

Cactus Hotel

Prickly Technology

Lesson Plan
by Kari Hinkle
Third Grade

Phase 7 TRC- White City Elementary

In this unit of study, students will explore the desert biome. This unit integrates the following curriculum areas: reading, math, science, social studies, art, and technology. Students will use the Internet for research, a digital camera, PowerPoint software, Google Earth and possibly Skype as they complete this unit of study. The timeframe needed to complete this unit could span anywhere from three weeks to several weeks, depending upon the extent and detail of the activities.

Student Outcomes ~ Upon completion of this unit of study, the learner will be able to ...

- Analyze and discuss the differences between watering methods with cacti
- Create a Power Point presentation including digital photographs of fibers inside the cacti that have been watered in different ways
- identify words and phrases to help them define unknown words
- create a Venn diagram to compare/contrast animals that live on the saguaro cactus
- design and create a model of the desert
- research a desert animal, reptile, or bird
- publish compiled research about desert animal, reptile, or bird
- apply mathematical skills to measure and cut rope/twine for actual height of saguaro cacti
- compare height of saguaro cactus with actual rope/twine and student
- locate Saguaro National Monument in southern Arizona
- locate Olympic Mountains in Washington
- compare geographic features of Arizona and Washington
- design and create desert scene using sandpaper, crayons, and newspapers
- Enhancement: exchange power point presentations with classroom in Arizona or Skype with classroom in Arizona



Supplies, Materials, and Resources

- *Cactus Hotel* book and other books about deserts
- cactus and gardening gloves
- twine/rope, tape measure
- pipe cleaners, clay, moss, flower foam, miniature replicas of birds, snakes, desert animals, boxes, glue, scissors, colored pencils, ruler
- sandpaper, crayons, iron, newspaper
- access to Internet

Assessment

- Use rubric to evaluate power point presentation
- Use rubric to evaluate desert model
- Score research writing activity

Activity One ~ Reading

Read and discuss *Cactus Hotel* by Brenda Z. Guiberson with illustrations by Megan Lloyd. This book is an expository piece about the life of a saguaro cactus. It begins with the dropping of the seed, how it sprouts and survives the harsh desert environment. It takes us through its stages of life until the very end when it crashes to the ground and becomes a hotel for those small land dwelling desert creatures.

- Questions for discussion that integrate curriculum
 - In what ways did the author and illustrator bring the desert to life to the reader?
 - How does the cactus survive the harsh desert environment?
 - At what age does the cactus hotel grow arms?
 - What is the purpose of the holes in the cactus hotel?
 - What animals live in the cactus hotel when it is young? Why do the animals choose to live where they do?
 - What animals live in the cactus hotel when it dies? Why didn't they live there when the cactus was alive?

Activity Two ~ Writing Topics

Students will write the following:

- A research paper about a desert animal, reptile, or bird.

Activity Three ~ Math

- Using a tape measure, measure out pieces of rope/twine the exact lengths of the saguaro cactus at various ages.
- Compare cactus height at age 10 to students' height at age 10.
- Analyze how many third graders we would have to "stack" to be as tall as a saguaro cactus at various ages.

Activity Four ~ Science

- Acquire four cacti, water them each differently, one as directed, one with ten times more water than needed, one every day and keep saturated, and the final one no water at all. Cut them open after one week to compare and analyze the fibers inside.
- Design and create a desert model using miniature replicas of desert life and its environment.
- Research a desert animal, reptile, or bird.

Activity Five ~ Social Studies

- Locate the Saguaro National Monument in southern Arizona.
- Locate the Olympic Mountains in Washington
- Locate other national parks and discuss the need to protect unique environments.

Activity Six ~ Art

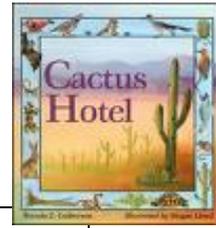
- Draw a simple desert landscape on scratch paper then transfer to sandpaper.

Activity Seven~ Technology

- Using a digital camera take photographs of cacti fibers after cutting them open. Place in a power point presentation.
- Using a digital camera take photographs of students standing or lying by rope/twine cut to saguaro cacti length to compare. Place in a power point presentation.
- Using a digital camera take photographs of our Kansas environment and our school and grounds. Import into power point presentation.
- Exchange power point presentation with teacher in Arizona. Arizona classroom sends a power point presentation to us showing their school and grounds and Arizona environment.
- Skype with teacher and classroom in Arizona.
- Use Google Earth to visit Arizona and Washington

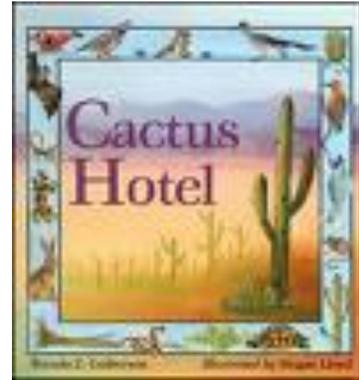


Cactus Hotel PowerPoint Presentation Rubric



Category	4	3	2	1	Points Earned
Background	Background does not detract from text or other graphics. Choice of background is appropriate for this project.	Background does not detract from text or other graphics. Choice of background could have been better suited for the project.	Background does not detract from text or other graphics. Choice of background does not fit project.	Background makes it difficult to see text or competes with other graphics on the page	
Font-Choice & Formatting	Font formats (e.g., color, bold, italic) have been carefully planned to enhance readability and content.	Font formats have been carefully planned to enhance readability.	Font formatting has been carefully planned to complement the content. It may be a little hard to read.	Font formatting makes it very difficult to read the material.	
Context-Accuracy	All content throughout the presentation is accurate. There are no factual errors.	Most of the content is accurate but there is one piece of information that might be inaccurate.	The content is generally accurate, but one piece of information is clearly flawed or inaccurate.	Content is typically confusing or contains more than one factual error.	
Spelling and Grammar	Presentation has no misspellings or grammatical errors.	Presentation has 1-2 misspellings, but no grammatical errors.	Presentation has 1-2 grammatical errors but no misspellings.	Presentation has more than 2 grammatical and/or spelling errors.	
Use of Graphics	All graphics are attractive (size and colors) and support the theme/content of the presentation.	A few graphics are not attractive but all support the theme/content of the presentation.	All graphics are attractive but a few do not seem to support the theme/content of the presentation.	Several graphics are unattractive and detract from the content of the presentation.	
Presentation	Student presented the material with confidence.	Student presented material but could have been more confident.	Student had many difficulties presenting materials.	Student was unable to complete presentation before the class.	
Total Points					

Cactus Hotel
Desert Model Rubric



CATEGORY	Poor 0-6 Points	Fair 7 Points	Good 8-9 Points	Great 10 Points	Total Earned
Completeness	Very little completed on the model	Project is missing several features (3 +)	Project is almost finished, missing a feature or two.	Everything is done.	
Accuracy	Model is not completed enough to check for accuracy	Several Errors (3 +) on accuracy of desert life.	Only 1-3 errors on accuracy of desert life.	Everything is exactly right	
On time	Model never turned in	More than one day late.	One date late	In on or before due date.	.
Total Score					