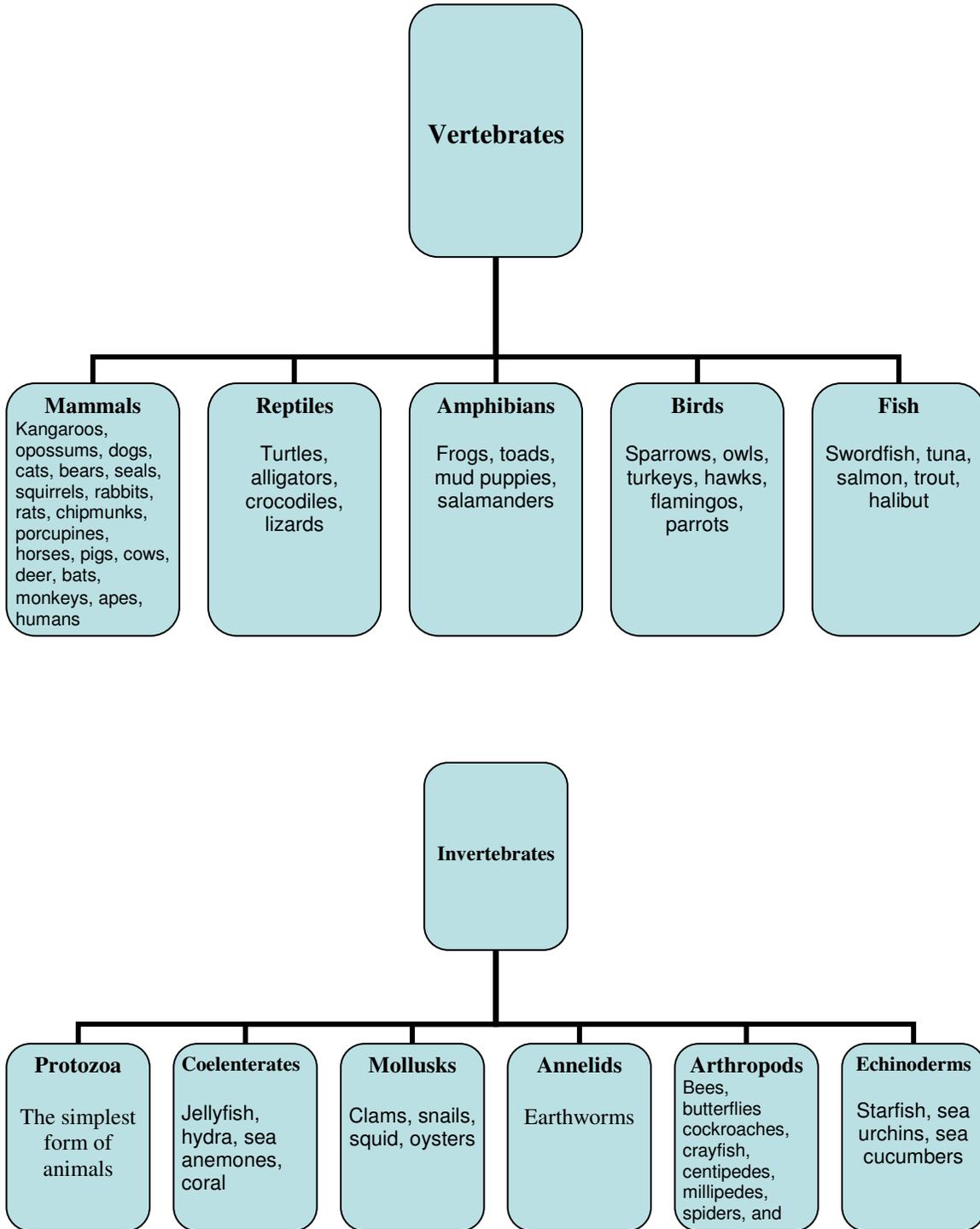
Directions: Record animal species that fit under each grouping.



Use the information above to make a chart. Explain how this information is useful.



