



◀▶ Field Trip—An Interdisciplinary Zoo Journey ▶◀

◀▶ **Subject/Course:** Science, English/ Language Arts and Math

◀▶ **Grades:** 3rd – 5th

Zoo Atlanta Field Trip Teacher Information

Reservations and Payment

- Reservations are required 2 weeks in advance.
- Payment is due at the admission gates when you arrive with your group. Please have all funds collected and send one person to the payment window.
- For cancellations, date changes, and refunds, please contact Education Reservations at 404.624.WILD.
- Train and carousel rides are additional and can be purchased on site.
- For frequently asked questions, please visit our website at www.zooatlanta.org.

Field Trip Guides

- Our brand new Field Trip Guides were developed by Zoo staff and experienced Georgia teachers.
- All packets are correlated with the new Georgia Performance Standards.
- Download packets that are relevant to the grade(s) you are bringing.
- Please complete and return the evaluation form with your packet so we can be sure we are meeting your needs.

Chaperone Guidelines

- Review the following rules with your group:
 - Stay with the chaperone at all times.
 - Follow any directions given by teachers, chaperones and Zoo staff.
 - Do not climb on exhibits, fences or rocks or tap on the exhibits with glass.
 - Walk rather than run to avoid getting hurt and scaring the animals.
 - Pick up your trash and recycle.
 - Respect the animals – do not make loud noises.
 - Headphones or mobile phones must be turned off and put away during the visit.
 - Go to a Zoo staff member if you can't find your chaperone.
- Count your group each time you reach a new exhibit to make sure everyone is present.
- Discipline is your responsibility; consult your lead teacher if you need assistance.
- Make sure you know where and when to meet for lunch and for departure.
- Be sure to obtain a Zoo map and daily schedule from the admission booth or from your lead teacher.
- During your visit, encourage the students to ask questions, and then look for their own answers by observing the animals, reading signs and making guesses.
- Attend Zoo activities listed on the back of your map to ensure a full day.
- Have fun!

If you have any additional questions or concerns, please visit our website at www.zooatlanta.org or contact Education Reservations at 404.624.WILD.

Stage 1-Desired Results

Established Goals:

3rd Grade:

- **S3L1.** Students will investigate the habitats of different organisms and the dependence of organisms on their habitat. **a.** Differentiate between habitats of Georgia (mountains, marsh/swamp, coast, Piedmont, Atlantic Ocean) and the organisms that live there. **d.** Explain what will happen to an organism if the habitat is changed.
- **S3CS1.** 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. **a.** Keep records of investigations and observations and do not alter the records later. **b.** Offer reasons for findings and consider reasons suggested by others.
- **S3CS3.** Students will use tools and instruments for observing, measuring, and manipulating objects in scientific activities utilizing safe laboratory procedures. **b.** Use computers, cameras and recording devices for capturing information.
- **ELA3LSV1** The student uses oral and visual strategies to communicate. The student: **c.** Uses oral language for different purposes: to inform, persuade, or entertain. **d.** Listens to and views a variety of media to acquire information.
- **M3D.** Data Analysis: Students will gather, organize, and display data and interpret graphs.
- **M3D1.** Students will create and interpret simple tables and graphs. **a.** Solve problems by organizing and displaying data in bar graphs and tables. **b.** Construct and interpret bar graphs using scale increments of 1, 2, 5, and 10.

4th Grade:

- **S4L1.** Students will describe the roles of organisms and the flow of energy within an ecosystem. **a.** Identify the roles of producers, consumers and decomposers in a community.
- **S4L2.** Students will identify factors that affect the survival or extinction of organisms such as adaptation, variation of behaviors (hibernation) and external features (camouflage and protection). **a.** Identify external features of organisms that allow them to survive or reproduce better than organisms that do not have these features. (e.g. camouflage, use of hibernation, protection, etc.)
- **S4CS1.** 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.
- **S4CS3.** Students will use tools and instruments for observing, measuring, and manipulating objects in scientific activities utilizing safe laboratory procedures. **b.** Measure and mix dry and liquid materials in prescribed amounts, exercising reasonable safety. **c.** Use computers, cameras and recording devices for capturing information.
- **M4D.** Data Analysis: Students will gather, organize, and display data. They will also compare features of graphs.
- **M4D1.** Students will gather, organize, and display data according to the situation and compare related features. **a.** Represent data in bar, line and pictographs. **b.** Investigate the features and tendencies of graphs. **c.** Compare different graphical representations for a given set of data. **d.** Identify missing information and duplications in data.

