Edible Landscaping

Overview: Interested in starting a food garden with your youth gardeners, but can't find space for a traditional vegetable garden or fruit orchard? Try edible landscaping!

Grade Level/Range: K-8

Objective: To investigate the ornamental properties of lettuce to expand students' perceptions of plant material that can be used in landscapes.

Time: 4 to 8 weeks

Materials:

- a variety of lettuce seeds
- potting soil and planting containers or landscape bed space
- evaluation sheets

Background Information:

Edible landscaping describes the horticultural practice of incorporating plants with edible parts (fruits, flowers, stems, leaves or roots) into a design whose primary function is to be aesthetically pleasing. The tasty and nutritious harvest of the landscape is an exciting secondary benefit. The design may feature only edible plants or include a combination of edible and non-edible, ornamental plants. Unlike traditional food gardens, which are placed in lower traffic areas such as behind the school near a playground or in a backyard, an edible landscape can also be installed in more public areas such as the school's main entrance or a front yard.

Blending edible and ornamental plants in landscapes was common practice throughout much of history. However in the last century or so, we began to separate fruit and vegetable plants into their own garden spaces and fill our more formal landscape designs with lawns, shade trees and non-edible foundation plantings. With overwhelming research touting the benefits of fruits and vegetables and rising concerns about the health crisis in the United States, what better time to bring edible plants back into focus by using them to create beautiful and functional landscapes.

Benefits of edible landscapes include:

- They create a space that is visually appealing and functional.
- They allow for food production on land that is on constant public display.
- They add an element of intrigue and creativity to designs as edible plants tend to have interesting seasonal changes and different colors, textures and shapes than those provided by many common ornamental plants.

If used on a large scale in urban areas, edible landscaping could transform the diets of city dwellers. Many urban residents have limited access to grocery stores and farmers markets. Edible landscaping expands the amount of land available for urban agriculture beyond community gardens and increases production of fresh fruits and vegetables. In addition to adding to the supply, it also decreases transportation costs, which in turn decreases food prices.

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Of course edible landscaping also comes with a few challenges. The reasons most vegetable and fruit gardens are laid out in block shapes with simple rows are to minimize maintenance and maximize harvest. Rows ease the work and decrease the difficulty of performing necessary tasks such as planting, thinning, watering, weeding and harvesting. They also provide a grid-like structure for measuring the distance needed for mature plants. When planning an edible landscape, special care is needed to account for maintenance needs and plant growth. Additional challenges include:

- Most edible plants need 6 to 8 hours of full sun along with well-drained, fertile soil for a good harvest. Soil must be free from contaminants. Not all landscapes (especially urban landscapes) have these conditions available.

- Edible plants may attract other animals that will compete with you for the harvest, such as birds, rabbits, squirrels, deer, insects, etc.

- Many edible plants need more maintenance than most common ornamental plants, such as regular pruning, supplemental watering, soil amendments, and frequent monitoring especially during harvest.

- The entire garden (not just the edibles in the garden) must be grown organically and/or meet food garden pest control standards.

- Finally there are some cities and Home Owners Associations that may regulate what can be grown in public areas such as front yards. Make sure you check into any restrictions that may apply to your location before planting.

The good news is that edible landscapes can be flexible in size and shape. If you don't have adequate soil, you can use raised beds or containers and bring in better soil. If you only have a small porch in the sun, you can create window boxes or use hanging baskets. If your horizontal space is limited, you can grow vining fruits and vegetables over arbors and trellises.

Just like designing a landscape with ornamental plants, a significant key to your success is finding the right plants for your location. Look for varieties that grow well in your area (if you are not sure what will grow well, check with your local Extension Office) and that are disease- and pest-resistant. Choose plants that will perform well with the water, sunlight and temperatures at your site.

Also identify plants with varying harvest dates that correspond with times your youth gardeners will be available. For instance spring crops you can harvest before a summer break include strawberries and salad crops like lettuce and carrots. Plants with a fall harvest include apple and persimmon trees along with nut trees like pecans.

Don't forget to research growing habits carefully before purchasing specimens for your landscape. Edible plants may have unique needs that common ornamentals do not. For example, many fruit trees are not self-pollinating therefore you must plant more than one plant and sometimes more than one cultivar of a plant for fruit production.

To help you get started in planning an edible landscape, the following is a list of plants with aesthetic and edible properties that you may want to consider:

Plants with Edible Fruit

Annual Plants:

Eggplant - Shiny, colorful and unusually shaped fruits add ornamental interest.

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Peanuts - Cute, yellow flowers with an interesting growth habit (after pollination flower stalk elongates and fruit develops underground).

Peppers - A colorful addition to a landscape as they come in a wide variety of colors (red, orange, yellow, green, and purple), flavors (sweet to hot) and shapes.

Perennial Plants:
Dwarf banana - a tropical plant that can be grow in a container with evergreen foliage, sweet smelling flowers and edible fruit.

Strawberries - An excellent ground cover or border plant with runners to encourage spreading. Alpine strawberries are an easy-care choice.

