



◀▶ Education Program Packet—6th Grade ▶◀

Zoo Atlanta Education Programs:

Zoo School Classroom: Earth Matters

Zoomobile Outreach: Creature Connections

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:** Art, Language Arts, Social Studies, Science, Technology
◀▶ **Grades:** 6th

Activity Packet: Stage 1-Desired Results

Packet Established Goals:

- **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.
- **S6CS2.** Students will use standard safety practices for all classroom laboratory and field investigations. **b.** Demonstrate appropriate techniques in all laboratory situations.
- **S6CS4.** Students will use tools and instruments for observing, measuring, and manipulating equipment and materials in scientific activities. **b.** Estimate the effect of making a change in one part of a system on the system as a whole.
- **S6CS5.** Students will use the ideas of system, model, change, and scale in exploring scientific and technological matters. **a.** Observe and explain how parts are related to other parts in systems such as weather systems, solar systems, and ocean systems including how the output from one part of a system (in the form of material, energy, or information) can become the input to other parts. (For example: El Nino's effect on weather)
- **S6CS6.** Students will communicate scientific ideas and activities clearly. **c.** Organize scientific information using appropriate simple tables, charts, and graphs, and identify relationships they reveal.
- **S6CS9.** Students will investigate the features of the process of scientific inquiry. Students will apply the following to inquiry learning practices: **a.** Scientific investigations are conducted for different reasons. They usually involve collecting evidence, reasoning, devising hypotheses, and formulating explanations. **e.** The ethics

of science require that special care must be taken and used for human subjects and animals in scientific research. Scientists must adhere to the appropriate rules and guidelines when conducting research.

- **S6CS10.** Students will enhance reading in all curriculum areas by: **c.** Building vocabulary knowledge: Demonstrate an understanding of contextual vocabulary in various subjects. Use content vocabulary in writing and speaking. Explore understanding of new words found in subject area texts.
- **S6E5.** Students will investigate the scientific view of how the earth's surface is formed.
i. Describe methods for conserving natural resources, such as water, soil, and air.
- **ELA6R2** The student understands and acquires new vocabulary and uses it correctly in reading and writing.
- **ELA6RC2** The student participates in discussions related to curricular learning in all subject areas.
- **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.
- **ELA6C1** 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.
- **ELA6LSV1** The student participates in student -to-teacher, student-to-student, and group verbal interactions.
- **ELA6LSV2** The student listens to and views various forms of text and media in order to gather and share information, persuade others, and express and understand ideas.
- **SS6G1** The student will be able to describe and locate the important physical and human characteristics of Latin America and the Caribbean and Canada.
- **SS6G2** The student will discuss the impact of government policies and individual behaviors on Latin American and the Caribbean and Canadian environment.
- **SS6G3** The student will explain the impact of location, climate, physical characteristics, natural resources and population size on Latin America and the Caribbean and Canada.
- **SS6G4** The student will describe the cultural characteristics of Latin America and the Caribbean and Canada
- **SS6E1** The student will describe different economic systems (traditional, command, market, mixed) and how they answer the basic economic questions: What to produce? How to produce? For whom to produce?
- **SS6E3** The student will describe the factors that influence economic growth and examine their presence or absence in countries such as Canada, Mexico, Brazil and Argentina.

<p>Understandings: Students will understand that...</p> <ul style="list-style-type: none"> • Organisms on Earth derive their energy from the sun or chemical reactions. • One organism consuming another results in the transformation of energy through pathways called food chains or webs. • Through food webs, matter is recycled as organisms interact with each other as producers and consumers, including decomposers. • The stability of ecosystems depends upon the interdependence of organisms. Relationships include producer/ consumer, predator/prey, and parasite/host organisms. • All organisms have adaptations, inherited characteristics that enhance their ability to survive in their natural environment. However, the more variations there are within a species, the better chance the species has of survival in a changing environment. • Changes in ecosystems, such as habitat destruction, introduction of new species, or climate change can result in the endangerment or extinction of individuals and indigenous species. 	<p>Essential Questions:</p> <ul style="list-style-type: none"> • How do anatomical features reveal the way of life of an organism? • What happens to matter and energy as it passes through a food chain? • How do you affect animal survival? • Why should you promote biodiversity in all areas of the Earth? • How does the extinction of a species impact you?
<p>Students will know...</p> <ul style="list-style-type: none"> • A community is all of the populations inhabiting a particular place. • Producers are usually photosynthetic organisms that convert light energy into the potential energy of chemical bonds of food. • Consumers are organisms that take in the food of producers for energy and raw materials. • Organisms interact in three main ways: competition, predation and symbiosis. • Organisms compete with one another 	<p>Students will be able to...</p> <ul style="list-style-type: none"> • Keep honest, clear and accurate records in science. • Acquire new vocabulary and use it correctly in reading and writing. • Read across subject areas. • Demonstrate competence in a variety of genres. • Develop, revise, and evaluate writing.