5th Grade:

- **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.
- **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.

Understandings:**Students will understand that...**

- Humans and animals cohabitate and compete for the same resources on a daily basis for survival. Humans and animals can successfully coexist while sharing the same resources.
- Some source of energy is needed for all organisms to stay alive and grow.
- Animals are grouped according to their shared characteristics, such as physical traits.
- An animal's adaptations provide for rapid responses to changes in the environment and for reproduction.
- An ecosystem is a community of organisms and its interaction with its environment.
- The adaptations may increase the survival of organisms within a species.
- Animals and plants pass through different stages as they grow, known as the life cycle.
- There are many kinds and sizes of ecosystems. Ecosystems consist of organisms in a community interacting with the nonliving parts of the environment and with each other.

Essential Questions:

- How do Georgia habitats (mountains, marsh/swamp, coast, Piedmont, Atlantic Ocean) differ from one another? How do the animals differ?
- What happens to an organism if its habitat is changed?
- What roles do producers, consumers and decomposers play in a community? Why is this important?
- How does energy flow in an ecosystem?
- What factors affect the survival or extinction of organisms in a real world situation?
- How do scientists classify animals? Why is it important to classify animals?
- What external features of organisms allow them to survive or reproduce better than organisms that do not have these features?

Students will know...

- Life cycle patterns of animals and plants
- Different regions in Georgia (mountains, marsh/swamp, coast, Piedmont, Atlantic Ocean)
- How adaptive characteristics help animals to survive and reproduce in an ecosystem
- Basic needs of animals
- How animals are sorted into groups (vertebrate and invertebrate) and how vertebrates are sorted into groups (fish, amphibian, reptile, bird, and mammal).
- Use terminology appropriately
- Communicate reasons for findings and consider reasons suggested by others.
- Use and analyze graphs

Key terms: mammals, warm-blooded, cold-blooded, offspring, vertebrate, invertebrates, extinction, endangered, threatened, habitat, predator, prey, camouflage, producers, consumers, decomposers, ecosystems, hibernation, protection

Students will be able to...

- Identify and locate Georgia habitats (mountains, marsh/swamp, coast, Piedmont, Atlantic Ocean).
- Identify the basic needs of animals.
- Identify, describe and analyze adaptive characteristics that allow organisms to survive and reproduce in an ecosystem.
- Compare life cycles of animals and plants.
- Compare and contrast the cultural diversity of animals and plants in different regions of Georgia.
- Observe and describe the habitats of organisms within an ecosystem.
- Conduct, record, and organize information.
- Construct simple graphs, tables, maps and charts using tools including computers to organize, examine and evaluate information.

**Stage 2-Assessment Evidence****Performance Tasks:**

As interns on *National Geographic* for PBS, each of you will study an ecological region in Georgia and gather information from various sources, websites, magazines, videos and interviews, to learn about the animals that inhabit that particular area. Your assignment is to choose three animals from your ecological region that you feel will be an interesting asset to your television episode. As a group, you should come together to discuss the animals and narrow the selection down to one animal from each region. Then, integrate this information into a PowerPoint proposal describing your episode. Use your creative talents to express your knowledge and ideas. Be creative. Feel free to combine a mixture of sounds, images and text that will capture the audience. In your final project, you will present an oral presentation that will persuade the directors to air your television show.

- Your team needs to submit a computerized graph of data for the sampling sites

where you tested.

