



LEARNING FROM THE LANDSCAPE: VISUAL ART AND OUTDOOR LEARNING IN
CHALLENGING TIMES

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Introduction

In her study, *Poetry Garden, Ecoliteracy In an Urban School*, Veronica Gaylie (2008) asks “What is the role of creative language as it relates to urban students’ contextual awareness of the natural environment?” (p.1)? I began this project with a slight shift of Gaylie’s question; **What is the role of *visual art* as it relates to students’ awareness of the natural environment?** I planned to conduct research in the school garden in which I have been teaching since the Spring of 2018. However, what began as a study of how learning, particularly visual art learning happens in a school garden has, due to the coronavirus pandemic, been deprived of both a school and a garden.

While a shelter in place order closed schools and parks indefinitely and had educators scrambling to teach from a distance, I saw Spring continuing outside my window, as if all was right in the world. Out of a profound awareness of the importance of being outside in such a challenging time, I decided to continue the project by widening my scope from art learning in a school garden to art learning in whatever outdoor space is available to students, whether it is their own backyard or a patch of green in their neighborhood. Because I believe now, more than ever, that learning about the natural world in a natural setting must be included in the way we are currently rethinking schooling, I am approaching my original question with a new sense of urgency.

My focus on art learning in the out of doors comes from many years of experience as an art educator, working in inner-city schools, where a perceived disconnect with nature led to the realization that art education can be greatly enhanced by study in natural environments. For the last two years, I have taught art and ecology in an elementary school garden. I am also an artist with a painting practice that involves exploring relationships between landscape and the built environment. This relationship between art and the landscape has informed my teaching practice as well as my art practice.

Literature Review

For the purposes of this study, I will refer to outdoor learning as pedagogy that incorporates the natural outdoors as an integral part of children's educational curriculum (Subramaniam, 2002). While many educators have seen school grounds as an important extension of the indoor classroom (Lucas, 1995), outdoor learning can happen in a school garden, a greenhouse, a local park, farm or nature preserve or even backyard or neighborhood open space. The outdoor classroom is a term which refers to using areas of the outdoors to conduct structured educational experiences in nature. (Eick, 2011). Ecoliteracy refers to the understanding of ecosystems, their basic principles and the ways they have evolved to sustain the web of life (Capra, 2013).

Education in the visual arts has traditionally emphasized nature study as a means of developing formal skills in drawing, painting and sculpture with a sense of realism guiding artists' view of the natural world. As art education has entered the post-modern era, art educators have called on students to make connections between natural forms and ecological content so that art can address environmental issues.

(Ulbricht, 1998). In fact, ecology has been on the mind of artists since the land art movement of the 1960s when visual artists began creating artworks with natural materials, using natural processes in natural settings. Contemporary artists have moved in the direction of activism using their work to illustrate environmental destruction and restoration (Blandy, Cogdon and Krug, 1998). This in turn has encouraged art educators to teach children about art in a way that promotes the interdependence and interconnectedness of all things, while drawing attention to the need for balance and restoration (Blandy and Hoffman, 1993).

As the definition of art education has expanded to include environmentalism, art has been shown to play a special role in awakening students to their immediate surroundings through place-based education (Blandy and Hoffman, 1993). The connection between learners and their local landscape is supported through taking art instruction outdoors (Inwood, 2018), where students experience their familiar environs through a variety of lenses such as biology, history, social studies and art. Place based learning is an interdisciplinary form of study which blurs the boundaries between art making, social critique, scientific inquiry and activism (Graham, 2007).

Case studies of this approach demonstrate a blending of art and ecological learning taking place in numerous outdoor classrooms. At a number of public primary and middle schools in Toronto, Hillary Inwood (2018) documents art projects such as murals, found art sculpture, fiber art installations and ceramic tiles designed and created in response to the specific environment of the schoolyard and school garden. These experiences encouraged environmental awareness in students as they learned new ways of seeing their local environment (Inwood, 2018). While calling attention to the

rich possibilities for art learning in the out of doors, Inwood (2018) claims that “more exemplars are needed to help inspire art educators to lead the way out the door and into the school garden as a site for learning“ (p.45).

