Patterns in Nature
Second Grade: Gardens and Landscape
School Tour Packet

CUMBERMUSEUM
ART | GARDENS | EDUCATION
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INTRODUCTION

The Cummer Museum integrates art and science in its mission utilizing its unique riverfront campus on the St. John’s River and historical Gardens. Second grade students recognize patterns in nature through hands on activities and examination of the Cummer Gardens and surrounding landscape. Students will observe natural patterns of shape and form as well as discussing the cyclical nature of the natural world (weather, life cycles). This tour is designed in line with NGSSS.

VISUAL ART:

- VA.2.C.2.1 Use appropriate decision-making skills to meet intended artistic objectives.
- VA.2.F.1.1 Use imagination to create unique artwork incorporating personal ideas and selected media.
- VA.2.H.2.2 Identify objects from everyday life that have been designed and created using artistic skills.
- VA.2.H.3.1 Describe connections made between creating with art ideas and creating with information from other content areas.
- VA.2.O.1.1 Employ structural elements of art and organizational principles of design in personal work to develop awareness of the creative process.
- VA.2.S.2.2 Follow sequential procedures focused on art production.

SCIENCE:

- SC.2.E.7.1 Compare and describe changing patterns in nature that repeat themselves, such as weather conditions including temperature and precipitation, day to day and season to season.
- SC.2.E.7.4 Investigate that air is all around us and that moving air is wind.
- SC.2.E.7.5 State the importance of preparing for severe weather, lightning, and other weather related events.
- SC.2.L.16.1 Observe and describe major stages in the life cycles of plants and animals, including beans and butterflies.
- SC.2.N.1.1 Raise questions about the natural world, investigate them in teams through free exploration and systematic observations, and generate appropriate explanations based on those explorations.
- SC.2.P.13.3 Recognize that objects are pulled toward the ground unless something holds them up.
- SC.2.P.8.1 Observe and measure objects in terms of their properties, including size, shape, color, temperature, weight, texture, sinking or floating in water, and attraction and repulsion of magnets.
- SC.K2.CS-CS.2.1 Arrange or sort information into useful order, such as sorting students by birth date, with or without technology.
SOCIAL STUDIES:
- SS.2.C.2.4 Identify ways citizens can make a positive contribution in their community.
- SS.2.E.1.1 Recognize that people make choices because of limited resources.

MATHEMATICS:
- MAFS.K12.MP.7.1 Look for and make use of structure. Mathematically proficient students look closely to discern a pattern or structure.

ENGLISH LANGUAGE ARTS:
- LAFS.2.RL.1.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.

MUSIC:
- MU.2.H.3.1 Perform and compare patterns, aurally and visually, found in songs, finger plays, or rhymes to gain a foundation for exploring patterns in other contexts.
- MU.2.S.3.5 Show visual, gestural, and traditional representation of simple melodic patterns performed by someone else.
VOCABULARY

Art
Objects created specifically to look at because of their beauty.

Beauty
The quality present in a thing or person that gives intense pleasure or deep satisfaction to the observer; it may derive from sensory experience (as shape, color, sound, etc.), a meaningful design or pattern, or something else, as a personality that affects the observer in a positive way (being pleasing to the observer; pleasing to the senses).

Brackish
Being or containing water that is somewhat salty but less salty than sea water. A mixture of seawater with fresh water as in surface waters such as estuaries or other watery ecosystems, or it may occur underground in brackish fossil aquifers.

Designed
To do or plan (something) with a specific purpose or intention in mind.

Environment
Everything, living and non-living, natural and man-made; that surrounds a plant or an animal (this includes people).

Flower
The purpose of the flower is to produce seeds so that there will be more plants; it can produce fruit with seeds inside.

Garden
An area purposely planted and cared for; often near a house, used for growing flowers, fruit, or vegetables.

Landscaped
An improved aesthetic appearance of an area due to a design that changed its contours, added ornamental features, or planted trees and shrubs.

Landscape Architect
A profession committed to creating healthy, enjoyable, and secure places for the future. Landscape architecture combines art and science. It is the profession that designs, plans, and manages our land.