- Your team needs to submit a computerized map of the area and the sampling sites of the water quality test that your team conducted.
- Your team needs to submit a written statement for the causes of contamination or possible contamination risks for the future.
- Your team needs to submit a written statement to explain the importance of maintaining and improving the water quality in their area.
- Your team needs to make a general statement that describes the present health of the water your team has sampled.
- Provide justification for your statement on health of water based on your findings.

Key Criteria

- Rubric
- Accuracy
- Appropriate identification and habitat for animals
- Know the basic needs and life cycle of animals
- Distinguish between mammals, reptiles, amphibians, birds, and fish
- Distinguish between the roles of consumers, producers and decomposers
- Quality of presentation
- Maintain a journal to record experiences, observations, and findings.

Other Evidence

- Observations and dialogues
- Performance task
- Graphic organizers
- Journal writings
- Quizzes (generated by students and teacher) and tests



Stage 3-Learning Plan

Learning Activities

Pre-visit Activities

- Discuss key questions with students: What do animals need to survive? What are animals covered with? In what ways do animal coverings protect them? What do animals eat? How are animals able to thrive in different regions in Georgia? How do animals habitats differ in different region in Georgia?
- Use a KWL chart to find out what students already know about animals, would like to find out and what have they learned.
- Have students write a letter to another student telling as much as they can about animals. What should every child know about animals? What do you like about animals and why?
- Collect animal pictures from magazines, Internet, or other sources or use realistic plastic models for use throughout the lesson. Use a graphic organizer to demonstrate how to compare and contrast different types of animals: outer covering, physical features, movement, color, type of habitat, etc. (Select one animal from each group: mammal, reptile, amphibian, fish and birds.) Have students to compare and contrast specific animals.
- Discuss the characteristics of vertebrates and invertebrates. Have students sort

animal pictures into two groups: vertebrates and invertebrates. Tell students look for vertebrates and invertebrates at the Zoo. Use a graphic organizer or science journals to record findings.

- Read books about animals, their physical features and characteristics, their needs, habitats, and other interesting facts. Keep a reading log and write book reports.
- Discuss the differences between mammals, reptiles, amphibians, fish and birds. Visit the www.zooatlanta.org for additional pictures and information for the field trip. Write questions about Zoo animals that may be answered through observation or reading during the Zoo visit.
- Discuss land and water pollution. Have students research ways people pollute the land and water in Georgia. Find out what effects pollution has on the plants, animals and their habitats. Consider solutions to the problem. Select a region in Georgia (mountains, marsh/swamp, coast, Piedmont, Atlantic Ocean) to research the habitats of organisms that live there. Find out what animal features or adaptations allow them to live and thrive in different regions of Georgia. Explain what will happen to an organism if the habitat is changed.

Zoo Activities

- Observe real animals in their surroundings/habitats. Be prepared to:
 - Identify the animals
 - Describe their physical features
 - Number
 - Size
 - Motion
 - Various ways to classify
- Touch animals in the Petting Zoo. Discuss their physical characteristics. Use your senses: smell, hear, touch, and sight. Classify animals. Discuss the motion, size, physical features, color, and number of animals. Use the graphic organizer to record the number of each group of animals.
- Take photographs of the different Zoo animals. Use the photographs for various post-visit activities. As you tour the Zoo, observe and record animals that are
 - Different sizes (large/small),
 - Ages (parent/baby),
 - Speeds (fast/slow), and
 - Weights (heavy/light)
- Identify mammals, reptiles, amphibians and birds at the Zoo. List the Zoo animals that fit into these groups. Keep a record of the number of each species. Use this information to write math problems (i.e., What percentage of animals are mammals, reptiles, birds, amphibians, and fish)? Create graphs depicting information collected.
- Ask students “What would you like to know about animals? What do the Zoo animals eat? How often are they fed? Where do the animals come from? What happens to the animals when the weather is cold or hot? How do non-living materials play a part in the animals’ habitat/environment?” Locate non-living materials at the Zoo. What purpose do they serve? Record findings in a science journal.

