

School Garden Design

Grades 9 – 12

Ohio Standards

Connections:

Subject:

VISUAL ARTS

Grades: 9-12

Standard:

Creative Expression and Communication

BENCHMARK A:

Demonstrate knowledge of visual art material, tools, techniques, and processes by using them expressively and skillfully.

Standard:

Analyzing and Responding

BENCHMARK C:

Critique their own works, the works of peers and other artists on the basis of the formal, technical and expressive aspects in the works.

Standard:

Connections Relationships, and Applications

BENCHMARK C:

Create and solve an interdisciplinary problem using visual art processes, materials, and tools.

BENCHMARK D:

Describe how visual

Lesson Summary:

The purpose of this lesson is intended to provide teachers with a process and tools needed to develop a successful school garden. It also serves as an introduction to the design process and are procedures followed by design professionals.

Estimated Duration:

There is no standard of duration in garden design. The variables are widespread and much different than a standard lesson. For this specific lesson, the duration will be approximately six to eight weeks. The duration would also depend on how often the class meets and for how long. It can expand and contract, depending on time constraints. For example, if time allows, the students could develop scaled models of the proposed site. That alone could add an additional three weeks to the project. This project has many aspects to it and can serve as an entire teaching unit, portions of which can serve as individual art lessons.

Commentary:

Artists have always enjoyed a connection with gardens, often utilizing the garden as subject matter for their work. Other artists design gardens as their work. The garden itself becomes the medium and the canvas in which the artist creates for themselves and others.

Pre-Assessment:

Teachers will ask the students about their understanding of gardens and what a garden can be. Ask the students about their participation in gardens at home, with relatives, and in other scenarios. Students will be encouraged to share their experiences through story telling, writing, and sketching. Teachers will also present examples of various types of gardens using garden theme magazines, trade publications, and books. If possible, a field trip will be organized to visit a local botanical garden, community garden, or garden center. If there is a Master Gardener Program in the region, invite Master Gardeners into the classroom as guest speakers. Emphasis must be placed on organic and sustainable garden design practices.

School Garden Design Grades 9 – 12

art is used in their communities and the world around them and provide examples.

Subject:

ENGLISH LANGUAGE
ARTS

Grades: 8-12

Standard:

Writing Process Standard

BENCHMARK A:

Formulate writing ideas and identify a topic appropriate to the purpose and audience.

Subject:

MATH

Grades: 8-10

Standard:

Measurement Standard

BENCHMARK B:

Use formulas to find surface area and volume for specified three-dimensional objects accurate to a specified level of precision.

BENCHMARK C:

Apply indirect measurement techniques, tools and formulas, as appropriate, to find perimeter, circumference and area

Post-Assessment:

As a result of this lesson, students will be able to work with scale and convert from one scale to another. Apply research to practical application, conceptualize, utilize critical thinking skills, collaborate and compromise. Students will be able to both visualize and verbalize their ideas and intentions in a clear concise manner.

Scoring Guidelines:

A series of rubrics will be developed and provided to the students for each of the various phases of this project.

Scoring may be based upon:

Conceptual development and research

Final design plan

Support and supplementary sketches

Scale model

Presentation of project, verbal articulation connection with audience, relative strength of visuals

Individual participation

Group participation

Instructional Procedures:

Project introduction: Introduce the project, present visual examples of gardens, present examples of landscape and garden design plans. Discuss the possible locations for a garden at the school, and what type of garden it could be.

Exploration: Students will explore the many possibilities associated with gardens, and create a list of possible types of gardens that may be appropriate for the school.

Site selection: Teachers and students will walk the schoolyard selecting the most appropriate possible locations for the garden. Selection criteria will include proximity to water, soil type, flat vs. rolling, sunny vs. shady, etc. Sun is not an automatic criteria. You may be looking to create a shade garden.

School Garden Design Grades 9 – 12

of circles, triangles, quadrilaterals and composite shapes, and to find volume of prisms, cylinders, and pyramids.

Subject:

SCIENCE

Grades: 9-10

Standard:

Life Sciences

BENCHMARK F:

Explain the structure and function of ecosystems and relate how ecosystems change over time.

BENCHMARK G:

Describe how human activities can impact the status of natural systems.

Standard:

Scientific Ways of Knowing

BENCHMARK B:

Explain how scientific inquiry is guided by knowledge, observations, ideas and questions.

Site inventory: What is on the site now? No site is “empty”. Each site has a history, a story to tell, and both living/non living objects to reveal. The students will make a list of everything that is on the site or adjacent to it. Students will measure the site and create a base plan designed to scale, showing the entire garden site. Students will add a title block, giving the project a name and listing their names. A north arrow for directional indication will be included as well as the scale in which the plan is executed.

Analysis: Consider what can be utilized and taken into consideration as the design is developing. Where and how does the sun interact with the space? From which direction do the winds come? Is the site flat or rolling? Is it a cut-through for others?

Conceptual design: This is the brainstorming portion of the project. Students will develop a minimum of three conceptual designs for this site, each done to the same scale.

Process presentation: After the completion of the schematic or conceptual designs, students will confer with teachers and their peers to select the best attributes of each of their submissions. These selections may be included into the final design(s).

Full design: Students will work as a group with a common goal.