Life Cycle
The series of stages that an organism passes through during its lifetime.
Nature
The physical world and everything in it that is not made by people.

Pattern
A pattern is a discernible regularity in the natural world or in a man-made design; those things that are arranged following a rule or rules. The elements of a pattern repeat in a predictable manner.

River
A large natural flow of water that crosses an area of land and goes into an ocean, a lake, etc.

Sculpture
A piece of artwork that has height, width, and depth.

Sustainability
The result of taking responsible care of our world today, so our great grandchildren can do the same; Practices which recognize resources are finite, imitate, or restore natural systems and cycles, and act locally with a community.

Symmetry
Close agreement in size, shape, and relative position of parts on opposite sides of a dividing line or plane or around a central point.

Tide
The tide is the periodic rise and fall of the sea level under the gravitational pull of the moon.
Mercury, Mid-20th Century Bronze
About the Artwork

This statue was originally displayed in the Olmsted Garden and was given to Dr. Marshall by the Cummers when the property was sold to Barnett.

In the center of the Olmsted Garden, a beautiful bronze sculpture of Mercury, the Roman god of commerce, poetry, luck, trickery, and the guider of souls to the Underworld, stands suspended in a moment of time. Mercury’s body is extending forward and upward as though he is reaching for something, or as if he is about to take off in flight.

In sculptural history, Mercury is often visually depicted as similar to Hermes, the Greek messenger god. Statues of Mercury usually include winged shoes (talaria), a winged hat (petasos), and carrying a herald’s staff (caduceus).
Lower Olmsted Garden
About the Designer: William Lyman Phillips, 1885 to 1966

Born in West Somerville, MA, Phillips was an early student in Harvard’s landscape architecture program, from which he graduated in 1908. By 1911 he joined the Olmsted Brothers firm, where he worked on the Boston Common. He left the firm after two years and worked in a variety of roles in the U.S. and abroad as an independent practitioner and for the U.S. government. In 1925 Phillips moved to Lake Wales, FL, where he renewed his association with the Olmsted Brothers and spent the rest of his 50-year career. His work illustrated an understanding of the native Florida landscape, its unique ecosystems, and particularly its plants. Working with private clients and for the National Park Service, Civilian Conservation Corps, and Dade County he created landscapes which have helped define Florida’s image. Fairchild Tropical Botanic Garden in Coral Gables is Phillips’ best-known work. In 20 years there, he developed tropical plant collections organized by families, arranged along two formal axes with shaded walks and scenic views. His extensive body of work includes private estates, cemeteries, public thoroughfares, campus planning, Bok Tower Gardens (with the Olmsted Brothers), & McKee Botanic Gardens.

Designer’s Words:
In a 1938 letter, concerning Fairchild Gardens, Phillips revealed many of his underlying design principles; He stated that “The pattern, overall, is of a piece. The lines and shapes are dominantly free, casual, irregular, naturalistic . . . effects generically similar, specifically different.” He explained that the plan he created had no “marked appearance of organization (but) . . . there are clear purposes and principles underlying it.” He described his practice of using heavily planted areas alternated with lawn or lake as “mass and void.”
Lower Lawn and Riverfront
About the Lower Lawn

Originally this space was a putting green, a gift from Mrs. Cummer to her husband. It is heralded as one of the first private putting greens in Florida, probably constructed during the first decade of the twentieth century.

The lower lawn was also the site of many charitable events during Mrs. Cummer's lifetime. Organizations such as the Children's Home Society were the beneficiaries of Mr. and Mrs. Cummer’s philanthropic activities. The Cummer Gardens were often the site of carnivals for children, afternoon teas, and receptions for the Jacksonville community.

About the St. John’s River

The St. Johns River is seen from the Cummer Gardens. Running 310 miles, the longest river in Florida, it starts in marshes southwest of Cape Canaveral and flows north to Jacksonville, emptying into the Atlantic Ocean.

