### ZOO ATLANTA

#### Field Trip—An Interdisciplinary Zoo Journey

**Subject/Course:** Art, Math, Language Arts, Social Studies, Science, Technology  
**Grades:** 6th-8th grade

<table>
<thead>
<tr>
<th>Zoo Atlanta Field Trip Teacher Information</th>
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<tbody>
<tr>
<td><strong>Reservations and Payment</strong></td>
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<tr>
<td>• Reservations are required 2 weeks in advance.</td>
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<tr>
<td>• 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.</td>
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<tr>
<td>• For cancellations, date changes, and refunds, please contact Education Reservations at 404.624.WILD.</td>
</tr>
<tr>
<td>• Train and carousel rides are additional and can be purchased on site.</td>
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<tr>
<td>• For frequently asked questions, please visit our website at <a href="http://www.zooatlanta.org">www.zooatlanta.org</a>.</td>
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<tr>
<th>Field Trip Guides</th>
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<tr>
<td>• Our brand new Field Trip Guides were developed by Zoo staff and experienced Georgia teachers.</td>
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<tr>
<td>• All packets are correlated with the new Georgia Performance Standards.</td>
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<tr>
<td>• Download packets that are relevant to the grade(s) you are bringing.</td>
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<tr>
<td>• Please complete and return the evaluation form with your packet so we can be sure we are meeting your needs.</td>
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<tr>
<th>Chaperone Guidelines</th>
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<tbody>
<tr>
<td>• Review the following rules with your group:</td>
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<tr>
<td>• Stay with the chaperone at all times.</td>
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<tr>
<td>• Follow any directions given by teachers, chaperones, and Zoo staff.</td>
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<tr>
<td>• Do not climb on exhibits, fences or rocks or tap on the exhibits with glass.</td>
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<tr>
<td>• Walk rather than run to avoid getting hurt and scaring the animals.</td>
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<tr>
<td>• Pick up your trash and recycle.</td>
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<tr>
<td>• Respect the animals – do not make loud noises.</td>
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<tr>
<td>• Headphones or mobile phones must be turned off and put away during the visit.</td>
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<tr>
<td>• Go to a Zoo staff member if you can't find your chaperone.</td>
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<tr>
<td>• Count your group each time you reach a new exhibit to make sure everyone is present.</td>
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</tr>
<tr>
<td>• Discipline is your responsibility; consult your lead teacher if you need assistance.</td>
<td></td>
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<tr>
<td>• Make sure you know where and when to meet for lunch and for departure.</td>
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<tr>
<td>• Be sure to obtain a Zoo map and daily schedule from the admission booth or from your lead teacher.</td>
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<tr>
<td>• 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.</td>
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</tr>
<tr>
<td>• Attend Zoo activities listed on the back of your map to ensure a full day.</td>
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<tr>
<td>• Have fun!</td>
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*If you have any additional questions or concerns, please visit our website at [www.zooatlanta.org](http://www.zooatlanta.org) or contact Education Reservations at 404.624.WILD.*
Stage 1-Desired Results

**Established Goals:**
6th Grade:

- **S6CS1.** Students will explore 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.** Understand the importance of—and keep—honest, clear, and accurate records in science.

- **S6CS2** Students will use standard safety practices for all classroom laboratory and field investigations.

- **S6CS5.** Students will use the ideas of system, model, change, and scale in exploring scientific and technological matters.

- **S6CS6.** Students will communicate scientific ideas and activities clearly. **a.** Write clear, step-by-step instructions for conducting particular scientific investigations, operating a piece of equipment, or following a procedure.

- **S6CS7.** Students will question scientific claims and arguments effectively. **b.** Identify the flaws of reasoning that are based on poorly designed research. **d.** Recognize that there may be more than one way to interpret a given set of findings.

- **S6CS9.** Students will investigate the features of the process of scientific inquiry.

- **S6CS10.** Students will enhance reading in all curriculum areas by: reading in all curriculum areas.

- **M6A2.** Students will consider relationships between varying quantities.

- **M6D1.** Students will pose questions, collect data, represent and analyze the data, and interpret results.

- **M6P4.** Students will make connections among mathematical ideas and to other disciplines.

- **M6P1.** Students will solve problems (using appropriate technology).

- **M6P3.** Students will communicate mathematically.

- **M6P4.** Students will understand how mathematical ideas interconnect and build on one another and apply mathematics in other content areas.

- **M6P5.** Students will create and use pictures, manipulatives, models and symbols to organize, record, and communicate mathematical ideas.