- Compare physical characteristics of two animals at the Zoo. Determine the similarities and differences between the two organisms. Classify the animals according to body structures, habitat, color, outer covering. Draw, write, explain, and use a graphic organizer to present findings. Categorize the types of movements into those used by animals in different habitats. Make a chart entitled “Animal Movements” and divide and label it.
- Take students to the threatened and endangered animals on exhibit at Zoo Atlanta. Find out what animals are on the list and what has been done to help the threatened and endangered animals.

Post Visit Activities

- Did you know some animals depend on each other for food? Owls and raccoons are an example. Owls like to eat baby animals, baby raccoons for example. Adult raccoons like to eat eggs, owl eggs for example. Allow students to research and create an illustration, diorama, or mobile to show how this relationship or similar relationships in a food web. Construct a graph to illustrate producers, consumers and decomposers in several food webs: the flow of energy within an ecosystem.
- Provide information about the life cycles of various animals. Students will create models of the life cycles of an insect, fish, or other organisms. Explain the transformation.
- Some species are so important to an ecosystem that the loss of those species can spell disaster for the other organisms living there. Allow students to research a terrestrial or aquatic ecosystem in your area, identify five species and write a news article explaining the potential environmental impact if one of the species became extinct.
- Assist students in researching and locating several threatened and endangered animals in Georgia. Design a map and write an article of their findings. Make a flow chart to show the decline or increase in population of threatened and endangered animals in other states or countries. Use Zoo Atlanta’s Natural World Activity Box to investigate endangered species and habitat destruction artifacts. Reserve your box by emailing education@zooatlanta.org. Have students think of ways to save endangered species and prevent the destruction of habitats.
- Discuss how wild animals adapt to urban and suburban environments. Students will research the animals that have suffered a loss of natural habitat, such as squirrels, coyotes, raccoons, hawks and deer. Find out which animals have adapted well to living among humans and which have not. Why are some animals more successful at city living than others? Create a poster, model display, book report, or PowerPoint to report your findings.
- Have students research the weights of various animals. Design a graphic organizer to arrange and compare animal birth and adult weights in order from the smallest to the largest unit of measurement. Input information at Kids Graphing Page (see website section) to create graphs. Analyze graphs.

- Select a familiar tune and write a song about your favorite animal(s). Include lyrics about its habitat, physical features, diet, etc. Teach the song to the class.
- Model how to write a questionnaire. Have students create a Zoo questionnaire about animal traits, groupings, life cycles, habitats of Georgia, or similar topics covered at the Zoo and classroom. The questionnaire will be answered by another student or parents.
- Use modeling clay and other craft supplies to create a miniature Zoo or animals in their natural habitats. Include vertebrates and invertebrates. Use a shoebox or other box to create your habitat in. Write a brochure about your project. Present your project to the class.
- Design a board game about: life cycle patterns of animals; different regions in Georgia (mountains, marsh/swamp, coast, Piedmont, Atlantic Ocean); how adaptive characteristics help animals to survive and reproduce in an ecosystem; basic needs of animals; how animals are sorted into groups (vertebrate and invertebrate) and/or how vertebrates are sorted into groups (fish, amphibian, reptile, bird, and mammal); Include directions and game pieces. Teach classmates how to play your game.
- Allow students to generate quizzes: To demonstrate their understanding, divide students into small groups to prepare a report and class presentation on the topic of their choice. As part of the presentation, students must devise an assessment to administer to the class. The assessment may be in the form of games, team quizzes and panel discussions, etc.