Vines:
Grapes - Hardy vines with varieties adapted to a wide range of environments. Make sure to look for varieties with disease resistance. They can be grown on a trellis or arbor. Fruit matures in late summer to early fall.

Kiwi - An attractive, vigorous vine for an arbor or trellis. Fruit ripens in fall and is high in Vitamin C.

Shrubs:
Blackberries - Shrubs have long canes which grow to heights of 5' to 10'. Look for varieties with thornless stems. Fruit matures in mid to late summer.

Blueberries - Attractive shrubs with good fall color ranging from 4' to 7' in height. Fruit matures in early to mid-summer.

Elderberries - Hardy, native shrubs with attractive foliage and large clusters of spring flowers. Fruit matures in late summer and is good for making jellies, jams and pie.

Pineapple guava - An evergreen shrub growing to 15' with attractive and unusual red flowers (flowers are also edible). It produces small blue fruits that taste like a blend of pineapple and strawberry.

Raspberries - Shrubs ranging from 4 to 6 ' in height. Depending on the variety, fruit may mature from summer to fall.

Roses - Well known as an ornamental, but most varieties also produce tasty rose hips which are high in Vitamin C.

Trees:
Apples - Small trees with beautiful spring flowers. Many different varieties available adapted to varying climates. Apricot - Small- to medium-sized tree with attractive white or pink spring flowers. Fruit matures in early to late summer.

Cherry - Medium-sized trees with spectacular spring flowers. Fruit matures in the summer to early fall depending on the variety.

Citrus - Tropical fruits are sensitive to cold weather; however, many plants can be grown successfully in containers, such as Meyer Lemons, limes and satsumas, and brought inside for winter months.

Figs - Small trees reach 10 to 30' in height with interesting lobed leaves. Fruit matures in mid-summer to fall.

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Kousa dogwood - An attractive tree growing 20 to 30' in height. Showy white flowers followed by tasty red fruits in mid to late summer.

Loquat - A small evergreen tree with large glossy leaves, fragrant flowers and spring-maturing fruit.

Pawpaw - A small native tree ranging from 12 to 20 feet. Fruit has a custard-like texture and banana-like flavor.

Peach - Small trees generally 15 to 20 feet in height. Beautiful spring flowers and summer fruit.

Pecan - Large shade tree needing well-draining soils. Nuts mature in late fall.

Pear - Medium to large trees with attractive spring blooms. Fruit matures during the summer.

Persimmon - A small tree with native and oriental varieties available. Some varieties have very attractive foliage and good fall color. Fruits mature in the fall.

Quince - A shrub-like tree growing to 15" with beautiful spring flowers. Fruit is used for jellies and matures in the fall.

Plants with Edible Leaves

Basil - a number of different varieties are available including ones with purple leaves and curly leaves. Produces attractive flowers (although if harvesting leaves it is best to remove flower buds and encourage vegetative growth).

Cabbage - A diverse selection available including varieties of different sizes and colors (red, purple, and white).

Dill - Airy foliage with attractive yellow flowers.

Fennell – Fine-textured foliage in green and bronze.

Kale - Finely curled leaves providing seasonal color with varieties available in a range of reds, purples and greens.

Lettuce - A wide range of varieties available providing many different colors (reds, purples and all shades of greens) and textures to the landscape. Cool-season grower which can be harvested in fall and spring.

Malabar spinach - A vine with thick, dark, green leaves that can be eaten throughout the summer. It can be grown on a trellis or even in a hanging basket.

Parsley - Some varieties have frilly, decorative leaves and an attractive compact growth habit.

Sage- evergreen plant with a variety that produces tricolor leaves (pink, green and white).

Swiss chard- Variety 'Bright Lights' has very colorful stems and veins, including yellows, pinks, reds, oranges, purples, whites and greens.

Plants with Edible Stems

Jerusalem artichoke - A perennial plant with sunflower like flowers and underground edible tubers.

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Rhubarb - A perennial vegetable with beautiful red stems used in cooking. Harvest throughout the summer.

Asparagus - A perennial vegetable harvested in the spring. During summer and fall the plant has attractive fern-like foliage.

Plants with Edible Flowers

Many flowers are edible and bring lively flavors, colors and textures to salads, soups, casseroles and other dishes. As Horticulturist Charlie Nardozzi shares, any flower that isn't poisonous or causes reactions such as allergies is considered edible. However, just because a flower is edible doesn't necessarily mean it tastes good. It's best to stick with flowers that are known to be good choices for eating, rather than experimenting. Additionally not all parts of edible flower are edible. For many flowers, only the petals are edible and the sepals, pistil and stamens must be removed. Be sure to positively identify a flower before eating it and don't eat flowers if you have asthma, allergies, or hay fever. Additionally only eat flowers that have been grown organically and have no pesticide residue.

Edible Annual Flowers

Calendula/pot marigold - comes in yellow, gold or orange flowers that have a tangy and peppery taste.

African marigold - has white, gold, yellow or red flowers with a strongly pungent flavor.