- **ELA6R2.** The student understands and acquires new vocabulary and uses it correctly in reading and writing.

- **ELA6RC3.** The student acquires new vocabulary in each content area and uses it correctly.

- **ELA6RC4.** The student establishes a context for information acquired by reading across subject areas.

- **ELA6W1.** The student produces writing that establishes an appropriate organizational structure, sets a context and engages the reader, maintains a coherent focus throughout, and provides a satisfying closure.

- **ELA6W3.** The student uses research and technology to support writing.

- **ELA6W4.** The student consistently uses the writing process to develop, revise, and evaluate writing.

- **ELA6LSV1.** The student participates in student-to-teacher, student-to-student, and group verbal interactions.
7th Grade:

- **S7CS1.** Students will explore 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.** Understand the importance of—and keep—honest, clear, and accurate records in science.

- **S7CS2.** Students will use standard safety practices for all classroom laboratory and field investigations.

- **S7CS5.** Students will use the ideas of system, model, change, and scale in exploring scientific and technological matters.

- **S7CS6.** Students will communicate scientific ideas and activities clearly. **a.** Write clear, step-by-step instructions for conducting particular scientific investigations, operating a piece of equipment, or following a procedure.

- **S7CS7.** Students will question scientific claims and arguments effectively. **b.** Identify the flaws of reasoning that are based on poorly designed research. **d.** Recognize that there may be more than one way to interpret a given set of findings.

- **S7CS9.** Students will investigate the features of the process of scientific inquiry.

- **S7CS10.** Students will enhance reading in all curriculum areas by: reading in all curriculum areas.

- **S7L1.** Students will investigate the diversity of living organisms and how they can be compared scientifically. **b.** Classify organisms based on a six-kingdom system and a dichotomous key.

- **S7L4.** Students will examine the dependence of organisms on one another and their environments. **c.** Recognize that changes in environmental conditions can affect the survival of both individuals and entire species. **d.** Categorize relationships between organisms that are competitive or mutually beneficial. **e.** Describe the characteristics of Earth’s major terrestrial biomes (i.e. tropical rain forest, savanna, temperate, desert, taiga, tundra, and mountain) and aquatic communities (i.e. freshwater, estuaries, and marine).

- **S7L5.** Students will examine the evolution of living organisms through inherited characteristics that promote survival of organisms and the survival of successive generations of their offspring. **a.** Explain how physical characteristics of organisms have changed over successive generations (e.g. Darwin’s finches and peppered moths of Manchester). **b.** Describe ways in which species on earth have evolved due to natural selection.

- **M7A3.** Students will understand relations and functions.

- **M7P3.** Students will use the language of mathematics to express ideas precisely.

- **M7P4.** Students will understand how mathematical ideas interconnect and build on one another and apply mathematics in other content areas.

- **M7P5.** Students will create and use pictures, manipulatives, models and symbols to organize, record, and communicate mathematical ideas.

- **ELA7R2.** The student understands and acquires new vocabulary and uses it correctly in reading and writing.

- **ELA7RC3.** The student acquires new vocabulary in each content area and uses it correctly.

- **ELA7RC4.** The student establishes a context for information acquired by reading across subject areas.

- **ELA7W1.** The student produces writing that establishes an appropriate organizational structure, sets a context and engages the reader, maintains a coherent focus throughout, and provides a satisfying closure.
• **ELA7W3.** The student uses research and technology to support writing.
• **ELA7W4.** The student consistently uses the writing process to develop, revise, and evaluate writing.
• **ELA7C1** The student demonstrates understanding and control of the rules of the English language, realizing that usage involves the appropriate application of conventions and grammar in both written and spoken formats.
• **ELA7LSV1.** The student participates in student-to-teacher, student-to-student, and group verbal interactions.