Some students will draft the final design plan, while others may develop detail, elevation, and perspective sketches of what the garden will look like from various views and adjacent areas. Still others may research materials, potential plants, compile a list of garden resources and even draft letters to the community informing them about the new project.

Revisions: Revisions are not to be considered mistakes, but rather finalizing, or “tweaking”. This is a normal part of the sequence for any designer.

Final design: This is the end or final product of the garden design process. After this comes the beginning of creating the garden itself. Components of the final design would include the: final plan, in scale and in color sketches and a written narrative explaining the project.

School Garden Design Grades 9 – 12

Grades: 9-12

Standard:

Life Sciences

BENCHMARK B:

Explain how humans are connected to and impact natural systems.

Subject:

SOCIAL STUDIES

Grades: 11-12

Standard:

Social Studies Skills and Methods

BENCHMARK C:

Develop a research project that identifies the various perspectives on an issue and explain a resolution of that issue.

BENCHMARK D:

Work in groups to analyze an issue and make decisions.

Final presentation: This is a more formal presentation by the students to their peers, teachers, administration, and community.

This would also call for a celebration!

Differentiated Instructional Support

Instruction will accommodate all learner needs. Any and all students can participate at some level, providing valued assistance. If a student cannot conceptualize in scale and by looking at a plan, he or she can be given photocopies of contour sketches of the site to draw their interpretation on. The coloring book approach also works very well with early elementary students. Any aspect of the garden design can be differentiated. In addition, all gardens must be designed in a universal manner which means they need to meet the American with Disabilities Act guidelines, and the inclusion of a horticultural therapy program is a wonderful asset to any school garden program.

Extension

In class, with the proper set-up, students can propagate plants for the garden by planting seeds, or starting plants from cuttings. The seeds of course would be best planted in the early spring indoors, however stem cuttings can be taken during much of the year, depending on the plant species. Students can research school gardens on the internet and in garden related magazines. When they find a plant they are interested in, they can google it to learn about its needs, see pictures of it during various seasons, and develop a plant file for the garden project.

Students can also explore ways of incorporating visual art into the garden. Sculpture, mosaics and murals lend themselves to the garden setting.

Homework Options and Home Connections

Plant research, (see above), is an excellent connection. Other connections include having students ask parents and or others about their positive experiences with garden and nature when they were growing up. Having students read *Last Child in the Woods* by Richard Louv, or excerpts from

School Garden Design Grades 9 – 12

the book, is a great way to introduce students to the importance of connecting with nature.

Interdisciplinary Connections

Math: Students will exercise geometry and other math skills while measuring and creating the base plan for their garden. They can also compute area, square footage, cubic yards of needed material, etc.

Science: Students will explore plants, their suitability, growing habits and their needs. Soil samples will be taken and analyzed. Students can also study the animals of the area and their proposed garden will impact, benefit, or become impacted by various animals.

History: Students can research what was once on the land where their garden will be, and how the land was used at various times through the years.

English: Students will develop a written narrative of their garden project.

Materials and Resources:

For teachers

garden related books and magazines

For students

tracing paper, scales(engineering and architectural), triangles, protractors, rulers, large sheets of white drawing paper, pencils, color pencils, markers, black sharpies.

Key Vocabulary

Annual- An herbaceous plant that germinates, grows, blooms, sets seed, and dies within one growing season.

Base plan- A plan or map drawn to a specific scale, indicating size relationships and locations of all features on and in a specific space.

School Garden Design

Grades 9 – 12

Biennial- An herbaceous plant that germinates, grows slowly during the first year, then spikes up, blooms, sets seed and dies in the second year.

Detail sketch-A sketch that provides instruction as to how something is constructed or assembled.

Elevation sketch-A sketch, drawn to scale, that shows a straight-on view, without showing sides, background or any sense of perspective.

Herbaceous-A soft-stemmed plant that dies back to the ground at the end of the growing season.

Organic- Naturally produced without manmade chemicals.

Perspective sketch- A type of sketch or drawing that shows a sense of depth through the use of vanishing points and angled lines.

Perennial- An herbaceous plant that returns and grows every year.

Scale- The size relationship between objects in order to show accurate proportions. For example, one inch will represent one foot or two feet, etc. Four feet per inch, or one foot equaling one quarter inch is a common scale to work in when developing a garden.

Schematic design- The portion of the design process where ideas are generated.

Sustainable- Able to thrive and be maintained with minimal effort and minimal consumption of natural resources.

Technology Connections

While CAD (Computer Aided Design), programs are useful as a tool, they must not be used as a replacement for understanding design and design principals. In addition, basic drawing and drafting skills are very important to learn and nurture. Computers will be a valuable research tool for learning about gardens and plants.

Columbus Museum of Art

School Garden Design Grades 9 – 12

Research Connections

web:

www.stonylanestudios.com (under construct.) Kurt Van Dexter

www.garden.org National Gardening Association

www.kidsgardening.com National Gardening Association

www.csgn.org California School Garden Network

www.ChildrensGardenNetwork.org (under construct.)

books:

Last Child in the Woods by Richard Louv

Plan Graphics by Theodore D. Walker and David A. Davis

Natural Learning by Robin C. Moore and Herb H. Wong

General Tips

There is no singular correct design solution to a given garden design project, but rather a preferred group of visual answers which successfully address the needs of the space and all who will encounter the space.