Notwithstanding such gaps in research based solely on outdoor art education, insight into how children learn outdoors can be found in a number of studies on the pedagogical role of school gardens. Green and Duhn (2015) take a relational materialist approach to outdoor learning by exploring the materiality of objects as “non-human” teachers, guiding learning through the qualities of their particular properties. This perspective is relevant to art education as the researchers describe students interacting with natural building materials such as wood and bamboo and playing in a sunflower maze. They describe a shift in the anthropomorphic focus to the intra-active encounter where” bamboo and children together create the structure” (Green and Duhn p. 7). In the sunflower maze plants, seeds, birds and insects engage the students as all become equal participants in the activity. The researchers consider whether “children play with the maze or the maze plays with the children” (p. 12).

Green and Duhn’s method consisted of walking interviews conducted with 53 children ages 6-13, whose parents had given informed consent to their participation. The researchers describe their methods as follows.

As part of the walking interviews (conducted with either one student or in pairs) children were asked to take the researcher to a favorite location where gardening and/or sustainability activities occurred. Here, children were encouraged to tell a story about the site, including why it was special to them and the type of activities

and interactions that had taken place. At the site students were also invited to take a photo. Other sources of data included children's hand-drawn maps that illustrated their garden design ideas for new garden projects, personal research journal, field notes, and over 100 photographs taken by gardening teachers, children and the researcher across the three research sites (p.5).

The researchers analyzed the walking interviews for a storyline or set of overarching categories and concluded that great possibilities for learning exist in the relationship between children and the materiality of non-human forces in the garden.

Carrie Green's (2017) study is also useful from an art education perspective as she investigates' young children's' outdoor learning experiences through activities such as painting, role playing and building. After observing a student interacting with a caterpillar crawling across her painting, Green finds that "creating art in the forest allowed for unique interactions with the forest flora and fauna which could not be had indoors" (p.6). Similarly building with natural materials found in the forest deepens children's sense of place through sensory manipulation while developing environmental competency (Green, 2017)

Green's study is of particular interest for her methods of research by or with children rather than research on children. The study was informed by a phenomenological outlook based on the idea that meaning is socially constructed by individuals, in this case children, without direction from adults.

Children's play throughout the forest area was documented by way of small wearable cameras which allowed the children to review their movement in the

landscape through discussion and interpretation (Green, 2017). Topics for research were based on children's expressed interest. These included rosebushes, forts, castles and bugs. Research was conducted by the children at four data collection stations in the forest where they explored natural phenomena through art, roleplaying, building and bookmaking. Children then presented their research to family in the form of a tour of their data collection areas and their special places in the forest (Green, 2017).

Also useful in terms of methodology is Bowker and Tearle's (2007) study which drew data from six primary and secondary schools in Kenya, England and India to identify children's' perceptions of their own learning in school gardens. Because many of the students had limited fluency in English, the researchers used a variety of methods to collect their data. Concept maps encouraged students to link whatever words and phrases came to mind when given the simple prompt, School Gardening. The students' words were then categorized to identify broad concepts which emerged from the data. The concept maps were supported by contextual observations, interviews with the students and analysis of student's drawings (Bowker and Tearle, 2007).

Bowker and Tearle, (2007) found commonalities in the "pride, excitement and high self-esteem among children associated with gardening" (97). They also concluded that there were conceptual differences in how school gardening is perceived by students amongst the different nationalities.

The English school children saw the school garden mainly as a place for pleasure leisure, play and enjoyment... while the Indian and Kenyan students

considered the school gardens more as being a place of learning, community, security and peace (p. 95).

Bowker and Tearle (2007) concluded that the experiential learning that happens in school gardens, while culturally varied, uniformly contributes to a greater understanding of science and nutrition as well as boosting the student's enthusiasm for school in general.

Analyzing the artwork children make in nature was the focus of Somerville's (2013) work with children in a place-based learning program in an Australian elementary school. The students, members of an aboriginal community plagued by pollution from a coal burning power plant were asked to do an artwork to show what they learned after participating in a 13-week wetland restoration project. Like the concept maps in Bowker and Tearle's study, the drawings combined the children's images with written wonderings to reflect on the experience. Somerville realized that the relationship between image and text created an unexpected set of data that was "far richer than the wonderings alone" and decided to call them "place learning maps" (p.411).

Somerville asks, "how can an embodied experience of learning in place enter representation to become available for pedagogical work" (p. 412)? and finds answers in the place learning maps. The maps are "artifacts of the learning process where students were imaging their sense of learning in the wetlands on sheets of paper" (p.412). She goes on to analyze the drawings composition for meaning, evaluating what is the central image, how are the images arranged spatially what is the relationship between images what is the relationship between language and text. Through the

artwork, she identifies “storylines” of the wetlands, told by children through their words and images.

