

Arizona Grown Specialty Crop Lesson Plan

**If It Smells Good,
Is Edible, and
Attracts Wildlife,
Then It's a
Practical Garden!**



LEVEL: Grades 10-12

SUBJECTS: Science, Environmental Science

AZ ACADEMIC STANDARDS: SCHS-S4C3, SCHS-S4C4, SCHS-S4C5

MATERIALS

Lesson plan from landscape design unit "Where Do They Go?"
Reference books to get design ideas - Sunset Western Landscaping Book
Plants that attract butterflies, hummingbirds, and other wildlife - see references
Plants that produce dry and fleshy fruit - Any biology book chapter on flower reproduction
Plants used in cooking - Rodales' Illustrated Encyclopedia of Herbs
Different plant heights (canopies) to attract animals small to large - Desert Botanical Garden
Seasonal plants so garden is active all year long (constant food source) - ASU Arboretum

VOCABULARY

dry and fleshy fruit, life cycle, evolutionary strategy, niche, habitat, nectar, pollen

RELATED LESSONS

Where do They Go?
Don't Wait, Just Propagate!
Let's Make Stew
How do Plants Make Food?
Survival of the Fittest
Getting to the Root of the Matter

This can't be a Plant
Soggy Seeds
Plant Seedling
Plants, Plants and More Plants

SUPPORTING INFORMATION

Practical gardens give us beauty, edibility, and wildlife. Have students look at the guide to plant selections in the Sunset Western Garden Book, and the Sunset Western Landscape Book. Consider which animals you want to attract as that depends on the plants selected. Remember to keep a few things in mind in attracting wildlife: Make sure the plants used (Elderberry, Wolfberry, etc) provide food and shelter for animals. Insect life cycles are unique in that the food source for the adult does not complete with the food source of the larvae. An example is of the monarch butterfly caterpillar that eats milkweed leaves, but the adult butterfly drinks the nectar of the milk-weed flower. Different flowers attract different hummingbirds due to the shape of flower for their bill to fit in. Plants attract insects for other animals to eat. Leave some plant leaf litter, etc. to make this interaction occur. Use mature plants or starter plants to achieve larger plants in a short amount of time. These can be purchased at a nursery. Allow low hanging branches of shrubs to touch the ground which will allow cover for small animals. Have water sources at different levels: ground, medium, high which

BRIEF DESCRIPTION

Practical gardening allows humans and wildlife to use plants in many ways. Humans receive visual, aromatic, and culinary rewards, while insects, birds, and other wildlife receive food and shelter. The ideas learned from the unit on landscape design will allow students to create a living landscape where a combination of shrubs/trees/plants can be used for cooking, aroma, attracting insects, hummingbirds, and wildlife.

OBJECTIVES

To design a landscape that attracts wildlife to your home.
To select and grow plants that attract birds and butterflies.
To select and grow plants that have aromatic qualities.
To select and grow plants that can be used in cooking (herbs).

ESTIMATED TEACHING TIME

One - two weeks for set-up, weekly maintenance (water/weed).

SUPPORTING INFORMATION (cont'd)

ground, medium, high which allows for small animals to keep their distance and not be disturbed or eaten by potential predators. Don't let the water dry up, and replace the water regularly to prevent molds and bacteria from building up. Also consider how much light will be filtering to the ground from the canopy. The choices of plant height determine which plants can survive on the ground due to low light or bright light. By visiting your local nursery, greenhouse, or botanical garden, the students can see how their chosen plants will look before they start to plot them on a map for the area to be landscaped.

GETTING STARTED

(Quantity of Materials):

Classroom set of references, have students break up into groups to design different themes, and then combine them as a class. Paper (8x10), pencils, pens.

PROCEDURES

Look through the selected references of herb and aromatic plants to select plants that occur in the zone you live in. This can be found in the Sunset Western Garden Book by looking at the map from the state you are in and selecting the zone number that occurs near your city. That number is the zone for which all plants will be selected within the book as they will have the most chance for being successful. Create a plan by drawing a map or blueprint to show where the plants would be planted (see diagram). When designing, plan for easy access in the garden as to allow one to collect these plants for cooking without trampling other plants. This spacing of plants is important

to have a user friendly garden. Wildlife attracting plants are placed with the long term shape in mind. Have plants that will cover low, medium, and high canopies (ground cover, shrub or tree). Do the same for the placement of water sources to attract more wildlife. Draw your plan on an 8x10 sheet of paper using a pencil.

