African Adventure Safari Unit Plan

Title: African Adventure Safari

Description: Student naturalists help safari guests learn about diversity, interdependence, and wonder of life in the African wild.

At a Glance

Grade Level: 3-5

Subject sort (for Web site index): Science

Subject: Life Science

Topics: Ecology, Animals

Higher-Order Thinking Skills: Synthesis, Creativity

Key Learnings: Diversity, Habitat, Interdependence, Conservation

Time Needed: 4 weeks, 45-minute lessons, daily

Background: www.intel.com/education/unitplans/african/african_classinfo.htm

Unit Summary

Each student becomes an expert on one of the animals native to Africa and contributes important information to a safari field guide. Each student investigates the natural history of the animal and learns about the animal's habitat, ecological niche, interdependence, relative position in a food web, adaptive features and behaviors, and conservation. With their research behind them, each student "becomes" an animal and creates a multimedia presentation written primarily from the animal's point of view.

Curriculum-Framing Questions

- **Essential Question**
  What is the price of life?

- **Unit Questions**
  If you were an African animal, which one would you most like to be and why?
  If your animal could speak, how would it describe itself and its life in Africa?
  Are all animals worth protecting?

- **Content Questions**
  How are living things connected in their habitat and in what ways do they need each other to survive?
  How do animals in Africa adapt to their environment?
  What do African animals need to survive?
  What are the characteristics of African animals?

Assessment Processes

View how a variety of student-centered assessments are used in the African Adventure Safari Unit Plan. These assessments help students and teachers set goals; monitor student progress; provide feedback; assess thinking, processes, performances, and products; and reflect on learning throughout the learning cycle.

Instructional Procedures

Preparing for the Unit

Stock the classroom library with books about African animals and the African ecosystem. African animal picture cards and example field guide pages could be useful for students as they conduct research and create their projects.

Introducing the Unit

Introduce the unit through the following scenario:

> Jungle Jeep Safari Company needs an animal field guide. They will distribute copies to their guests so the guests can identify and appreciate various African animals on the safari tour. The company also wants a multimedia presentation they can show to guests as they gather at headquarters before they set off on their safari. Your job is to become an expert on one animal and develop a page about the animal to add to the field guide. Jungle Jeep Safari Company is very excited to have your help!

Send a [letter](#) home that describes the activities of the unit and enlists parent help. Play a brainstorming game with the class to get students thinking about African animals and tapping into their prior knowledge. Working in small groups, have students think of and list as many African animals as they can in five minutes. After five minutes are up, bring the class back together and facilitate a round-robin, instructing each group to contribute only one animal at a time. Continue with the round-robin until lists are exhausted. Add each new animal to a class list and post it in the room for student reference or publish it for students to add to their unit work collection. Challenge students to continue adding animals to the class chart as they discover them through the research process.

Posing Questions and Eliciting Prior Knowledge

Pose the Essential Question, *What is the price of life?* Have students give examples of things we put a price on, for example, food, clothing, toys, and so on. In small groups, have students begin to talk about the Essential Question and brainstorm their thoughts, examples, and ideas. Bring the discussion back to the whole group and chart the group's responses. Use student responses to facilitate a discussion about animal conservation, overpopulation, and other environmental concerns. Keep this chart to refer to as the unit unfolds.

Before students select their animals for research, engage in an activity that encourages and empowers the students to drive their own learning. A Know-Wonder-Learn (K-W-L) activity is a great way to elicit questions from students and make the learning their own. Ask students what they know about African animals already and what they wonder about them as well. Keep returning to the K-W-L questions to prompt thinking and investigation throughout the unit. As students generate questions, put the questions on big strips of paper, which can be organized according to the elements of the field guide activity (conservation, habitat, and so on).

Field Guide Learning Activity

To get students involved in the field guide activity, pose the Unit Question, *If you were an African animal, which one would you most like to be and why?* Using the African animal chart started at the beginning of the unit, have students select and list three choices. Choose student names from a hat or bucket. When students are

called, have them choose an animal from their list. To avoid duplication, have students cross out animals that have already been chosen. Develop a class list on chart paper showing the animal each student will be researching.