The St. Johns, like many Florida rivers, was altered to make way for agricultural and residential centers. It suffered severe pollution and human interference that has diminished the natural order of life in and around the river. Restoration efforts are underway for the basins around the St. Johns.
Italian Garden
About the Designer: Ellen Shipman, 1869 to 1950

Around 1912, Ellen Shipman began her career as a garden designer in Cornish, New Hampshire, and gained a mentor in the architect Charles Platt. Platt’s assistant taught her draftsmanship, and from Platt himself she developed a taste for strong axial garden layouts and tight visual connectivity between house and garden. She held her own in preferring the simple clean geometries of Colonial gardens. By 1920, she had opened an office in New York City, where she hired graduates of the Lowthorpe School of Landscape Architecture. Her most noted gardens are Longue Vue Gardens in New Orleans, the Cummer Estate (now the Cummer Museum of Art and Gardens in Jacksonville, Florida), and Stan Hywet Hall in Akron, Ohio, the latter where she was recommended by Warren H. Manning. Among her rare commercial projects are Lake Shore Boulevard, Grosse Point, Michigan and Aetna Life, Hartford, Connecticut.

Designer’s Words:
Shipman wrote that “Working daily in my garden for fifteen years taught me to know plants, their habits and their needs.” She explained that “a garden became for me is the most essential part of a home.” She believed in the importance of privacy: “Planting, however beautiful, is not a garden. A garden must be enclosed ... or otherwise it would merely be a cultivated area.” She commented that she used plants “as a painter uses the colors from his palette,” and by using no more than six to eight types of flowering plants in each design, she allowed "each, (flower) in its season (to), dominate the garden.”
ACTIVITIES

ACTIVITY 1  Five Patterns in Nature

In nature, the world that is not man-made, patterns are readily observable and though a single object may exhibit several patterns, we can discern some basic types. These types are seen in non-living and living objects of nature.

These pattern types are often separated into five categories: spiral, meander, explosion, packing, and branching.

Activity:
In this activity students will look at images from nature for similarities in pattern. They will also discuss what category to place each image into.

Background:
A pattern is a discernible regularity in the natural world or in a man-made design; those things that are arranged following a rule or rules. The elements of a pattern repeat in a predictable manner.

Living things may exhibit or create patterns; from coloration to the spinning of a web. Patterns are also constantly being created by simple physical laws. There are patterns in the sand dunes created by blowing winds. There is a pattern in the vortex of a whirlpool and in the formation of an ice crystal. All these patterns, whether a physical object or an event, have underlying causes and in many cases distinct purpose. Wind causes waves and sand dunes. Genetics cause the coloration of animals that may serve as camouflage or as a display.

Naturally occurring patterns have been studied since the early Greek philosophers who attempted to explain order in nature. Through time it has been discovered that these patterns, recurring in different contexts, can sometimes be modelled mathematically.

Materials:
- images of nature objects exhibiting patterns (pgs. 13-16)
- Mini Poster: Patterns in Nature (pg. 17)
- Activity Sheet: Five Patterns in Nature (pg. 18)
- pencils

Discussion:
Discuss with the students if they know what a pattern is. Have they seen patterns that occur naturally? Have they seen these patterns in physical objects, like plant and animals, landscape and sky? Have they observed patterns in events like weather or life cycles?
**Action:**
Image Analysis Sheet and Images:
Students examine and compare images of naturally occurring patterns, both physical objects and naturally occurring events. Supplement the images supplied with an internet search.
- Students can start to separate the images into groups that exhibit similar patterns.
- Students can compare the patterns found in living and non-living objects.
- Students can compare the patterns found in physical objects of nature and in natural events.
- Using the Mini Poster: Patterns in Nature students assign categories to the patterns they observe in the images. They may assign different patterns to the same image or multiple – discuss the reasoning.

Activity Sheet:
Using the knowledge they gained from the previous exercise and using the mini poster as a reference, the students complete the Activity Sheet: Five Patterns Found in Nature.