<p>for shared resources that are limited.</p> <ul style="list-style-type: none"> • Predator/prey relationships consist of a predatory consumer and a prey that may be a lower level consumer or a producer. • Organisms evolve characteristics that enable them to more efficiently obtain energy and raw materials. • Symbiosis is the close relationship between two or more species. Parasite/host and mutualist/host are two examples of this kind of relationship. • The survival of animals in their natural habitats is enhanced by the characteristics, called adaptations, which they have inherited from successful parents. • The natural selection of these adaptations involves many interacting, complex factors, both living (biotic) and non-living (abiotic). • When humans alter the abiotic factors within the habitat, the biotic factors are impacted. 	<ul style="list-style-type: none"> • Use Internet resources. • Use safe animal handling techniques.
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Stage 2-Assessment Evidence

Performance Tasks:

- Reading and recording comprehensions
- Role-playing
- Collecting and organizing data and recording conclusions
- Writing and revising
- Drawing
- Reporting research information
- Lab reports

Key Criteria

- 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

Stage 3-Learning Plan

Learning Activities

Pre-visit Classroom Activities

ABC Book of Environmental Issues

Art – Illustrating terms of environmental issues

Science – Researching environmental issues

Language Arts – Creative Writing – ABC Book

Technology – Research – Environmental Issues

- Earth must support a very large number of living things with a limited amount of raw materials. Many of these raw materials are recyclable. However, human beings have been successful at changing the Earth's environments to suit their purposes, and in doing so, have changed the amounts of raw materials available to other organisms.
- The term "sustainable habitats" describes places for living things to call home in which regeneration, recycling, and renewal of the raw materials required by the inhabitants occurs over the long term. A goal of sustainable development is to promote healthy living conditions for humans and the ecosystems that support them.
- ABC Book - The students are to create an ABC Book of Environmental Awareness. After researching environmental issues, the students are to find, for each letter of the alphabet, a word or term that describes an environmental issue, illustrate it with a picture or graphic, and write a short paragraph. For example, the letter A can represent Acid Rain, with descriptions and pictures of causes and effects. The pages can then be assembled into a booklet. This could be assigned as group work, or students could be assigned individual pages to create one class book.

Ecotourism

Art – Illustrating research information- ecotour brochure

Science – Researching the adaptations, niches, and habitats of animals

Language Arts – Creative Writing – ecotour advertisements

Social Studies – National policies research

Technology – Internet research – food webs, interdependence, biodiversity

- The countries of Latin America host some of the most diverse communities of life on Earth. The tropical climate, with its extremes of elevation, provides the resources that allow life to flourish. The increase in human activities, however, has made an impact on many populations. The animals of Latin America have suffered from pollution, food loss, and habitat destruction. But a relatively new industry, ecotourism, may be in time to save them.
- The International Ecotourism Society (TIES) defines ecotourism as *"responsible travel to natural areas that conserves the environment and improves the well-being of local people."* By protecting the environment, and at the same time, sharing it with travelers, the governments realize that the economy can benefit from ecotourism. And, in turn, the animals also benefit.
- Develop a travel brochure that will describe an ecotour to a Latin American country.

Select a Latin American country, and research its environment, animals, economy and other features. Play the role of an ecotour operator, and write a brochure to advertise your company. Select or create images to put on your brochure that illustrate the country and its inhabitants accurately. Include descriptions of some of the many animals that one would expect to see. Use an 8 ½ x 11 piece of paper, folded twice to make a tri-fold brochure, to place the advertisement and graphics.

Post-Program Zoo Activities

- **Animals in Danger– Threatened and Endangered Species.** Tour the Zoo and identify the animals that are from areas where environmental issues have made the animals threatened or endangered. Record the name of the animal and the area where it lives naturally. Describe the environmental issue that is causing the endangerment (for example, habitat destruction).
- **Adaptations of Animals – Compare and Contrast.** While touring the Zoo, make a list of the animals that could live in a Latin American country if transplanted into it. These are the animals that fill a similar niche and correspond to those that actually live in Latin America. Beside each animal's name, write some of the adaptations that allow that animal to be successful within its own habitat.

Post-visit Classroom Activities

Planning Commission

Social Studies - Policy-making, government, public presentations, economics

Science – environmental issues, sustainable habitats

Language Arts – presenting, writing, reading across the curriculum

- Assign roles for students in a mock planning meeting of government officials who are deciding how to spend state money for green space development in their county. Some of the roles would be planning commissioners (about 5); commercial developers; building contractors; landscape architects; road developers; arborists; ecologists; environmental engineers, etc. Students are to research the current laws of green space development, property laws, planning strategies and building codes. Each student will write a report describing his/her occupation and responsibilities. The planning commission meeting can then be held, with all participants presenting ideas for developing a sustainable habitat beneficial to humans and the environment. Afterwards, each student will produce evidence of understanding by writing a conclusion discussion of the meeting.

Latin American Summit

Science – endangered and threatened species

Social Studies – governmental policy-making

Language Arts – role-playing, presenting, writing

- Students will research the animals of North, Latin and South American countries that are endangered or threatened. They will also research the governmental policy on endangered species and environmental protection for an assigned country. The students will then take on the role of ambassador from that country that will attend a

summit to discuss the protection of the environment and the biodiversity. During the summit, the students will explain the policies of their country. At the end, a discussion of the policies should be conducted, with suggestions for improvement given to each country by the summit participants. Evidence of understanding will be obtained when the students write a conclusion discussion of the assignment.



