



Design a Colonial Garden

Written by GEF Staff

Grades: 3-5

Subject: Math, Social Studies, Creativity

Time: 60 minutes



***Standards:** Students will...

Mathematics Standard 4: Understand and apply the basic and advanced properties of the concepts of measurement.

Benchmark # 1: Understand the basic measures perimeter, area, volume, capacity, mass, angle and circumference.

Benchmark # 2: Select and use appropriate tools for given measurement situations (e.g., rulers for length, protractors for drawings circles).

Benchmark # 4: Understand relationships between measures (e.g., between length, perimeter and area).

Mathematics Standard 5: Understand and apply the basic and advanced properties of the concepts of geometry.

Benchmark # 1: Know basic geometric language for describing and naming shapes.

Benchmark # 2: Understand basic properties of figures (e.g., symmetry).

Benchmark # 4: Understand that basic shapes can be congruent or similar.

Benchmark # 5: Use motion geometry (e.g., turns, flips, slides) to understand geometric relationships.

Benchmark # 6: Understand characteristics of lines (e.g., parallel, perpendicular and intersecting) and angles (e.g., right, acute).

Benchmark # 7: Understand how scale in maps and drawings show relative size and distance.

History Standard 2: Understand the history of a local community and how communities in North America varied long ago.

Benchmark # 3: Understand the historical development and daily life of a colonial community (e.g. Plymouth Plantations, Colonial Williamsburg).

Objectives: Students will be able to...

- Identify and describe aspects of life in colonial America as they relate to gardening, and the growing of crops for foods and medicines.
- Find the perimeter and area of a plane geometric figure using the appropriate formula.
- Construct a garden design using drawings of two-dimensional figures.
- Identify congruent shapes and use motion geometry (flips, turns, slides) to position elements in a garden design plan.
- Identify and describe the lines of symmetry on plane geometric figures using drawings.

Materials:

- Chart paper
- Poster marker
- Clipboards
- Rulers
- Scissors
- Protractors
- Grid paper



- Colored pencils, markers, or crayons
- Example of a colonial garden design

Overview: The American colonial era ranged roughly from the beginning of the 1600's up to the period of the American Revolution. Since the majority of colonists that settled in America in the 17th century were from England, Holland and Germany gardens established at that time were strongly influenced by European designs; and with the colonists' attentions on the fight for independence, gardening designs did not change much from the early 1600's up to the 1840's.

American colonial garden designs were somewhat eclectic in nature since they were influenced by differences in regional plants, ethnic traditions, and personal style. This accounts for the variations in the look and feel of colonial gardens found in different regions of the country. However, for the purposes of this lesson students will learn about the basic elements of the original colonial gardens to help them create period-appropriate garden designs.

The original colonial gardens were built in a time when resources were in short supply. Garden space was restricted by the size of the plots of land allotted to them. In the villages where the houses were built close together garden plots were small. While many plots had a basic geometric design, attention was mainly focused on clearly defined lines that separated the garden space from the public walkways and neighboring yards. Gardens seldom had straight corners or symmetrical designs. Colonists often blended practical layouts with native plants that were pleasing to the eye and hardy enough to survive the climate. Country gardens did not suffer from the same space restrictions and could be much more extensive and grand, depending on needs and wants of the owners. These were often laid out in geometric designs reminiscent of the gardens they left behind in England. Borders of plants or stones were placed around the perimeters of gardens. In the towns these borders were meant to keep unwanted visitors at bay, and in the country to bar wild animals and wandering livestock. Paths leading directly to the gardens were often simple, made of gravel and dirt, and covered over with rough planking during the snowy or rainy seasons. Paving materials (e.g., crushed shells, bricks, cobblestones) were used mostly when available in surplus quantities.

Most colonial gardens were built for practical purposes. They were often an extension of the kitchen area and contained a variety of vegetables and herbs. Corn, beans, pumpkins, cucumbers and squash, crops first grown by the Native Americans, quickly became staples of the New England colonial gardens, as well as plants brought from Europe, which included cabbages and potatoes. Herbs such as lavender, mint, thyme, yarrow, lemon balm, garlic chives, sage, and rosemary were often incorporated into the family's vegetable garden so they could be gathered quickly, when needed to add to a drink, flavor a stew or used medicinally to calm a sick stomach or staunch bleeding. Fruits also held a prominent place in the colonial garden. Apple trees were common and apples were thought of as a necessity to survive the winter season. Gardens and orchards were so valuable to the colonists that in 1646 an enactment was passed in Massachusetts that fined any person who was found to rob or damage another's garden or orchard.