8th Grade:
• **S8CS1.** Students will explore 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.** Understand the importance of—and keep—honest, clear, and accurate records in science.
• **S8CS2.** Students will use standard safety practices for all classroom laboratory and field investigations.
• **S8CS5.** Students will use the ideas of system, model, change, and scale in exploring scientific and technological matters.
• **S8CS6.** Students will communicate scientific ideas and activities clearly. **a.** Write clear, step-by-step instructions for conducting particular scientific investigations, operating a piece of equipment, or following a procedure.
• **S8CS7.** Students will question scientific claims and arguments effectively. **b.** Identify the flaws of reasoning that are based on poorly designed research. **d.** Recognize that there may be more than one way to interpret a given set of findings.
• **S8CS9.** Students will investigate the features of the process of scientific inquiry.
• **S8CS10.** Students will enhance reading in all curriculum areas by: reading in all curriculum areas.
• **M8P1.** Students will solve problems (using appropriate technology).
• **M8P3.** Students will communicate mathematically.
• **M8P4.** Students understand how mathematical ideas interconnect and build on one another and apply mathematics in other content areas.
• **M8P5.** Students will create and use pictures, manipulatives, models and symbols to organize, record, and communicate mathematical ideas.
• **ELA8R2.** The student understands and acquires new vocabulary and uses it correctly in reading and writing.
• **ELA8RC3.** The student acquires new vocabulary in each content area and uses it correctly.
• **ELA8RC4.** The student establishes a context for information acquired by reading across subject areas.
• **ELA8W1.** The student produces writing that establishes an appropriate organizational structure, sets a context and engages the reader, maintains a coherent focus throughout, and provides a satisfying closure.
• **ELA8W3.** The student uses research and technology to support writing.
• **ELA8W4.** The student consistently uses the writing process to develop, revise, and evaluate writing.
• **ELA8LSV1.** The student participates in student-to-teacher, student-to-student, and group verbal interactions.
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<tr>
<th>Understandings: Students will understand that...</th>
<th>Essential Questions:</th>
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<tr>
<td>• All living things inherit characteristics called adaptations that enhance their survival in their natural environment.</td>
<td>• How does biodiversity support your survival?</td>
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<tr>
<td>• In addition to physical characteristics, behaviors are also inherited as adaptations.</td>
<td>• How would you describe the adaptive nature of living things?</td>
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<tr>
<td>• Biodiversity, the great variety of living things, is the result of the evolution of living things in many changing environments.</td>
<td>• How do physical characteristics of a place determine habitation by specific wildlife?</td>
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<tr>
<td>• That many factors are involved in determining geographical distinctiveness.</td>
<td>• How would you compare animals mathematically?</td>
</tr>
<tr>
<td>• There are mathematical patterns in nature.</td>
<td>• How is animal nutrition evaluated mathematically?</td>
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<tr>
<td>• Mathematics can be applied in other subject areas.</td>
<td>• How do praise poems enable you to understand more about an animal?</td>
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<tr>
<td>• Animals express their behavior in mathematically predictable ways.</td>
<td>• How do you inform and entertain a child through literature about animals?</td>
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<tr>
<td>• Writing in different subject areas introduces new vocabulary and skills.</td>
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<td>• Reading and writing in different genres broadens writing abilities.</td>
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<table>
<thead>
<tr>
<th>Students will know...</th>
<th>Students will be able to...</th>
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<tbody>
<tr>
<td>• Animals are important.</td>
<td>• Draw and create wire sculptures.</td>
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<tr>
<td>• The evolution of behavior is a result of the inherited characteristics that enhance success of the animals in surviving in a habitat while interacting with other animals and the environment.</td>
<td>• Keep honest, clear and accurate records in science.</td>
</tr>
<tr>
<td>• The development of appendages occurs in specific ways and demonstrates the necessary structures for each animal to survive in its natural environment.</td>
<td>• Record the details of the behaviors that they observe.</td>
</tr>
<tr>
<td>• Different animals require different amounts of energy.</td>
<td>• Given a dichotomous key for carnivores and a key for herbivores, classify the animals you have chosen.</td>
</tr>
<tr>
<td>• The environmental influences have an impact in shaping the characteristics of each animal.</td>
<td>• Produce a field journal.</td>
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<tr>
<td>• Estimating is an important part of mathematics.</td>
<td>• Describe the concept of place.</td>
</tr>
<tr>
<td></td>
<td>• Use the language of mathematics to express ideas precisely.</td>
</tr>
<tr>
<td></td>
<td>• Apply mathematics in other content areas.</td>
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<tr>
<td></td>
<td>• Acquire new vocabulary and use it correctly in reading and writing.</td>
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<tr>
<td></td>
<td>• Read across subject areas.</td>
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<tr>
<td></td>
<td>• Demonstrate competence in a variety of genres.</td>
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<tr>
<td></td>
<td>• Develop, revise, and evaluate writing.</td>
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</tbody>
</table>
- The nutritionists at the Zoo are constantly analyzing the dietary requirements of the animals and determining the amounts and types of foods to offer each animal.
- A praise poem gives the characteristics of the animal while informing the reader of the history and lifestyle of the animal.
- Storybooks should be descriptive, colorful, informative and fun.
- Use Internet resources.