Teacher Answer Sheet

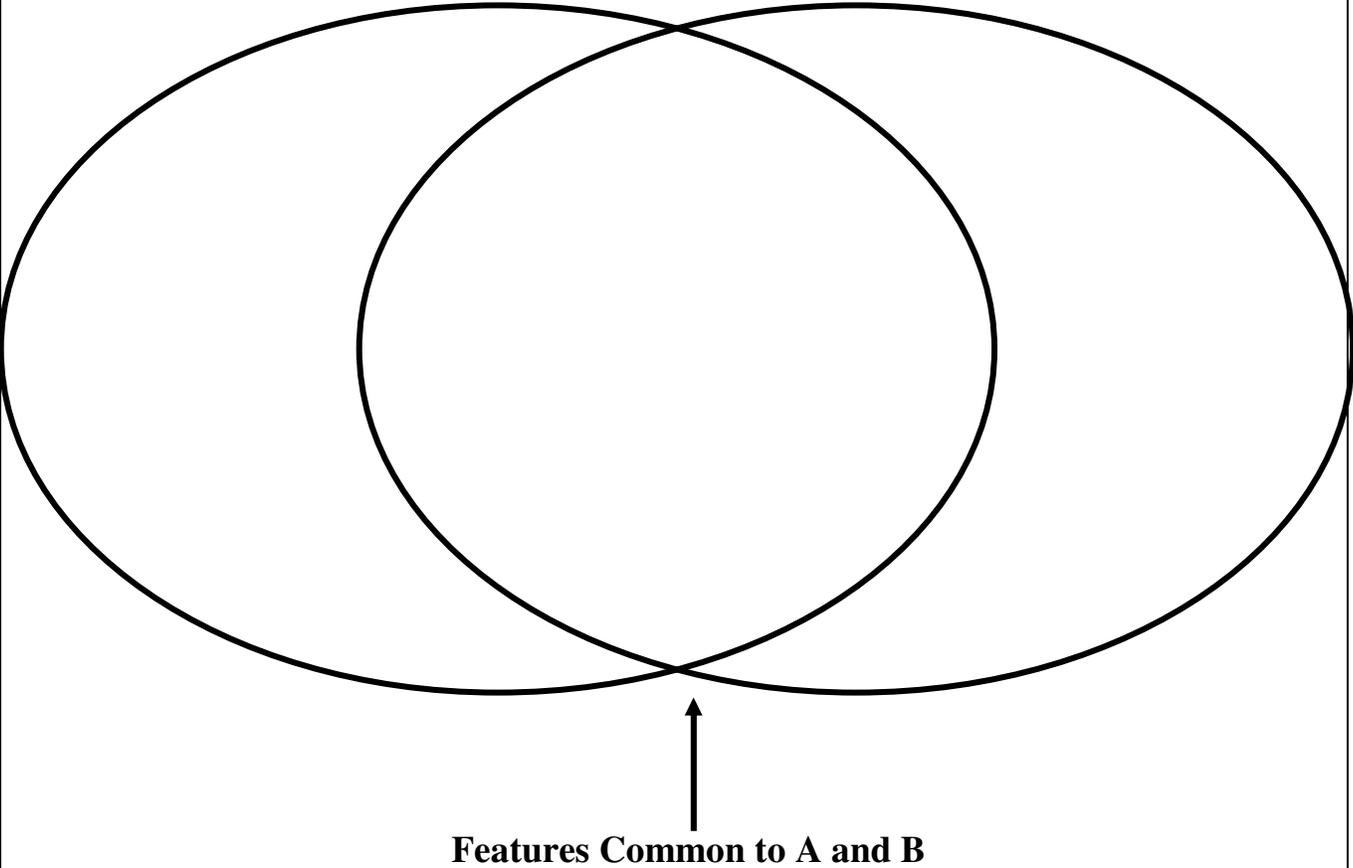




COMPARE AND CONTRAST

Name: _____ Date: _____

Features Unique to A: _____ Features Unique to B: _____





Directions: Put a check in the proper category.

Name _____ Date _____

Classifying Animals					
	Fish	Amphibians	Reptiles	Birds	Mammals
Warm-blooded					
Cold-blooded					
Live Birth					
Hatched From Egg					
Feed Young with Milk					
Has a skeleton					
Breathe with Lungs					
Breathe with Gills					



RUBRIC

	Exemplary 4	Accomplished 3	Developing 2	Beginning 1
Classification	Consistently demonstrates the ability to sort animals into the proper groups.	Usually demonstrates the ability to sort animals into the proper groups.	Sometimes demonstrates the ability to sort animals into the proper groups.	Rarely demonstrates the ability to sort animals into the proper groups.
Use of Scientific Language	Consistent, accurate usage of terms	Adequate usage of scientific terms	Occasional use with few errors	No terms of frequent errors in usage
Identification	Demonstrates full understanding of vertebrates and invertebrates.	Displays a complete and accurate understanding of vertebrates and invertebrates.	Displays an incomplete understanding of vertebrates and invertebrates.	Demonstrated severe misconceptions about I vertebrates and invertebrates.
Teamwork	Assumed leadership role within group; strong contributions	Participated with good contributions	Participated with weak contributions	Did not participate in group discussions
Application to the Real World	Able to apply learning	Usually finds practical application	Occasionally relates to real life skills	No practical application
Communication	Uses rich, vivid, and powerful description in a variety of ways to clearly communicate observations, data, and conclusions.	Consistently communicates information effectively through accurately recording and describing observations and conclusions.	Communicates plausible facts but lacks clarity in presenting facts and observations.	Is ineffective in communicating information.
Presentation	Presents information in logical, interesting sequence; demonstrates full knowledge (more than required); Maintains eye contact; Uses a clear voice.	Presents information in logical sequence; Feels at ease with expected answers; Maintains eye contact most of the time. Voice is clear, pronounces most words correctly.	Audience has difficulty following presentation because student jumps around; Student Is uncomfortable with information; Occasionally uses eye contact; Voice is low and incorrectly pronounces terms.	Audience cannot understand presentation due to no sequence; Does not have grasp of information; Reads all of the report with no eye contact; Mumbles or incorrectly pronounces terms.