Enlist students to suggest ways they can begin researching their African animal. Each African animal investigation will result in a field guide page done in publishing software and will include the elements in the following Field Guide Requirements List:

Field Guide Requirements List
- Food web showing sun, producer, primary consumer, secondary consumer, and decomposer relationships
- Section telling how to spot the animal on safari (based on a synthesis of information about habitat, ecological niche, adaptation, and interdependence)
- Section about conservation (an analysis of the underpinnings of biological success as well as health of the species)
- Section about the animal's survival in the wild
- Section about the price of life
- Picture of the animal
- Facts-at-a-glance section (general characteristics of the animal)

The class should have studied the concepts of habitat and interdependence before independent study begins. Mini-lessons might be necessary along the way, or the research steps might need to be modeled to help students further develop concepts.

Teacher Modeling and Getting Started
After choosing their animals to study, students can narrow their focus onto their own animal by using an individual K-W-L chart. Model research and citation skills. Use the field guide example to show students the format being used and an example of quality work. Make a research packet by attaching the K-W-L chart to the guided note-taking sheet. Students can use the research and citation note-taking sheet to record information as well. Have students use peer conferencing to get feedback on their work throughout the project.

Researching African Animals
As students dive deeper into their research, they will address and answer the following Essential, Unit, and Content Questions:
- *What is the price of life?*
- *If you were an African animal, which one would you most like to be and why?*
- *What do African animals need to survive?*
- *What are the characteristics of African animals?*
- *Are all animals worth protecting?*
- *How are living things connected in their habitat and in what ways do they need each other to survive?*

Allow several days for students to work on their investigations, and encourage them to use a variety of resources. Guide and assist students as needed during this process, taking anecdotal notes to keep track of individual needs. While the whole class is busy conducting research, meet individually with students to check their work, answer questions, and discuss their progress or any problems they may be having.

Creating Field Guide Pages

After students have gathered their information, they will create and publish a page for the field guide, using publishing software. Refer to the field guide example again and answer any questions. Have students use the field guide template as they input their own African animal information, pictures, and graphics. After all students have completed the field guide pages, place them in a class book for the classroom library.

Multimedia Presentations

To get more involved into African animal research, have students create multimedia presentations from the perspective of the animal they are researching. This multimedia presentation should address and answer the following Essential, Unit, and Content Questions:

- *What is the price of life?*
- *If you could be any African animal, which one would you be and why?*
- *If your animal could speak, how would it describe itself and its life in Africa?*
- *How are living things connected in their habitat and in what ways do they need each other to survive?*
- *Are all animals worth protecting?*
- *How do animals in Africa adapt to their environment?*
- *What do African animals need to survive?*
- *What are the characteristics of African animals?*

To get started, show students a sample of slides in the student example presentation on the cheetah. Explain that they will be using much of the information they have gathered for their field guide to create their slideshow presentations, but additional research will be necessary. Each student will be writing the presentation from the animal's point of view and talking as the animal to answer the Unit Question, *If your animal could speak, how would it describe itself and its life in Africa?* Have students refer to a storyboard planner to gather the information needed for the slideshow. Pass out the presentation scoring guide. Discuss project requirements and assessment criteria before the research begins. Check for understanding to ensure that students are aware of the assigned tasks.

To affirm student work, invite other faculty members, a buddy class, school personnel, and parents to attend a virtual safari showcase in the computer lab. Students will distribute copies of their field guide to the guests and will showcase their presentations to the audience.

Multimedia Presentation Requirements

The presentations should include at least one slide for each of the following topics:
- Title
- Physical features of the animal
- How the animal is built and special characteristics
- Comparison of the animal to humans (size, speed, longevity, sensory acuity, food consumption, care of young, and so on), with pictures and a graph
- Where the animal lives, with a map
- Animal's habitat, with a picture
- How the animal hunts and the types of food it eats, with a picture
- Food web and a description of how it all connects

- Animal's family life
- The future of the animal
- Response to the question, *What is the price of life?*
- Summary that tells why the animal was chosen

Distribute a presentation checklist to help students monitor their progress as they work on the presentation.

Note: *The example presentation does not include all of the above requirements. It is only a sampling of what students will be required to do. Refer to the presentation scoring guide for presentation expectations.*

Wrapping Up
Have students refer to the class K-W-L chart created at the beginning of the unit. Prompt students to discuss what they have learned during their research and throughout the unit. Record responses in the Learn section of the chart. Revisit the Essential Question, *What is the price of life?* Look back at the original responses from the beginning of the unit. Begin a discussion on the Essential Question and have students use examples from their own animal research to answer and discuss. A follow-up paragraph or reflection essay about the Essential Question, with examples from their research, could be used as a portfolio piece. Use this time to discuss what makes African animals unique and special to Africa, based on what students have researched and learned throughout the unit.