### Stage 2-Assessment Evidence

#### Performance Tasks:
- Drawings, wire sculptures
- Recording the details of the behaviors observed.
- Classifying the animals.
- Producing a field journal, drawing, and describing observations.
- Marking a country or location on a map.
- Reading and recording conclusions.
- Calculating proportions.
- Estimating and evaluating estimations.
- Analyzing recorded data and recording conclusions.
- Writing and revising.
- Using similes and metaphors.

#### Key Criteria
- The time and cost of a field trip to the Zoo can be better justified when the trip is interdisciplinary. By offering activities that cover more than one subject area, teachers can stress the importance of the study of animals to the educational progress of the student. Administrators and parents will appreciate the activities that give the students more opportunities to achieve in more subject areas with inquiry, performance-based learning.
- In the following sections, there are suggested activities for students that allow them to study animals. The products of these studies will provide evidence of student understanding in the listed disciplines.

#### Other Evidence
- Using standard safety practices.
- Categorizing relationships.
- Researching and evaluating.
- Participating in student-to-teacher, student-to-student, and group verbal interactions.
- Preparing an itinerary.
- Reading a map.
- Translating language.
Stage 3-Learning Plan

Learning Activities
Pre-visit Activities

Technology
Using Internet resources can be a valuable pre-Zoo preparation plan. Visiting useful websites allows the students to research the animals and endangered species and zoos, in order to prepare for a field trip to Zoo Atlanta. Below is a list of activities the students could do using the computer.

1. Using the map of Zoo Atlanta at www.zooatlanta.org, under Visitor Information, or at http://www.zooatlanta.org/site/visitor_info/zoo_map.htm, prepare an itinerary of your tour of the Zoo.
2. To add interest, the students can find a map of the route from their school to Zoo Atlanta at http://www.mapquest.com/main.adp OR http://tiger.census.gov/cgi-bin/mapbrowse-tbl, the second site being an excellent resource for geography.
3. Find the name of the animals in Spanish or French or other language at http://world.altavista.com/
4. Predict the weather on the day of the Zoo trip at http://intellicast.com/ OR http://www.weather.com/
5. Do a search for information about specific animals at http://www.google.com/
6. Find out which animals are endangered species and research the laws that protect them at http://www.bagheera.com/ OR http://endangered.fws.gov/

Zoo Activities
ART
Drawings - Select the animal that would be your symbol to represent the characteristics that you see in yourself. For example, draw an elephant if you are strong and confident. Or if you are fast and sleek, draw a gazelle.
Next, draw the animal that you think represents your best friend. Choose the characteristics that you like about your friend, and there will be an animal that has those characteristics.
Wire sculptures – Using thin wire with taped ends for safety, make wire sculptures of your drawings of animals. Use one continuous piece of wire to create the likeness.
Habitats – Using bold colors, draw the habitats for the animals you have selected. Pay attention to colors of the ground and the plants. Draw into your habitat a place for your animal to hide for protection or stealth.

SCIENCE
Predators or Prey? – Select and observe two animals that are carnivores and two animals that are herbivores. The behavior of these animals is very different in their natural habitats. The evolution of behavior is a result of the inherited characteristics that enhance success of the animals in surviving in a habitat while interacting with other animals and the environment. Record the details of the behaviors that you observe with each animal. Compare and contrast these behaviors, relating the behaviors to the successes of the prey and the predator. Given a dichotomous key for carnivores and a key for herbivores, classify the animals you have chosen. To which level do the carnivores and herbivores share the same taxon? In other words, how many classification groups do the animals have in common?

Below are a few websites that may help in classification.

http://faculty.fmcc.suny.edu/mcdarby/Pages/ClassificationKey/ClassificationAnimalia.htm
http://anthro.palomar.edu/animal/default.htm
http://vilenski.org/science/safari/animals/index.html
http://vilenski.org/science/safari/animals/other/classify_animals.html
http://www.life.umd.edu/classroom/bsci338m/Lectures/Systematics.html
http://tolweb.org/tree/phylogeny.html
http://tolweb.org/tree?group=Carnivora&contgroup=Eutheria
http://tolweb.org/tree?group=Eutheria&contgroup=Mammalia

Limbs and Feet – The development of appendages occurs in specific ways and demonstrates the necessary structures for each animal to survive in its natural environment. Whether paws or hooves, hands or feet, nails or talons, the animal is born with the limbs it will use to move, gather food, protect it, and mate.