Suggested Reading

Boo, Elizabeth. Ecotourism : the potentials and pitfalls by Elizabeth Boo. Washington, D.C. World Wildlife Fund, c1990. 2 v. ; 28 cm.

Clark, Gerald. The coming explosion in Latin America. New York, D. McKay Co. [1963] 436 p. 22 cm.

Considine, John Joseph, 1897- New horizons in Latin America. Illustrated with photo. Freeport, N.Y., Books for Libraries Press [1970, c1958] xvi, 379 p. illus., map. 23 cm.

Duncan, W. Raymond (Walter Raymond), 1936. The quest for change in Latin America: sources for a twentieth-century analysis, edited by W. Raymond Duncan and James Nelson Goodsell. New York, Oxford University Press, 1970.xiv, 562 p. 22 cm.

Ecotourism: a sustainable option? edited by Erlet Cater and Gwen Lowman. Chichester; New York: Wiley, 1994. x, 218 p.: ill., maps; 24 cm.

Fox, David John. Cities in a changing Latin America: two studies of urban growth in the development of Mexico and Venezuela [by David J. Fox and D. J. Robinson] London, Latin American Publications Fund, 1969.[5], 48 p. maps, plans.

Heath, Dwight B., ed. Contemporary cultures and societies of Latin America: a reader in the social anthropology of Middle and South America and the Caribbean. Edited, with introductions and notes, by Dwight B. Heath and Richard N. Adams. New York, Random House [1965] xi, 586 p. illus. 25 cm.

James, Preston Everett, 1899- Latin America by Preston E. James. Maps by Eileen W. James. 4th ed. New York, Odyssey Press [1969]xx, 947 p. illus., maps (part col.) 24 cm.

Nature in cities: the natural environment in the design and development of urban green space edited by Ian C. Laurie. Chichester ; New York : Wiley, c1979. xix, 428 p.; ill. ; 25 cm.

Prospects for Latin America. David S. Smith, editor. New York, Columbia University [1970] xii, 384 p. 21 cm.

Shaping a new world; an orientation to Latin America, edited by Edward L. Cleary. Maryknoll, N.Y., Orbis Books [1971]xiv, 319 p. 24 cm.

Wolf, Eric R., 1923- The human condition in Latin America by Eric R. Wolf and Edward C. Hansen. New York, Oxford University Press, 1972. x, 369 p. illus. 24 cm.

Suggested Websites

Zoo Atlanta – www.zooatlanta.org

Association of Zoos and Aquariums – www.aza.org

World Wildlife Fund - http://www.wwf.org.uk/core/wildlife/fs_0000000039.asp

Latin American Information Center - <http://lanic.utexas.edu/>

Latin World - <http://www.latinworld.com/>

Latin American Geography - <http://www.geographia.com/indx05.htm>

Planeta- Ecotourism - <http://www.planeta.com/>

Latin American Travel Association - <http://www.lata.org/home.html>

The 5 Es - Sustainable Development - http://www.eeeee.net/residential_design.htm

Nature Tourism - <http://naturetourism.alleghey.edu/sustainabledevelopment.html>

Cities and Sustainability -
<http://www.wistp.murdoch.edu.au/teaching/istpline/studygds/S455/Week%2011.html>

The Sustainable Metropolis -
<http://www.metropolismag.com/html/sustainable/case/economicsofec.html>

12 Features of Sustainable Community Development -
<http://www.cardinalgroupp.ca/nua/ip/ip01.htm>

Large Scale City Development - http://www.sustainable-city.org/document/primer/text_2.html

Graphic Organizers



Animals in Danger

Name _____ Date _____

Animal	Country	Reason for Endangerment

Green Space Development

Role	Job Responsibility	Position Statement



Compare and Contrast

Name _____ Date _____

Directions: Write the names of Zoo animals, and assign a Latin American animal to each one according to the characteristics that indicate a similar role in their habitats. The students then place check marks in the boxes that describe the animals, and leave blank the boxes that describe a characteristic not found. Students should add any adaptations the animals have.

Zoo Animal / Latin Am. Animal	Herbivore	Carnivore	Nocturnal	Diurnal	Adaptations
tiger/ jaguar		X X	X	X	
colobus monkey/ howler monkey	X X			X X	



Latin America Summit

Name _____ Date _____

Country	Population	Endangered Species	Policy





RUBRIC

	Exemplary 4	Accomplished 3	Developing 2	Beginning 1
Tasks	Consistently demonstrates the ability to perform tasks.	Usually demonstrates the ability to perform tasks.	Sometimes demonstrates the ability to perform tasks.	Rarely demonstrates the ability to perform tasks.
Use of Scientific Language	Consistent, accurate usage of terms.	Adequate usage of scientific terms.	Occasional use with few errors.	No terms or frequent errors in usage.
Concepts	Demonstrates full understanding of concepts.	Displays a complete and accurate understanding of concepts.	Displays an incomplete understanding of concepts.	Demonstrated severe misconceptions about concepts.
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.