Optional Extension Activity
As an extension activity, if time allows, have student groups create a Web site that answers the Content Question, *How are living things connected in their habitat and in what ways do they need each other to survive?* Assemble habitat groups of three or four students based on the food web study during the field guide research. Tell students that their Web site should include one page for each of the following:
- Description of their shared habitat and biological niches
- Food web relationships in the shared habitat (this will require synthesis of individual food web efforts and expansion to include other animals and plants)
- Adaptive abilities and characteristics that relate to the habitat that promote survival (such as getting food, minimizing risk, and so forth)
- Comparisons of animals to each other or to humans (size, speed, longevity, sensory acuity, food consumption, care of young, and so forth)
- Survey form to collect data from Web site visitors about material relating to the site's content

A Web site storyboard may be used to help students plan and structure their work.

Prerequisite Skills

- Writing process

- Research skills

- Computer keyboarding

Differentiated Instruction

Resource Student

- Let pairs of students study one animal

- Have the student focus on a few pieces of the research rather than the entire assignment

- Modify the amount of work required but try to maintain depth

- Provide more support, using teaching assistants, parents, and student helpers

- Provide extra time to complete activities (possibly during resource classes)

- Modify note-taking methods to include the use of graphics or dictation

Gifted Student

- Encourage the student to investigate more complex questions

- Encourage the student to work with a group and create a multimedia slideshow presentation based on the similarities and differences among their animals

- Encourage the student to create a class Web site that highlights key learnings, student work, pictures, interviews, and additional information

- Encourage the student to include more advanced technical attributes in presentations
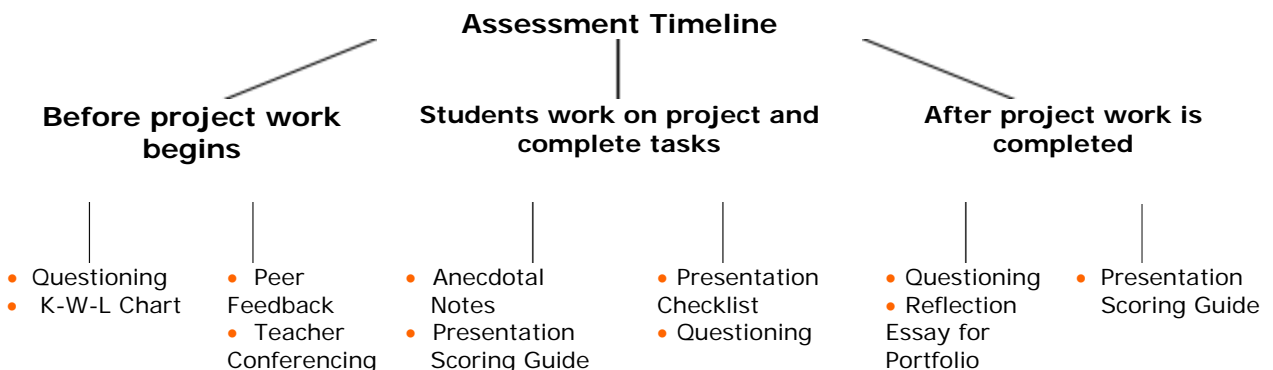
English Language Learner

- Provide some research resources in the student's native language

- Provide auditory resources, such as tapes, and provide print resources that are at an appropriate reading level

- Allow for a project with simpler sentences, but encourage more comparisons and numerical or graphical representations

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Credits

Curt Tiffany participated in the Intel® Teach Program, which resulted in this idea for a classroom project. A team of teachers expanded the plan into the example you see here.