Suggested Reading

Zoobooks Series. Zoobooks.com

Everglades by George, Jean Craighead; Harper Collins

Butterflies and Moths (Crabapples) by Bobbie Kalman, Tammy Everts

Apes (Know-It-Alls) by Carol Harrison, Greg Harris

Elephants (Robinson, Claire, in the Wild.) by Claire Robinson

National Audubon Society First Field Guide: Fishes (National Audubon Society) by C. Lavett Smith

Animals Born Alive and Well (Ruth Heller's World of Nature) by Ruth Heller(School & Library Binding

Mammal (DK EYEWITNESS BOOKS) by Steve Parker,

What Is Hibernation? (Science of Living Things) by John Crossingham, Bobbie Kalman

Wild Animals (Touch and Feel) by Dorling Kindersley Publishing, Deni Bown

How do Animals Adapt? (The Science of Living Things) by Bobbie Kalman

Scavengers and Decomposers: The Clean Up Crew by Pat Hughey. New York: Athenaeum, 1984

Videocassettes

Living on the edge. Written by Tom Horton. 18 min. Chesapeake Bay Foundation. 1992 Crane River. 60 min. National Audubon Society, 1989

Suggested Websites

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

Association of Zoos and Aquariums – www.aza.org

FOSSweb - Animals Two by Two- <http://www.fossweb.com/modulesK-2/AnimalsTwobyTwo>