Signet marigold - features white, gold, yellow or red flowers with a citrus flavor.

Nasturtium - has white to red flowers with a watercress-like, peppery flavor. Contains Vitamin C.

Pansy/viola - has violet, white, pink, yellow or multi-colored flowers that have a sweet flavor.

Petunia - is a summer-blooming flower that comes in a wide range of colors and has a mild flavor.

Pineapple sage - has scarlet-colored flowers with a sage flavor with pineapple undertones.

Radish - has yellow, spicy-hot flowers.

Scented geraniums - has white, red, pink or purple-colored flowers with an apple, lemon, or other flavor depending on the variety.

Scarlet runner beans - has bright orange to scarlet flowers with a mild, raw-bean flavor.

Squash - has yellow to orange flavors with a mild, raw-squash flavor.

Sunflower - features white, yellow, orange or burgundy flowers. Unopened buds taste like a mild artichoke. Flower petals are bittersweet.

Edible Perennial Flowers:

Artichokes - are immature flower buds. The plant itself has attractive grey-green foliage.

Chives - have white, lavender or purple flowers with a strong onion flavor.

Dianthus/Pinks - have pink, white and red flowers with a spicy, clove-like flavor.

Daylily - comes in a wide range of flower colors with a slight asparagus or summer squash-like taste.

Borage - has blue, purple to lavender flowers with a cucumber-like flavor.

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Dandelion - has yellow, slightly bitter flowers. Contain Vitamins A and C.

Red clover - has sweet-tasting, pink or red flowers.

Edible Tree and Shrub Flowers

Apple - has white to pink flowers with a floral to slightly sour taste.

Elderberry - has white, sweet-tasting flowers.

Hibiscus - has orange, red or purplish-red flowers; flavor has cranberry and citrus overtones and is slightly acidic.

Honeysuckle - features white, yellow, pink or red honey-flavored flowers.

Plum - pink to white flowers with a mild flavor like flower nectar.

Rose - has white, pink, yellow, red or orange with a highly perfumed, sweet to bitter flavor.

Laying the Groundwork:

Search your school grounds or youth garden for edible plants and make an inventory list. Encourage students to do the same at their homes. Ask the following questions:

- How many edible plants did you find? Make a list. What part of each plant is edible?
- Where were these edible plants found? How many were in your front yard or the front of the school? How many were in your backyard or back of the school?
- Do you see any trends in their placement?

Exploration:

1. Lettuce is a salad staple that comes in a wide range of shapes, sizes and colors. Not only can it be decorative on your plate, it can also be an attractive addition to your landscape design. Have students research the different types of lettuce available for purchase and come up with a list of plants to try in your own garden.

2. Plant a variety of lettuce seeds in containers such as window boxes or in landscape beds. Make sure you plant varieties with a diversity of leaf colors, sizes and shapes.

3. As plants grow, ask student to keep a weekly journal documenting their growth. Once the plants get large enough to evaluate, ask each student to complete an evaluation form for each variety (see sample evaluation sheet below). Evaluate the plants 2 or 3 times to account for variations over time.

Making Connections:

Compile the results of the evaluations and calculate an average visual rating for color, shape and texture for each type of lettuce.

Ask students to discuss the following:

- Which lettuce variety do you think was the most attractive? Why?
- Which one was the least attractive? Why?

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- Would you want to plant any of these varieties in your front yard or the front of the school? Why or why not?

- Conclude the experiment with a salad party. As they are eating their salads, discuss with students whether or not the harvest gives more value to the lettuce as a landscape plant for an ornamental bed. Also let them rate each lettuce on taste. Is the lettuce with the highest taste rating also the one with the highest visual rating? How do the two lists of ratings compare?

Branching Out:

- Plant lettuce seeds in small pots for students to take home. Ask them to write about where they planted their new plant and why.

- Provide old seed catalogs for students to search. Ask them to make a list of edible plants that could be used in an ornamental landscape. If you have enough catalogs, let them cut out pictures to create an informational brochure about edible landscaping to share with their family and neighbors.

- Plan an edible landscape for your school or another public facility to serve as a demonstration and teaching garden for the community. Ask students to brainstorm ways to promote edible landscaping such as writing newspaper articles and selling appropriate seeds or plants.

- Talk to students about the importance of eating fruits and vegetables each day. Create a class cookbook with easy-to-make fruit and vegetable recipes.

Link to Next Generation Science Standards Performance Expectations:

3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

MS-ETS1-2. Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

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Lettuce Evaluation

Lettuce Variety:____

Date			
1. Height (# of inches tall)			
2. Width (# of inches wide at mid-point)			
3. Visual Rating of Color (1 to 10: 1= not attractive, 10 = very attractive)			
4. Visual Rating of Shape (1 to 10: 1= not attractive, 10 = very attractive)			
5. Visual Rating of Texture (1 to 10: 1= not attractive, 10 = very attractive)			
6. Any signs of disease?			
7. Any signs of pests?			
8. Additional Comments			

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