

Plants and People



Saguaro / Desert Habitat

OVERVIEW

The purpose of this activity is to move students through the completion of an investigation using the scientific method. Having previously made observations, asked questions, made predictions, and gathered evidence, students now analyze their results and draw conclusions about the ethnobotany of selected Sonoran Desert plants. After reviewing what they learned during their visit to the Desert Botanical Garden, students complete a study guide and create a presentation to share their results with others. Students are also encouraged to submit their work for posting online at the Desert Botanical Garden website.

MATERIALS

- Pictures of Sonoran Desert habitats from Stage 1 Introductory Activity (Saguaro / Desert Habitat, Riparian Habitat, Chaparral Habitat, Mesquite Bosque Habitat, Yucca / Grassland Habitat)
- Student Worksheet Ethnobotany Predictions Table from Stage 1 Intr<mark>od</mark>uctory Activity
- Student Study Guide Ethnobotany of Sonoran Desert Plants – Results and Conclusion
- Data Collection Journals (from field trip)
- Poster paper, construction paper, colored markers, scissors, glue



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Yucca / Grassland Habitat

PROCEDURES

- 1. Discuss the students' experiences during their trip to the Desert Botanical Garden. Tell them that in this activity, they are going to use evidence from their trip to make conclusions about the ethnobotany of selected plants from different habitats in the Sonoran Desert. Then they are going to complete a *Study Guide* and create a presentation to share their results with others.
- 2. Review with students the name of the desert we live in (Sonoran Desert) and the characteristics of a desert in general (hot, dry, high evaporation, low rainfall, and extreme temperature fluctuations). Review the terms ethnobotany, habitat diversity and biodiversity. As a class, refer to the Putting it Together section of the *Data Collection Journals* to review some basic uses of desert plants before they divide up and discuss more **specific** uses of each plant.
- Divide students back into their investigative teams (the teams assigned in Stage 1 of this inquiry).
 Give each group the pictures of their habitat used in the Introductory Activity.
- 4. Hand out to each student a copy of the Student Study Guide Ethnobotany of Sonoran Desert Plants Results and Conclusions. Students should work together as a team and focus on their specific habitat, but each student should complete their own Study Guide. They should refer to their Student Worksheets Ethnobotany Predictions Tables and Data Collection Journals as needed to complete Part A of the Study Guide.

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Riparian Habitat

PROCEDURES

- 5. As described in Part C of their *Study Guides*, students should prepare a final presentation of their investigation to share their results and conclusions with the rest of the class. They should develop a creative skit, mock interview, news broadcast, puppet show, etc. that includes information about their Sonoran Desert habitat and how people use the desert plants in their habitat. Students can use the habitat pictures from the Introductory Activity as props, and they can also design simple scenery and props with provided materials (e.g., poster paper, construction paper, colored markers, scissors, glue, etc.). (Optional: Students can bring in props or clothing from home if the skits will be presented the following day.)
- 6. Have each group present to the rest of the class.
- 7. When all groups have finished presenting, gather the class as a whole to conduct a wrap up discussion, using the "Questions for Discussion" in Part B of the Student Study Guide.
- 8. Commend the class for collecting so much evidence on the trip and then using it to make such informative conclusions on the *Study Guide* and producing such creative presentations.

POST YOUR FINDINGS ON THE INTERNET!

As part of the Inquiry Process students may share their work with others by visiting the DBG Journal of Student Findings at http://www.dbg.org/index.php/digital/students/journal. Here, students can submit investigation findings, poems, or original art inspired by their Inquiry in the Garden. For more ideas on art projects that tie into Garden themes, go to the Additional Resources section of the Digital Learning website.