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

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

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

ExZOOberance- <http://www.exzooberance.com>

Homemade Modeling Clay www.pioneerthinking.com/modelingclay.html

Kids Graphing Page <http://nces.ed.gov/nceskids/createagraph>





THREE-WAY VENN DIAGRAM

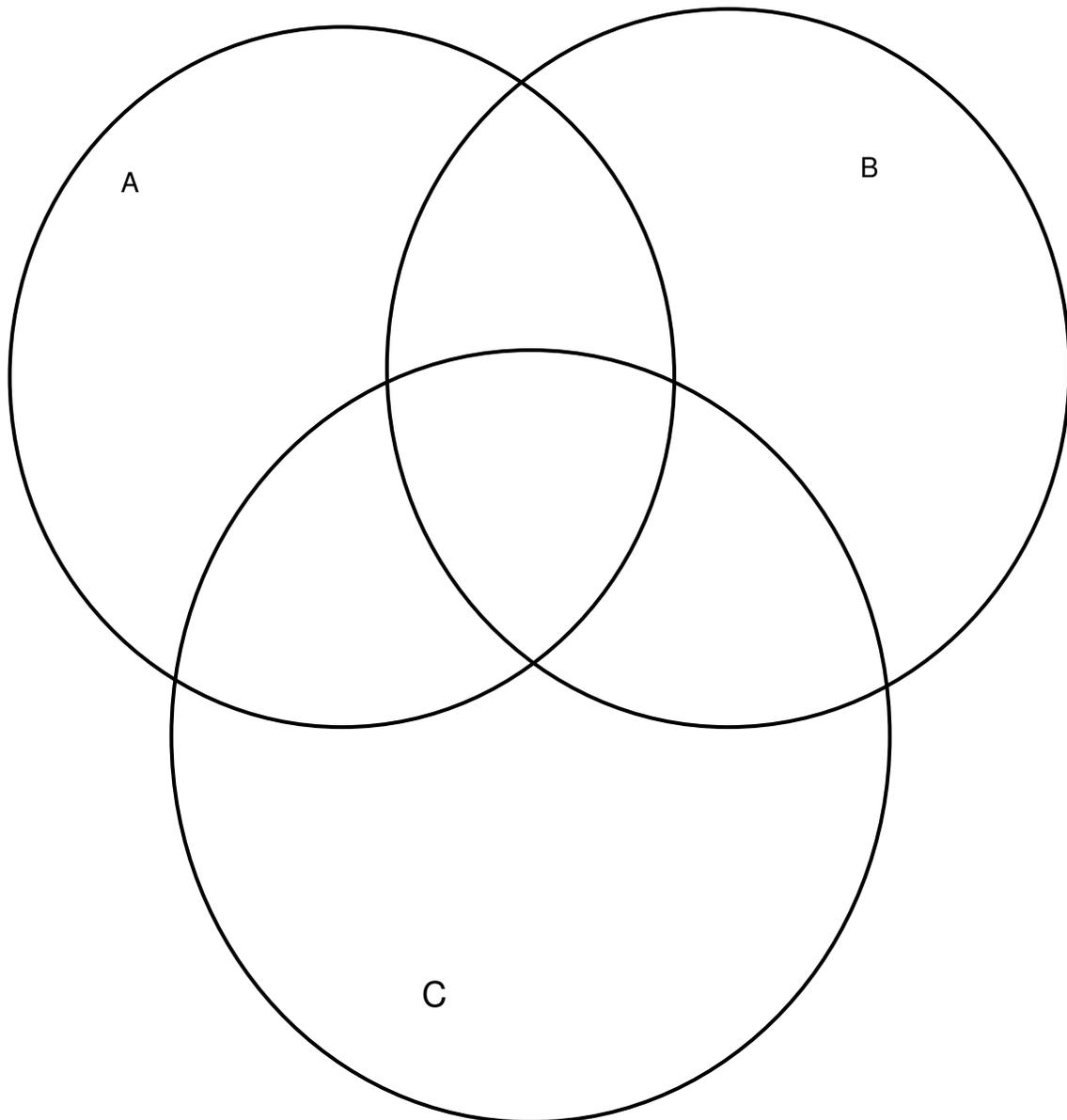
Name: _____ Date: _____

Title/Topic _____

Comparing A _____

B _____

C _____





KWL Chart

Name _____ Date _____

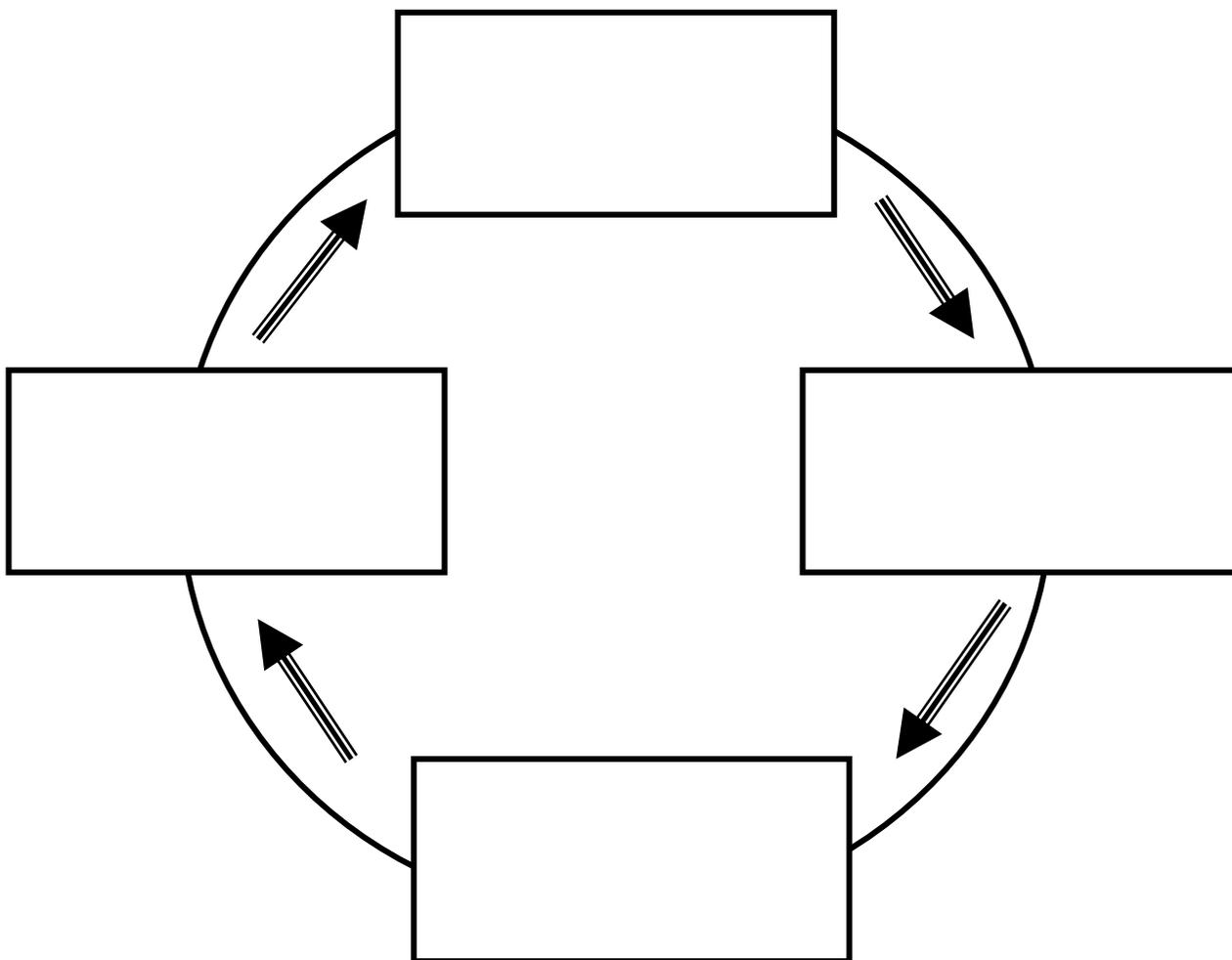
Topic _____		
What I Know	What I Want to Know	What I Learned