Some other images to look for:

<table>
<thead>
<tr>
<th>Segment of a wasp nest</th>
<th>sand dunes</th>
</tr>
</thead>
<tbody>
<tr>
<td>honeycombstarfish</td>
<td>ocean waves</td>
</tr>
<tr>
<td>pine frond</td>
<td>rainbow</td>
</tr>
<tr>
<td>pine cones</td>
<td>auroras</td>
</tr>
<tr>
<td>echinoderms</td>
<td>hurricane images</td>
</tr>
<tr>
<td>snake skin</td>
<td>solar flares</td>
</tr>
<tr>
<td>butterfly wings</td>
<td>sunrise/sunset</td>
</tr>
<tr>
<td>zebra skin</td>
<td>moon phases</td>
</tr>
<tr>
<td>sunflower and other seeds</td>
<td>day and night images</td>
</tr>
<tr>
<td>spider web</td>
<td>examples showing life cycles</td>
</tr>
<tr>
<td>Image</td>
<td>Name</td>
</tr>
<tr>
<td>-------</td>
<td>------------------</td>
</tr>
<tr>
<td><img src="image1.jpg" alt="Clouds" /></td>
<td>clouds</td>
</tr>
<tr>
<td><img src="image2.jpg" alt="Crater Ridge" /></td>
<td>crater ridge</td>
</tr>
<tr>
<td><img src="image3.jpg" alt="River Network" /></td>
<td>river network</td>
</tr>
<tr>
<td><img src="image4.jpg" alt="Lightening" /></td>
<td>lightening</td>
</tr>
<tr>
<td><img src="image5.jpg" alt="Veiled Chameleon" /></td>
<td>veiled chameleon</td>
</tr>
<tr>
<td><img src="image6.jpg" alt="Atmosphere of Jupiter" /></td>
<td>atmosphere of Jupiter</td>
</tr>
</tbody>
</table>
Mini Poster: Patterns in Nature

SPIRAL

MEANDER

EXPLOSION

PACKING

BRANCHING
Activity Sheet: Five Patterns in Nature

As seen in five non-living & five living examples; label each of the drawings with a name from the pattern list and each image with a name from the group lists.

Pattern: spiral, meander, explosion, packing, branching
Non-Living: crystals, hurricane, river delta, sand dunes, snowflake
Living: grapes, flower, pufferfish, snail, tree
ACTIVITY 2 Fractals


A fractal is a never ending pattern that repeats itself at different scales. Fractals can be observed in in nature in such patterns as branching and spirals. Though extremely complex, fractals are extremely simple to make. A fractal is made by repeating a simple process again and again.

Activity:
This activity illustrates the fundamental principles of fractals; the Sierpinski Triangle illustrates how a pattern can repeat at different scales, and how this complex shape can be formed by simple repetition.

Students make their own fractal triangle, in which they make smaller and smaller triangles. Then, as an option, they will cut out their individual triangles and as a group assemble them all into a larger, fractal pattern that replicates the same shape.

Background:
The Sierpinski Triangle is a fractal with the overall shape of an equilateral triangle, subdivided repeatedly into smaller equilateral triangles. It is a self-similar structure that occurs at different levels of magnification. Self-similar structures are those where the whole is made up of parts that are similar or identical to the whole. Many natural occurring patterns are self-similar to some extent, i.e.: clouds and snowflakes.

Named after the Polish mathematician Wacław Sierpiński, who described its properties, the pattern appeared as a decorative design or motif many centuries prior to the work of Sierpiński.

Materials:
- Activity Sheet: Fractal Triangle Template (pg. 21) or blank paper
- ruler
- markers, or crayons, and pencils
- images of natural occurring fractals

Discussion:
Have students think about and discuss patterns that they see around them. Discuss some of the natural occurring patterns by sharing images and how some of these patterns are self-similar and may be defined as fractals.
**Action:**
Students may use the supplied template or they may proceed to draw the exercise freehand for a more artistic approach. Either way, following are the basic steps to follow.

**Part I: Forming the Sierpinski Triangle**

1. Take a point-side-up triangle
2. Connect midpoints of the three sides to create a point-side-down triangle.
3. Repeat process with the three resulting point-side-up triangles.
4. Repeat as many times as you want.

This example shows taking the process through 4 iterations.

![Sierpinski Triangle iterations](image)

**Part II: Adding Color for Understanding and Decoration**

Created downward pointing triangles may be colored as created. Each size or iteration of a triangle should be the same color in order to follow the steps of the reducing pattern. See below. Each student’s triangle is their own creation as long as it is fractal.

