

2011-2012 Lesson Plan for Henrico 21 Awards

Lesson Title: Animal Adaptations and the Classroom Zoo

Target Grade/Subject: Third Grade Science

Length: 200 minutes- 5, 40 minute sessions

Summary: *(Summarize your lesson in 250 words or less)*

Students begin with brainstorming their favorite animal and its habitat. Students then form collaborative groups (scientific teams) of 3 or 4 and are given a challenge to 'create' an animal and get their animal into the Classroom Zoo. 'Scientific teams' will design and build a three-dimensional model of an animal adapted to survive in the choice of one of the following environments; forest, desert, grassland, rainforest, marshland, swamp, pond, river, ocean or stream. The appropriate physical and behavioral adaptations have to be included in the design process. The animal must also meet a list of criteria; must stand on its own, have at least one moving part, and have no fewer than two adaptations. After the animal is constructed, the students have to create a scenic background to represent their chosen environment. Once the animals and model habitat are complete the 'teams' will prepare a presentation for the zoo board to lobby to have their animal included. Teams must be sure to define what type of habitat would need to be built for their animal to be successful as well as convince the zoo board of why their animal should be included. Students will make their 'presentation' to the board (students and key teachers), sharing their animal, its habitat, and its adaptations. Students will have their choice of multimedia tools to create their presentation.

Essential questions: *(What are the foundational questions that students should be able to answer after this lesson?)*

Why are adaptations important to animals? In what way does an animal's habitat effect its adaptation? What are essential elements within a habitat for certain animals? The students will be able to distinguish between physical and behavioral adaptations, predator versus prey, consumers, and how an environment supports a diversity of plants and animals while sharing limited resources. These concepts support the Science SOL 3.4 a-b. and 3.6. What does responsible research look like? How do you include and use other peoples information without stealing it?

Lesson Development:

Process/Tasks/Assessment: *(Describe what the teacher and students are doing during this lesson. Include details about particular tasks and essential resources/tools. Include a description of the artifact that you will collect as evidence of content/skill mastery and state how you will communicate your assessment expectations to the students.)*

Technology Used: laptop computers, beam, cameras, Pixie, PhotoBooth, Blabberize, online databases; i.e. Encyclopedia Britannica online, various research websites through sweetsearch.com, and copyright free image websites.

Other Required Resources: Variety of print resources, materials to complete the Children's Engineering Design challenge:

Materials:

Construction paper	Tissue Paper	Cotton balls	Plastic containers
Brads	Pipe cleaners	Cloth/felt	Cardboard/boxes
Boxes	Newspaper	Paste/glue	Aluminum foil
String/Yarn	Cardboard tubes	Ribbon	Craft sticks

Tools:

Scissors	Ruler	Hole Punch	Markers
Crayons	Colored Pencils	Yard Stick	

Lesson Development:

Process/Tasks:

1. Students brainstormed their favorite animals. These animals must be alive somewhere in the world today.
2. Students form groups of 4 and justified why their animal should be chosen by the group. They decided team roles; which team member will research topic: physical adaptations, behavioral adaptations, habitat, and fun facts about the animal.
3. Teams attended library lessons where they will learn about the research process, and how to evaluate several websites for relevance to their topic and accuracy of information.
4. Teams used library resources to research their animals. Students generated questions to drive their research on their chosen topics.
5. Teams reflected on the usefulness and applicability of their chosen resources and cited their sources as they are collecting their information.
6. Upon completion of research, teams were presented with their Children's Engineering design challenge –

Challenge: Your scientific team wants to bring a new animal to the Classroom Zoo. Design and build a three-dimensional animal. Be sure to include the appropriate physical and behavioral adaptations. You must provide a scenic background (**forest-**

desert-grassland-rainforest-marshland-swamp-pond-river-ocean-or stream) for your animal that represents the environment in which it lives as well as being able to explain to the Zoo Board of Directors what would be needed to make a suitable 'zoo habitat' for your animal. Your team will be given multimedia resources to prepare a presentation on your animal to the Zoo Board of Directors.

Animal Criteria:

Your animal must:

- Be three dimensional
- Stand on its own
- No larger than 24 inches
- No fewer than 2 adaptations
- At least one moving part

7. Teams completed design challenge utilizing their research.

8. ITRT presented samples of the technology choices. Some choices were utilized prior to the project and will receive a quick review.

9. Teams developed a plan, scripts, or rough drafts of their presentation supporting their research while the teacher monitored progress and assisted as needed.

10. Teams worked together to decide on an appropriate presentation. Students were allowed to utilize more than one multimedia tool for their presentation, i.e. placing a PhotoBooth video inside a Keynote, etc. Students needed to justify the use of tools/resources not listed on the choice board.

11. Students discovered that while web 2.0 resources are wonderful, they don't always work when you need them. Many of the groups chose to use Blabberize as the digital tool to create their presentation. Blabberize was not allowing the groups to record their presentations. Using this as an authentic problem solving situation, the children asked the teacher if they could change their presentation to a familiar program (Photo Booth). This student generated solution ended up teaching the teacher how to better use the program.

12. Teams made their presentation to the 'zoo board'. The students were asked to review all of the presentations and vote for the animal they think should be included in an exhibit at the Classroom Zoo.

TIP Chart Assessment:

(Using the TIP Chart, identify which level (e.g. entry, developing, approaching, ideal/target) your lesson falls in for each of the categories below and write a brief statement to describe what the students are doing as it relates to the indicators on the TIP chart.)

Categories:

Research and Information Fluency: Ideal/Target ~ Students evaluated online databases, websites, and other print reference materials for relevant information. Students created questions to guide their research. Students analyzed information to determine its relevance to their *newly* discovered animal. Teams created a digital presentation that demonstrated physical and behavioral adaptations used to survive in a particular environment.

Communication and Collaboration: Ideal/Target ~ Students initiated communication in real time through their team presentation to the zoo board of directors through the use of the blog to communicate and collaborate with resources beyond the school walls. Students formed and worked in collaborative teams to justify the inclusion of their animal in the Classroom Zoo. Presentations were made available via the blog.

Critical Thinking and Problem Solving: Ideal/Target ~ Students/Teams utilized a variety of print and digital resources to answer self created questions to solve an authentic problem. Digital tools were also utilized to collaborate (a class blog) with resources beyond the school walls. Students created and answered open-ended questions with minimal teacher guidance. There were technical difficulties with the Blabberize when the students began recording their presentations. The students generated a solution so that their presentations could be completed.

Creativity and Innovation: Ideal/Target ~ Teams applied critical thinking skills to utilize their research on animal adaptations to design and build an animal. Students worked collaboratively within their team to identify needed items and design a habitat for their animals to live within successfully. Students were provided with digital resources and allowed choice in how to create their presentation.