Name _____

Date _____

Cycle Graph (Sequence and Repeat)

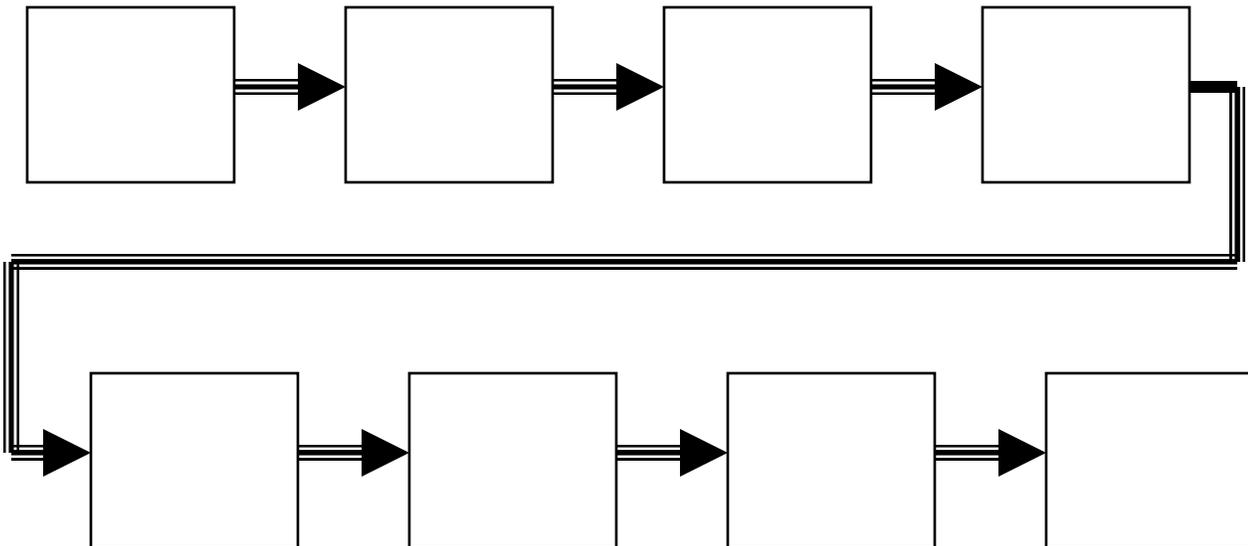




Name _____ Date _____

Flow Chart (Sequence)

Skill or Problem:

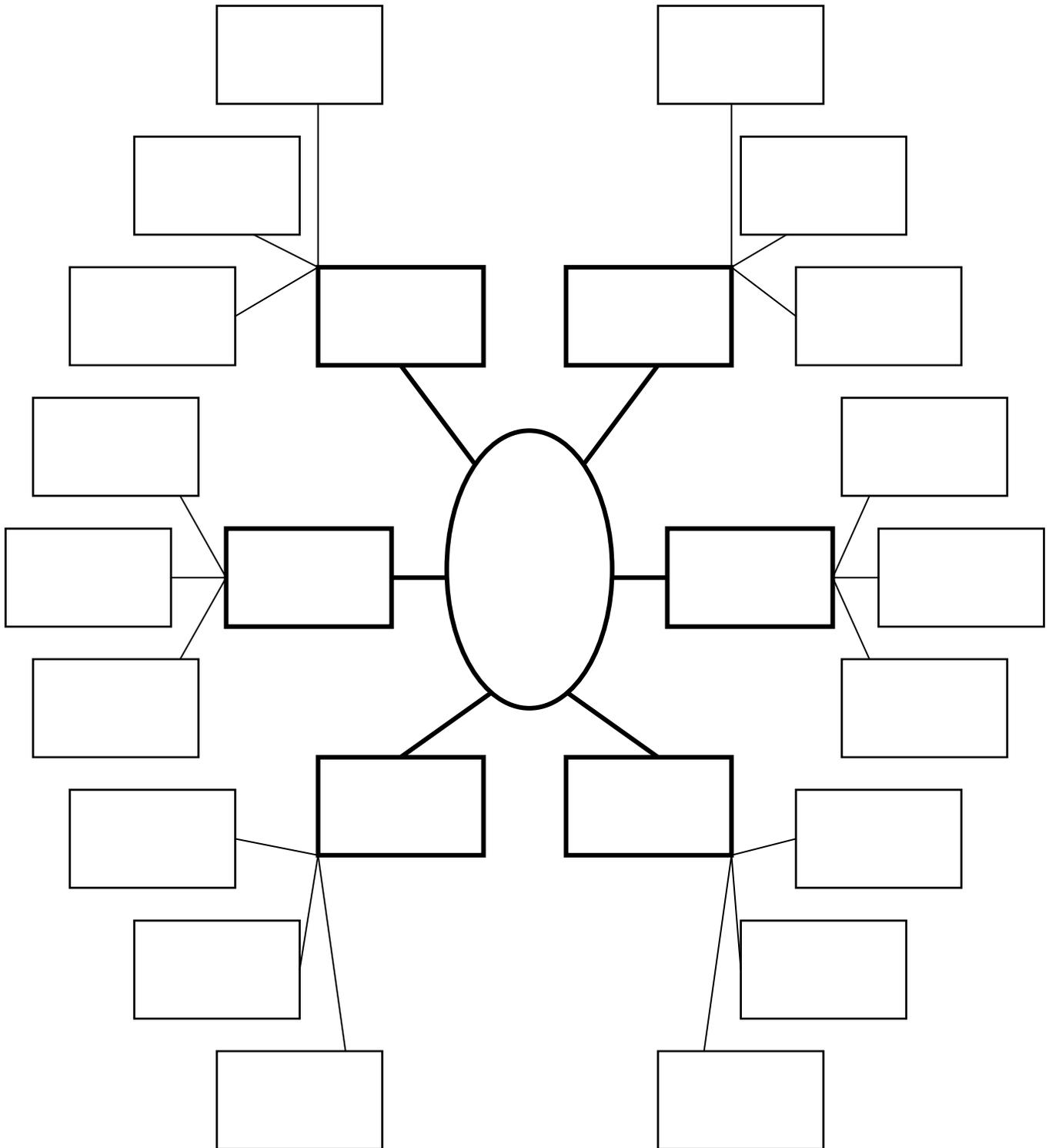




Name _____

Date _____

WEB DIAGRAM (Classifying)





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 living and nonliving items.	Displays a complete and accurate understanding of living and nonliving items.	Displays an incomplete understanding of living and nonliving items.	Demonstrated severe misconceptions about living and nonliving items.
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; pronounces words correctly.	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.