Kid's Speak: The colonists of early America planted gardens out of necessity. Among the plants they grew were corn, beans, cucumbers and squash, cabbages, onions, pumpkins and potatoes. Herbs were grown to flavor foods and to use as medicines. Fruit trees were planted in most gardens and apples were the favorite among the fruits. Paths leading to the gardens were made of dirt or sometimes clam shells or stones. Borders were built around gardens to keep them safe. They were made of stones found when digging the garden or plants spaced close together. While gardens were laid out to resemble geometric shapes, they seldom had straight corners or symmetry, unlike the reproductions of colonial garden we



see today. Back then gardens were planted for more practical reasons, such as for food and for medicine, rather than for pleasure.

Eco-Fact: In 1648, John Endicott, the first Governor of Massachusetts traded 500 fruit trees for 250 acres of land, which shows the value that was placed on fruit trees in the Colonial Era.



Procedures:

Before Designing a Colonial Garden:

- Select an area on school grounds for your colonial garden. Whether or not you actually plan to plant a garden is not relevant at this point. The purpose of selecting a site is to provide students with a visual point of reference and an opportunity to work on problem solving techniques.

- Provide students with some background on colonial garden design. Explain the issues that existed regarding the availability of resources, including space, plants, water, time, and money, that the colonists had to consider when planning a garden. Compare gardens today to those of colonial times- gardens for pleasure versus practicality.

- Introduce the elements common to colonial gardens: geometric patterns, clearly defined paths, borders, plants that could be grown for a variety of purposes and hardy enough to withstand seasonal changes. Explain the purposes of each element. Organize the information provided on a data chart, showing the differences between gardens grown in villages and those grown in the country.

Designing a Colonial Garden:

1. Bring students out to the pre-selected garden site with their clipboards and pencils. Ask students to identify and record any obstacles that would make planting a garden on this site a problem. Are these obstacles something that can easily be moved (e.g., a bench), something that they would need help moving (e.g., a large boulder) or something that could not be moved (e.g., a large tree, a structure of some kind). Ask students if they feel any of the obstacles could be worked into the design. Are there any obstacles in or near the garden area that will have an effect on its design (e.g., a tree in or near the area may cast shade onto the area at some point in the day, blocking the sunlight and affecting plant growth.)
2. Have students sketch out the area. Have volunteers measure the overall area of the space to be planted. For the purposes of this lesson we will work with a rectangular design. If the space you select does not provide for a rectangular shaped area, make the necessary adjustments. Explain to students that they need to know both the length and width of the space to determine the area. Return to the classroom.
3. Divide the class into small groups of two or three students. Ask students to find the area and perimeter of the planting area while rulers, protractors, scissors, colored pencils and grid paper are being distributed. Based on the size grid paper provided, identify a scale (e.g., numbers of squares = to a foot) for the students to work with when designing their gardens. Verify the area and perimeter of the garden space with all groups before moving to Step 4.
4. Show students a sample of a colonial garden design done on grid paper. Have the students work together within their group to design a colonial garden. Explain to the students that while they determine the overall design, they must consider and include the basic elements of a colonial design as described on the data chart generated in the pre-lesson activity. They must organize and fit the elements into the space provided, just as the colonist had to work with the space limitations they had. Students may suggest the placement of plants in the space, but which specific plants should be included in the design is best left for another lesson.

**After Designing a Colonial Garden:**

- Groups share their designs with the class and explain how they incorporated each of the elements of a colonial design into their basic plan. Student can explain why they chose specific geometric shapes, if they used a symmetrical or asymmetrical design, how they incorporated any existing structures or natural elements, any problems they encountered with the space limitations, and why they may have identified any specific plants to be used.

Adaptations:

- This lesson could be done as a whole group project with the teacher facilitating and focusing the discussion.
- This lesson could be broken down into smaller whole group segments and the actual design piece assigned for individual student homework assignments.

Extensions:

- Research other types of historical gardens: the Victory Garden and Three Sisters garden are featured on the GEF website.
- If possible take field trips to areas with colonial gardens such as Plymouth Plantations in Massachusetts or Colonial Williamsburg in Virginia.
- Research the homes of George Washington at Mount Vernon and Thomas Jefferson at Monticello for examples of wealthy landowner gardens.
- For tips on dietary guidelines and healthy eating habits visit the [USDA Food Pyramid](#).

GEF Community: Join the Green Thumb Challenge on the GEF Community! First, add your school, class or group as a GEF member. It just takes a minute. Share your students' designs.

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