In your field journal, beside the name for each animal observed, draw a picture of the front and back of hands or feet. Describe how the animal uses its feet during your observations.

Large or Small – Before coming to the Zoo, research the amounts of food needed by different animals. Differentiate between cold-blooded and warm-blooded animals. In proportion to size, do large, warm-blooded animals need more or less energy than small, warm-blooded animals? Is it the same for cold-blooded animals?

At the Zoo, observe the behavior of large, warm-blooded animals and compare it to small, warm-blooded animals. Observe the cold-blooded animals in the World of Reptiles. How does their behavior change with the change in temperature? Is their behavior similar to, or different from the behavior of warm-blooded animals? Write your observations in your field journal.

Below are some websites for research:

http://coolcosmos.ipac.caltech.edu/image_galleries/ir_zoo/coldwarm.html
http://animal.discovery.com/guides/mammals/body/overview_blood.html
http://www.geol.umd.edu/~tholtz/G104/10430endo.htm
http://reptilis.net/cold-blood.html

SOCIAL STUDIES

Geography – Take a complete tour of the Zoo and record the countries that are indicated by the informative signs at each animal display. Write the name of the country, along with some information about the climate or habitats within the country. Mark the country or location on a map. Reading will be involved as the students read the information signs at each display.

Starting at the beginning, walk the complete tour of the Zoo again, recording the animals that are displayed to represent each country. With a partner, discuss the environmental influences that have had an impact in shaping the characteristics that you find in each animal. Observe
the ecosystem at each display. Is it designed to be arid or a rainforest? What is the geographical basis for the design of the display? Record your conclusions.

MATH

Body size in proportion to leg/feet support – Estimating – Estimating is an important part of mathematics. During the Zoo tour, the students will estimate the length of head/neck (from nose to shoulder), length of legs, weight of animals, and diameter of foot in metric measures. The student will calculate the proportion of length of legs to length of head/neck and diameter of hoof to weight of animal. Compare the proportions among the animals. Is there any correlation? Record your conclusions. Upon returning to school, the student will research the actual dimensions and compare these to their estimations. The student will then evaluate their estimations and write a conclusion about the processes of estimating. Here are some websites to research animal measurements.

http://www.durenmar.de/articles/sizes.html

http://www.oaklandzoo.org/atoz/azeleph.html

http://animal.discovery.com/guides/atoz/atoz.html

http://animaldiversity.ummz.umich.edu/site/index.html

http://netvet.wustl.edu/zoo.htm

http://www.bbc.co.uk/nature/animals/

http://animaldiversity.ummz.umich.edu/site/topics/mammal_anatomy/running_fast.html

http://www.chaffeezoo.org/animals/polarBear.html

http://www.sandiegozoo.org/animalbytes/t-giraffe.html

Pandas of Central China – The giant panda comes from the mountainous regions of central China. The number of these animals is decreasing because of loss of habitat. These beautiful animals spend up to 12 hours a day eating tender shoots of bamboo, which is disappearing as deforestation occurs. Because the bamboo is hard to digest, the pandas must eat about 15% of their body weight daily in order to receive enough nutrients. An adult panda weighs about 200 pounds. The caretakers in the Nutrition Kitchen at Zoo Atlanta prepare bamboo for panda meals. The nutritionists at the Zoo are constantly analyzing the dietary requirements of the animals and determining the amounts and types of foods to offer each animal.

1. Calculate the amount of food (in pounds) that each panda should eat each day.
2. Imagine that you are a Zoo nutritionist. You receive a new food substance for zebras to give to the new young growing zebra that was transferred to the Zoo recently. When analyzed, the following data was collected. In the “Comments” column, record “Deficient” or “Excessive” to indicate the level of nutrient in the Zoo Diet when compared to the National Research Council’s Recommendations in grams/day (g/d).

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Zoo Diet</th>
<th>Nat’l Research</th>
<th>Comments</th>
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<tr>
<th></th>
<th>g/d</th>
<th><strong>Council Recommendations g/d</strong></th>
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<tbody>
<tr>
<td>Protein</td>
<td>482</td>
<td>650</td>
</tr>
<tr>
<td>Calcium</td>
<td>31</td>
<td>19</td>
</tr>
<tr>
<td>Potassium</td>
<td>53.2</td>
<td>18.7</td>
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**ENGLISH/LANGUAGE ARTS**

*Praise Poem* - Animals are often the focus of literature. We relate to animals in many ways and often give them human characteristics. Select an animal that you feel represents yourself. Think about your own personality and skills and find the animal that is most like you. Make a list of descriptions of yourself and a list of descriptions for the animal that you choose. Include similes and metaphors in your descriptions.