STUDENT STUDY GUIDE -ETHNOBOTANY OF SONORAN DESERT PLANTS -RESULTS AND CONCLUSIONS

Name	Partner Name
eam (desert habitat)	
Part A – Results o	and Conclusions
Instructions: Use the information from y	
Predictions Table and Data Collection	Journal to answer the questions below.
1. What were the key plants you studied in your deser	t habitat?
2. What predictions did you make about the use of the	pose plants?
2. What productions did you make about the osc of the	lose piariis:
	0000
3. What evidence did you gather (what did you see	
involved your plant? Did the evidence support you	or predictions about how the plant is used?
4. How did your predictions compare to the actual u	ses of the desert plants in your habitat?
	11/11/10
5. What conclusions can you make about ethnobota	ny in your desert habitat?



STUDENT STUDY GUIDE -ETHNOBOTANY OF SONORAN DESERT PLANTS -RESULTS AND CONCLUSIONS

	Part B – Question	s for Discussion	
Instructions: A	nswer the questions below		to discuss them with
	s after everyone has comp		
I. In what ways do people	use plants? List as many us	es as you can.	
	1111		
	would you determine whic	s, etc.) and all that h plant would be b	est to help you meet your nee
	would you determine whi <mark>c</mark>		est to help you meet your nee
	would you determine whic		est to help you meet your nee
	would you determine whic		est to help you meet your nee
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plants around you, how v	ut the uses of some desert	h plant would be b	one question and make at

Instructions: As a team, prepare a skit for a final presentation of your investigation. Your skit should inform your audience about how people use the desert plants in your habitat. You can act out a story, produce a mock interview, present a news broadcast, create a puppet show, etc. Be creative! Use notebook paper to first write an outline; then write the script. Create your own scenery and props using a variety of material either from home or provided by your teacher.



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RELATED ADE STANDARDS:

THEATER STRAND 1: CREATE

CONCEPT	PERFORMANCE OBJECTIVE
C1: Collaboration	PO 201: Collaborate to create a scenario/script as a team. PO 202: Collaborate to design and choose the environmental elements for a scenario/script. PO 203: Collaborate and communicate in the rehearsal process. PO 204: Collaborate in informal performances.
C2: Acting	PO 201: Work individually to create characters for theatre and/or other media productions (e.g., for classical, contemporary, realistic, and non-realistic improvisations and scripted plays). PO 202: As a character, play out her/his wants by interacting with others, maintaining concentration, and contributing to the action of classroom improvisations (e.g., scenes based on personal experience and heritage, imagination, literature, and history). PO 204: Communicate sensory images through movement, vocal, visual, or written expression.
C3: Theatre Technology and Design	PO 201: Develop designs that use visual and aural elements to convey environments that clearly support the text. PO 203: Use available art materials, tools, and/or stock scenery (e.g., rehearsal blocks, puppets, curtains, backdrops) to create and convey props and/or setting. PO 204: Create floor plans and props. PO 205: Construct or locate appropriate props to enhance a scene or production.

READING STRAND 3: COMPREHENDING INFORMATIONAL TEXT

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RELATED ADE STANDARDS:

WRITING STRAND 1: WRITING PROCESS

CONCEPT	PERFORMANCE OBJECTIVE
C1: Prewriting	PO 1: Generate ideas through a variety of activities (e.g., brainstorming, graphic organizers, drawing, writer's notebook, group discussion, printed material). PO 4: Use organizational strategies (e.g., graphic organizer, KWL chart, log) to plan writing.

WRITING STRAND 2: WRITING ELEMENTS

CONCEPT	PERFORMANCE OBJECTIVE
C1: Ideas and Content	PO 1: Express ideas that are clear and directly related to the topic. PO 2: Provide content and selected details that are well–suited to audience and purpose. PO 3: Use relevant details to provide adequate support for the ideas.

WRITING STRAND 3: WRITING APPLICATIONS

CONCEPT	PERFORMANCE OBJECTIVE
C2: Expository	PO 1: Record information (e.g., observations, notes, lists, charts, map labels and legends) related to the topic. PO 3: Write in a variety of expository forms (e.g., essay, summary, newspaper article, reflective paper, log, journal).