Things You Need

Assessment Plan

Assessment Timeline

Before project work begins	Students work on project and complete tasks	After project work is completed
• Questioning • K-W-L Chart	• Peer Feedback • Teacher Conferencing	• Anecdotal Notes • Presentation Scoring Guide	• Presentation Checklist • Questioning	• Questioning • Reflection Essay for Portfolio	• Presentation Scoring Guide

Questioning occurs throughout the unit to probe student thinking and allow student reflection. Anecdotal notes assist in keeping track of individual student needs. Students use a K-W-L chart to tap their prior knowledge, ask important questions while they conduct research, and reflect on what they have learned. Peer conferences are held to receive feedback and make appropriate revisions to their work. Teacher conferences are held to provide feedback, guide and assist students throughout the project, and adjust instruction as necessary. Students use a presentation checklist to monitor their progress and a scoring guide to assess their multimedia slideshow. They also complete a reflection essay focusing on the Essential Question that is showcased in their portfolio.

Content Standards and Objectives

Targeted Content Standards and Benchmarks

Oregon Science Standards

Diversity/Interdependence

- Understand the relationships among living things and between living things and their environments.

- Describe how adaptations help an organism survive in its environment.

- Describe the principles of natural selection and adaptation.

- Identify how some animals gather and store food, defend themselves, and find shelter.

- Describe the relationship between characteristics of specific habitats and the organisms that live there.

- Describe the basic needs of living things.

National Educational Technology Standards (NETS)

Technology Performance Indicators

Prior to completion of Grade 5 students will:

1. Use keyboards and other common input and output devices (including adaptive devices when necessary) efficiently and effectively. (1)

5. Use technology tools (such as multimedia authoring, presentation, Web tools, digital cameras, and scanners) for individual and collaborative writing, communication, and publishing activities to create knowledge products for audiences inside and outside the classroom. (3, 4)

6. Use telecommunications efficiently and effectively to access remote information, communicate with others in support of direct and independent learning, and pursue personal interests. (4)

Student Objectives

Science Learning

Students will be able to:

- Understand the relationships among living things and between living things and their environments

- Describe how adaptations help an organism survive in its environment

- Understand the relationship between predators and their prey

- Identify how some animals gather and store food, defend themselves, and find shelter

- Describe changes to the environment that have caused some species to become endangered

- Understand the importance of animal conservation in today's world

Process and Technology Skills

Students will be able to:

- Work cooperatively in small groups

- Take notes from research information and synthesize information into clear writing

- Create presentations using multimedia software

- Create one-page publications using desktop publishing software

- Observe copyright laws

Resources

Materials and Resources

Printed Materials

- Reference books in the school library and classroom
- Teacher-made planning sheets

Supplies

- Paper for drawing, writing, and printer
- Colored pencils and markers
- Glue sticks
- Scissors
- Rulers
- Poster board
- Blank disks for students to save their work

Internet Resources

Cheetahs

- Natural History Museum of Los Angeles County
  www.lam.mus.ca.us/cats/encyclo/jubatus/index.htm*

  Cheetah facts and pictures

- The Cheetah Spot
  www.cheetahspot.com*

  Facts about the cheetah

- PBS Cheetahs in a Hot Spot
  www.pbs.org/wnet/nature/cheetahs*

  Facts, pictures, and video of cheetahs and other African animals

- The Trade Environment Database (TED)
  www.american.edu/ted/cheetah.htm*

  Information about cheetah conservation in Southern Africa, based on a case study outlining the decline of cheetahs and what is being done to protect and save them

African Animals

- Kids' Planet Fact Sheets
  www.kidsplanet.org/factsheets/map.html*

  Information about African animals

- Yahooligans
  www.yahooligans.com*

  Search for African animals to find facts about them

- Discovery Kids
  http://kids.discovery.com*

  Search for information about African animals

- African Virtual Game Reserve
  www.africam.com*

  Webcam that shows different parts of the African landscape and animals in action

- African Wildlife Foundation
  www.awf.org/wildlives*

  Information about African animals, and a place to adopt African animals

- Zoobooks Magazine

  www.zoobooks.com/*

  A kid-friendly Web site about animals with educational games, and information about animals

- National Geographic Kids

  www.nationalgeographic.com/kids/index.html*

  Information on animals of the world with games, stories, and pictures

Technology—Hardware

- Computer for research and creating brochures and slideshow presentations

- Internet connection to research African animals and visit Internet sites

- Projection system to show examples to students

Technology—Software

- Desktop publishing to publish brochures and slideshow presentations

- Encyclopedia on CD-ROM for researching African animals

- Internet Web browser to visit sites for research

- Web page development for optional Web site