![Colored Sierpinski Triangle](image)

**Part III: Optional - Classroom Sierpinski Triangle**

When the students have completed their individual triangles they may cut them out and join their triangles into groups, to form a larger version of the same shape. The use of 9, 27, or 81 individual student triangles works best.
Fractals are Smart: Science, Math & Art

And you could keep doing this for a long time. Maybe you may go bigger, or design instead of smaller. You may cut out your triangle and join it with others to make a large al triangle. 

Forever.
ACTIVITY 3 Haiku Nature Stew

Inspired and modified from varied activities including those presented by The Haiku Foundation, www.thehaikufoundation.org/, and ReadWriteThink, www.readwritethink.org/.

A haiku is a three line unrhymed poem based on a traditional Japanese poetic form. The English Haiku has five syllables in the first line, seven syllables in the second line, and five syllables in the third line. Traditionally Haikus are about nature and specifically seasons. In a discussion about the patterns in nature what is more suiting than to express what you see in a poem with a pattern!

Activity:
In this activity students will explore images of nature (this can be physical objects of nature, as a tree, or events of nature, like seasons.) then list the words that describe those images and finally form them into a Haiku.

Materials:
- large pieces of paper or white board
- Activity Sheet: Haiku Nature Stew (pgs. 24-25)
- pencils

Background:
Haiku is an unrhymed Japanese poetic form consisting of 17 syllables arranged in three lines of 5, 7, and 5 syllables respectively. Originally, the haiku form was restricted in subject matter to an objective description of nature, suggestive of one of the seasons. It evokes a definite, though unstated emotional response. Haiku is an art of expressing much and suggesting more by using the fewest possible words.

Because of this, it demands the reader's participation. The words of the haiku merely suggests something, it is up to the reader to find a personal meaning. The haiku’s strength depends on the audience’s sensitivity to an underlining meaning and emotion.

Over time the subject range of a Haiku was broadened and its form adapted into other languages. However, a poem written in the haiku form or a modification of it in a language other than Japanese is also called a haiku.

Discussion:
Students will listen to several haikus read aloud and discuss their meaning and what emotions they felt when the poem was read. They will offer stories to what the poem was saying.
**Action:**
This is presented in several sections and may be presented over several class periods and days.

**Haiku Nature Stew**
In order to create a haiku the students will need to gather the ingredients and then add them to the haiku stew in the right amounts.

**Image Journey**
To accomplish this we need to go on an image journey to collect the descriptive words that we need. With the idea that nature is the inspiration of the poem; we can find this inspiration by reading a book, sharing images, going for a walk in the schoolyard, or calling upon imaginations.

Inspired, the students record single words on their worksheet and subsequently share them with the class having them written on the board for all to see. In this way students may share words that they may have not readily thought of.

**How Much**
After writing the words on the activity sheet, the students record how many syllables are in a given word.

**Mixing the Ingredients in the Right Amounts**
Students use the activity sheet to place the words into the proper haiku format; students may erase, cross out, and try again as they form their haiku.
- 17 syllables on three lines; 5 - 7 - 5
- first two lines are observations
- third line is a statement, a judgement
- together an awesome story is told
**Activity Sheet: Haiku Nature Stew**

Haikus tell stories about the world around us; it is a form of Japanese poetry that uses our senses to describe nature. It has a specific pattern defined by the number of lines and the number of syllables on each line. There are three lines; the first line has five syllables, the second has seven syllables, and the third has five syllables.

**Haiku Examples:**

*From Basho Matsuo, the first great poet of haiku in the 1600s:*

| An old silent pond...                              | Lightning flash—what I thought were faces are plumes of pampas grass. |
| A frog jumps into the pond, splash! Silence again. |                                                                 |
| Autumn moonlight—a worm digs silently into the chestnut. |                                                                   |

**Syllable Counting:**
Break the following haikus into their syllables to show the 5-7-5 pattern.

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<th>6</th>
<th>7</th>
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<tbody>
<tr>
<td>An old silent pond...</td>
<td>AN</td>
<td>OLD</td>
<td>SI</td>
<td>LENT</td>
<td>POND</td>
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<tr>
<td>A frog jumps into the pond, splash! Silence again.</td>
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<tr>
<td>I write a Haiku</td>
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<td>about nature and seasons</td>
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<td>It is perfection</td>
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Activity Sheet: Haiku Nature Stew (Con't)

Topic of your Haiku: ____________________________________________________________

Image Words: List the words that describe your topic. Next to each word, write the number of syllables of the word in the circle.