LANGUAGE ARTS STRAND 3: LISTENING AND SPEAKING

STANDARD	PERFORMANCE OBJECTIVE
Students effectively listen and speak in situations that serve different purposes and involve a variety of audiences.	LS–E2: Prepare and deliver an oral report in a content area and effectively convey the information through verbal and nonverbal communications with a specific audience.

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TEACHER'S GUIDE FOR FOURTH GRADE-NOURY IN THE GARDEN - STAGE 3 Plants and People

RELATED ADE STANDARDS:

SCIENCE STRAND 1: INQUIRY PROCESS

CONCEPT	
C3: Analysis and Conclusions	PO 3: Determine that data collected is consistent with the formulated question. PO 4: Determine whether the data supports the prediction for an investigation. PO 5: Develop new questions and predictions based upon the data collected in the investigation.
C4: Communication	PO 1: Communicate verbally or in writing the results of an inquiry. PO 3: Communicate with other groups or individuals to compare the results of a common investigation.

SCIENCE STRAND 4: LIFE SCIENCE

CONCEPT	PERFORMANCE OBJECTIVE
C1: Characteristics of Organisms	PO 1: Compare structures in plants (e.g., roots, stems, leaves, flowers) and animals (e.g., muscles, bones, nerves) that serve different functions in growth and survival.
C3: Organisms and Environments	PO 1: Describe ways various resources (e.g., air, water, plants, animals, soil) are utilized to meet the needs of a population.

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TEACHER'S GUIDE FOR FOURTH GRADE-NOURY IN THE GARDEN - STAGE 3 Plants and People

RELATED ADE STANDARDS:

SOCIAL STUDIES STRAND 1: AMERICAN HISTORY

CONCEPT	PERFORMANCE OBJECTIVE
C2: Early Civilizations	PO 1: Describe the legacy and cultures of prehistoric people in the Americas: a. characteristics of hunter–gatherer societies b. development of agriculture PO 2: Describe the cultures and contributions of the Mogollon, Ancestral Puebloans (Anasazi), and Hohokam (e.g., location, agriculture, housing, arts, trade networks; adaptation and alteration of the environment).

SOCIAL STUDIES STRAND 4: GEOGRAPHY

CONCEPT	PERFORMANCE OBJECTIVE
C2: Places and Regions	PO 1: Describe how the Southwest has distinct physical and cultural characteristics.
C5: Environment and Society	PO 1: Describe human dependence on the physical environment and natural resources to satisfy basic needs.

EDUCATIONAL TECHNOLOGY STRAND 2: COMMUNICATION AND COLLABORATION

CONCEPT	PERFORMANCE OBJECTIVE
C1: Effective Communications and Digital Interactions	PO1: Communicate digitally with others by selecting and using a variety of appropriate communication tools.
C2: Digital Solutions	PO1: Contribute to a cooperative learning project and demonstrate effective group behaviors while using digital collaborative resources.

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RELATED ADE STANDARDS:

WORKPLACE SKILLS STANDARD 1: STUDENTS USE PRINCIPLES OF EFFECTIVE ORAL, WRITTEN AND LISTENING COMMUNICATION SKILLS TO MAKE DECISIONS AND SOLVE WORKPLACE PROBLEMS.

STANDARD	PERFORMANCE OBJECTIVE
IWP-E6: Speak in a content area (e.g., science, social studies, literature), using vocabulary of the subject accurately; locate and interpret information in documents such as manuals, graphs, and schedules.	PO 1: Deliver a factual presentation using appropriate terminology. PO 2: Use a variety of formats such as data, graphs and technical manuals to support a presentation.

Workplace Skills Standard 3: Students apply critical and creative thinking skills to make decisions and solve workplace problems.

STANDARD	PERFORMANCE OBJECTIVE
3WP-E1: Utilize information acquired from several sources and transfer information learned in one situation to another.	PO 1: Research a designated topic using a wide array of information sources. PO 2: Analyze the information obtained from the research. PO 3: Classify the information obtained from the research.