Now write a praise poem about that animal using your list. A praise poem gives the characteristics of the animal while informing the reader of the history and lifestyle of the animal. In Africa, a praise poem is often written for a person, so that others will be able to know more about that person.

*Who Am I? Children’s Book* - As students take a tour of the Zoo, they are to record the characteristics of the animals and their habitats. They should record their observations in a field notebook, including sketches. (See below for a sample of a behavior observation chart – ethogram.) Using their observations, the students are to write short books aimed at an audience of ages 4-8. The storybooks should be descriptive, colorful, informative and fun. Hopefully, once completed, the students can go to an elementary classroom and share their stories with younger children.

**Suggested Reading**


Grzimek's Animal Life Encyclopedia - QL3 G7813 vol.1-13


Tinbergen, Niko. 1951. The Study of Instinct (Oxford University Press)

Tinbergen, Niko. 1958. Curious Naturalists (Country Life, Ltd.)


Suggested Websites

Zoo Atlanta- www.zooatlanta.org

Animal Taxonomies- www.york.biosis.org/zrdocs/taxhier/index.htm

The Electronic Zoo - http://netvet.wustl.edu/e-zoo.htm

National Museum of Natural History (U.S.) www.mnh.si.edu/nmnhweb.html

National Geographic Nature http://enature.nationalgeographic.com/

Animals in Art - http://hirshhorn.si.edu/education/animals/animals.html

Amazing Animals in Art - http://www.artsmia.org/animals/animals_activities.html

Access Excellence- www.accessexcellence.org


Endangered Species Information - http://www.bagheera.com/

Animals in Art Lesson Plans (Elementary) -
http://www.hsv.k12.al.us/schools/art/dixon/animals.htm

It’s a Math World for Animals- http://www.sciencenewsforkids.org/articles/20031008/Feature1.asp


The Association of Biology Laboratory Education (ABLE)- www.utoronto.ca/able/

Biological Timing Online Science Experiment- www.ct.virginia.edu/Olh.exp.html

Technical writing link - http://www.rbs0.com/tw.htm

**Suggested Journals and Magazines**

American Scientist

Animal Behaviour

Applied Ethology

Bird Behavior

Developmental Psychobiology

Discover Magazine

Journal of Comparative Psychology

Psychonomic Society Publications

Science News - The Weekly Newsmagazine of Science

**Graphic Organizers**

The following charts and graphic organizers are examples of supplementary materials for use in assessing student understanding.

1. **KWL chart.** Use this chart to display: K - The information that the student already knows. W - The information that the student wants to learn during the field trip. L - The information that the student does learn during the field trip.

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<tr>
<th>K</th>
<th>W</th>
<th>L</th>
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2. **Venn Diagram.** Used to display the similarities and differences between two animals, habitats, etc. Example:

![Venn Diagram Example](image)

3. **Concept Map.** A concept map provides a tool for the student to demonstrate an understanding of concepts by allowing the student to display extensive information in a concise manner. Example:

![Concept Map Example](image)

4. **Compare and Contrast.** The students will gain a better understanding of animal characteristics by observing the similarities and differences between species of animals. Example:

<table>
<thead>
<tr>
<th>The animals are alike:</th>
<th>The animals are different:</th>
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<tbody>
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<td>Exemplary 4</td>
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<tr>
<td><strong>Tasks</strong></td>
<td>Consistently demonstrates the ability to perform tasks.</td>
</tr>
<tr>
<td><strong>Use of Scientific Language</strong></td>
<td>Consistent, accurate usage of terms.</td>
</tr>
<tr>
<td><strong>Concepts</strong></td>
<td>Demonstrates full understanding of concepts.</td>
</tr>
<tr>
<td><strong>Teamwork</strong></td>
<td>Assumed leadership role within group; strong contributions.</td>
</tr>
<tr>
<td><strong>Application to the Real World</strong></td>
<td>Able to apply learning.</td>
</tr>
<tr>
<td><strong>Communication</strong></td>
<td>Uses rich, vivid, and powerful description in a variety of ways to clearly communicate observations, data, and conclusions.</td>
</tr>
<tr>
<td><strong>Presentation</strong></td>
<td>Presents information in logical, interesting sequence; demonstrates full knowledge (more than required); Maintains eye contact; Uses a clear voice; pronounces words correctly.</td>
</tr>
</tbody>
</table>