________________________________________  ______________________________

________________________________________  ______________________________

________________________________________  ______________________________

________________________________________  ______________________________

________________________________________  ______________________________

________________________________________  ______________________________

________________________________________  ______________________________

Haiku: From the image words above create your 3 line poem. Remember to count the number of syllables per line not words per line. (Haiku is 1 word but 2 syllables.)

1st Line: 5 Syllables

2nd Line: 7 Syllables

3rd Line: 5 Syllables
ACTIVITY 4  Explore the Word: the Frayer Model

Using the Frayer Model (see example below), students will define two important words from the packets vocabulary list: pattern and sustainability. The Activity Sheet: Explore the word - the Frayer Model (pg. 27) may be printed and glued into science notebooks.

This activity can also serve as an assessment for students to demonstrate their understanding of the vocabulary terms.

<table>
<thead>
<tr>
<th>Definition (In your own words)</th>
<th>Facts/Characteristics</th>
</tr>
</thead>
</table>
| A simple, closed, plane figure made up of three or more line segments | - Closed  
- Simple (curve does not intersect itself)  
- Plane figure (2D) |

<table>
<thead>
<tr>
<th>Polygon</th>
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<table>
<thead>
<tr>
<th>Examples</th>
<th>Nonexamples</th>
</tr>
</thead>
</table>
| - Rectangle  
- Triangle  
- Pentagon  
- Trapezoid  
- Hexagon  | - Circle  
- Cone  
- Arrow (ray)  
- Cube  
- Letter A |
# Activity Sheet: Explore the Word - the Frayer Model

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<th>Definition</th>
<th>Characteristics</th>
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<th>Non-examples</th>
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SUPPLEMENTAL INFORMATION

Biographies
These landscape architects either directly contributed to the Gardens at the Cummer Museum or indirectly contributed by their influence on those who did.

Frederick Law Olmsted, Sr., 1822 to 1903
Unsurpassed in the field of landscape architecture, Frederick Law Olmsted, Sr., defined and named the profession and designed many of America’s most beloved 19th century parks and landscapes, including New York’s Central Park, Brooklyn’s Prospect Park, the Biltmore Estate, and the U.S. Capitol grounds. His commitment to public works stemmed in part from his abolitionist stance: by creating elegant and equitable public spaces for all, he hoped to show the inherent beauty possible in a free society. During his remarkable 40-year career, beginning in the mid-1850s, Olmsted and his partners and employees created the first park systems, urban greenways, and suburban residential communities in this country. He and his colleague, Charles Eliot, were pivotal figures in the movement to create scenic reservations to preserve natural treasures such as Yosemite, Yellowstone, and Niagara Falls. His collaborations with Charles Eliot, Calvert Vaux, Warren Manning, and his sons, John Charles and Frederick, Jr., allowed his influence to continue long past his retirement in 1895.