This part of the activity is similar to the lesson "Where Do They Go?" Once you have a design and combination of the plants you want, then prepare your area to receive plants. Proceed to the local nursery, greenhouse, or botanical garden to purchase plants. Have students maintain plants throughout the school week (water/weed).

EVALUATION OPTIONS

Were you surprised by the number of plants to choose from in this project? (answers vary)

Did you realize that many of the plants that make up part of a garden are not only beautiful to view, but are also edible? (answers vary)

When sitting still, in any of the gardens viewed on your tours, for 10-15 minutes did you see some wildlife that you never have seen before? What did you observe in your garden? (answers vary)

Have you ever considered why some plants attract certain animals? (plants provide food and shelter for animals)

Did you provide balance of the abiotic conditions of your ecosystem for the biotic organisms? (answers vary)

What could have been done to improve your garden for next year? (answers vary)

EXTENSIONS AND VARIATIONS

-Students will produce a landscape plan of the area with plant placement. This will be the guide for completing the project.

-Once the garden area is planted, students can make a list of the birds, mammals, reptiles, and insects that visit.

-As the garden matures, a meal can be made that incorporates the herbs in cooking.

-Classes can come to the garden to smell the aromatic plants by rubbing the leaves between their fingers, and then bringing the material to their nose.

RESOURCES

American Stamp Co., 12290 Rising Rd., Wilton, CA 95693, (916) 687-7102 voice/fax (Student Landscape Design Kit)

Desert Botanical Garden, 1201 N. Galvin Parkway, Phoenix, AZ 85008, (480)-941-1225 www.dbg.org

Boyce Thompson Arboretum Highway 60E, Superior, AZ (520) 689-2811 (recording) (520) 689-2723 (operator)

<http://cals.arizona.edu/BTA> ASU Arboretum, Main Campus, Tempe, AZ (480) 965-8467

Mesa Community College Demonstration Garden, 1833 W. Southern Ave, Mesa, AZ 85202 (480) 461-7000

U of A Maricopa County Cooperative Extension Demonstration Garden, 4341 E. Broadway, Phoenix, AZ 85040 (602) 470-8086

<http://cals.arizona.edu/>

Arizona Herb Association Demonstration Garden U of A Maricopa County Cooperative Extension, 4341 E. Broadway, Phoenix, AZ 85040 (602) 470-8086

AZ Game and Fish Dept., 2221 W. Greenway Rd., Phoenix AZ 85023 (602)

942-3000 www.gf.state.az.us

Arizona Native Plant Society
PO Box 41206, Sun Station,
Tucson, AZ 85717
City of Phoenix, Water
Conservation Office, 200 W.
Washington, STE 800,
Phoenix AZ 85003 (602) 261-
8367 www.amwua.org
AZ Nursery Association, 1430
W. Broadway Rd., Ste A-125
Tempe AZ 85282 (480) 966-
1610.

Magazines:

National Gardening
PO Box 51106
Boulder, CO 80323
Organic Gardening
PO Box 7583
Red Oak, IA 51591
Horticulture
PO Box 51455
Boulder, CO 80323

CREDITS

Sunset Western Garden
Book, Sunset Books, Inc.
Menlo Park, CA 94025
Sunset Western Landscape
Book, Sunset Publishing Co.
Menlo Park CA 94025
Xeriscape Training Manual
Ron Dinchak, Mesa
Community College, 1833 W.
Southern Ave., Mesa AZ
85202 (480)461-7000

EDUCATORS' NOTES

<p>CURRICULUM DESIGN Barry L. Feldman Grade 10 - Science Corona del Sol High Tempe Union High School District</p>
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Lesson Plan was paid for by a grant
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Flower garden

56 ft

Pond

56 ft

GAZIBO covered in vines

Herb garden

18 ft

61 ft

72 ft in all

11 ft