Olmsted Brothers, 1898 to 1980
In 1898, after the retirement of their father, Frederick Law Olmsted, Sr., Frederick Law Olmsted, Jr. and his half-brother, John Charles Olmsted, formed the Olmsted Brothers firm. Significant firm projects include the 1906 Lewis & Clarke Exposition in Portland, OR and 1909 Alaska-Yukon-Pacific Exposition in Seattle. The pair terminated the firm’s involvement in the 1915 San Diego Exposition rather than despoil the natural landscape of Balboa Park with planned structures.
William Lyman Phillips, 1885-1966
Born in West Somerville, Massachusetts, Phillips was an early student in Harvard’s landscape architecture program, from which he graduated in 1908. By 1911 he joined the Olmsted Brothers firm, where he worked on the Boston Common. He left the firm after two years and worked in a variety of roles in the U.S. and abroad as an independent practitioner and for the U.S. government. In 1925 Phillips moved to Lake Wales, Florida, where he renewed his association with the Olmsted Brothers and spent the rest of his 50-year career. His work illustrated an understanding of the native Florida landscape, its unique ecosystems, and particularly its plants. Working with private clients and for the National Park Service, Civilian Conservation Corps, and Dade County he created landscapes which have helped define Florida’s image. Fairchild Tropical Botanic Garden in Coral Gables is Phillips’ best-known work. In 20 years there, he developed tropical plant collections organized by families, arranged along two formal axes with shaded walks and scenic views. His extensive body of work also includes private estates, cemeteries, public thoroughfares, and campus planning projects, including Greynolds Park, Bok Tower Gardens (with Olmsted Brothers), and McKee Botanic Gardens.

Ellen Biddle Shipman, 1869-1950
Around 1912, Ellen Biddle Shipman began her career as a garden designer in Cornish, New Hampshire, and gained a mentor in the architect Charles Platt. Platt’s assistant taught her draftsmanship, and from Platt himself she developed a taste for strong axial garden layouts and tight visual connectivity between house and garden. She held her own, however, in preferring the simple clean geometries of Colonial gardens.

By 1920, she had opened an office in New York City, where she hired graduates of the Lowthorpe School of Landscape Architecture. Her most noted gardens are Longue Vue Gardens in New Orleans, the Cummer Estate (now the Cummer Museum of Art & Gardens in Jacksonville, Florida), and Stan Hywet Hall in Akron, Ohio, the latter where she was recommended by Warren H. Manning. Among her rare commercial projects are Lake Shore Boulevard, Grosse Point, Michigan and Aetna Life, Hartford, Connecticut.
RESOURCES

Reading Resources:
- *Keeping a Nature Journal* by Clare Walker Leslie and Charles E. Ross
- *Sharing Nature with Children* by Joseph Cornell
- *Nature for the Very Young A Handbook of Indoor & Outdoor Activities* by Marcia Bowden
- *Handbook of Schoolyard Plants and Animals of North Central Florida* by Peter Feinsinger and Maria Minno
- *Sky Tree: Seeing Science Through Art* by Thomas Locker
- *Greening School Grounds: Creating Habitats for Learning* by Tim Grant and Gail Littlejohn
- *The Nature of Florida's Neighborhoods Including Bats, Scrub jays, Lizards and Wildflowers*
- *The Scoop of Soil* by Natalie Rosinsky
- *A Mirror to Nature: Poems About Reflection* by Jane Yolen

Music Resources:
- *Forest Sounds* by Tracks of Nature
- *The Pines of Rome* by Ottorino Respighi
- *Ancient Airs and Dances* by Ottorino Respighi
- *Appalachian Spring* by Aaron Copland
- *Carnival of the Animals* by Camille Saint-Saëns
- *Around the Campfire* by Peter, Paul, and Mary

Internet Resources:
- NGA (National Gardening Association) Youth Gardening - [www.kidsgardening.org](http://www.kidsgardening.org)
- The Cultural Landscape Foundation - [tclf.org](http://tclf.org)
- Fractal Foundation - [fractalfoundation.org/](http://fractalfoundation.org/)
- The Haiku Foundation - [www.thehaikufoundation.org/](http://www.thehaikufoundation.org/)
- Introduction to the Nature Journal, Smithsonian in Your Classroom - [wwwSmithsonianEducation.org](http://wwwSmithsonianEducation.org)
- North American Association of Environmental Educators - [www.naaee.org](http://www.naaee.org)
- Project Learning Tree - [www.plt.org](http://www.plt.org)
- Project WET - [www.projectwet.org](http://www.projectwet.org)
- ReadWriteThink - [www.readwritethink.org/](http://www.readwritethink.org/)
- Acorn Naturalists - [www.acornnaturalists.com](http://www.acornnaturalists.com)
- Flower parts and pollination - [makemegenius.com/video_play.php?id=8&type=0](http://makemegenius.com/video_play.php?id=8&type=0)
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