Finally, Gaylie’s (2007) study provides insight into how learning and creativity happen in outdoor setting. Gaylie examined how middle school students in inner city Vancouver wrote creatively about their local environment. The study which took place in the school’s food production garden also focused on the development of eco literate knowledge through creative language.

After participating in a variety of creative writing exercises, and lessons on ecology related topics, the students were invited to create their own poetry which Gaylie analyzed. She found that students were more engaged in the process of writing when words related to their local environment were used in the classroom context. When students spoke and wrote about areas they knew, their writing displayed a deeper level of ecological reflection and knowledge (Gaylie, 2008). Finding meaning in the school garden helped students describe concepts like resilience, beauty, coldness, death, that they then were able to relate to their own lived experiences. Writing poetry in the school garden was a transformative experience for the students that improved academic performance, improved self-esteem and created a rich understanding of the natural world.

Much of the literature on in the intersection between outdoor learning and art education, begins with dire warnings about the failure of educators to address environmental problems (Blandy, Cogdon and Krug,1993), (Graham, 2007), (Inwood, 2018). These scholars list natural disasters, global unrest, wars and pandemics as the

direct effects of global warming facing the next generation. Many suggest that the solution is to introduce students to the natural world with direct experiences in nature. Clearly, now is the time to take these ideas seriously and I hope to address these in my research.

Methods

Despite the limitations of the coronavirus pandemic, I have tried to remain true to the original intent of this study; to explore the ways in which children's artwork relates to their awareness of the natural outdoors. Instead of conducting research on drawings created by the students in the McNear Elementary School garden during weekly garden sessions, the study took place through distance learning and the data was collected through drawings created in personal out-door "sit-spots." I am fortunate to have a colleague, McNear fourth grade teacher, Kirsten Franklin, whose class I had in mind for this research project before the school closings. Kirsten shares my commitment to outdoor learning and had assigned students to choose sit-spots at the outset of distance learning. She described the sit spots as "a place that has a variety of plants and hopefully insects or other wildlife that live or visit there. It should probably be a place that is free from human noise and influence, (as much as possible.) You should be able to sit comfortably in this spot for 15-20 minutes to just watch, draw, and write. "

The participants, Mrs. Franklin's fourth grade class of thirty students are a group I know quite well, as I have been their garden teacher since the spring of 2018. The students have quite a bit of prior knowledge from our experiences together which have included planting, tending, harvesting, preparing and eating produce, as well as

integrated art and science units on botany, history of plants, plant identification, observational drawing and nature journaling. Kirsten specializes in environmental literacy and has engaged the class in a number of environmental science projects such as data collection through the federal research catalog, Citizen Science, a BioBlitz survey of flora and fauna on the school campus and a local creek restoration. She and I have collaborated over the past two years on planning and implementing a bird habitat and native plant restoration project on the school grounds. Some of these students are children of friends and neighbors and a few of them are close friends of my son. I have not attached names with any of the drawings in order to eliminate preconceptions in my analysis of the images.

While distance research, like distance learning is certainly not optimal, I believe that the drawbacks of situation have added an unexpected dimension to the study. Physical proximity would have allowed me to see the students' artwork as it developed. To be able to hear their voices, observe their body language and answer their questions would have influenced my perception of the artwork produced. As it is, because the material had to be presented digitally to students in their homes, I could not see the place they were in (sit spot) or the subjects of their drawings. For this reason, the data has a degree of purity, as it is coming straight from the source.

Activities

Students were assigned a variety of activities to facilitate observation and exploration of their particular sit spot presented by Mrs. Franklin and myself. Nature journals were provided in take home bags when materials were sent home during the transition to distance learning. Mrs. Franklin assigned four days of journal activities to

be completed in the students' sit spots including scientific illustration; recording of temperature and weather; I notice, I wonder, it reminds me of... Mrs. Franklin very generously allowed me to use the images from these activities for this study.

I created three videos to present to the class at daily Zoom meetings. All three videos were animated drawing tutorials based on fractal patterns in nature, made using the app, StopMotion. The videos included verbal captions with explanations of drawing steps and directions for finding and drawing examples of these patterns in their sit spots. I attended three Zoom meetings and was unable to connect to one meeting. Videos were also posted to Google Classroom page for students to access.

Data Collection

After completing the various drawing activities in their sit spots, students photographed their drawings and sent them to Mrs. Franklin who forwarded the images to me. Some were uploaded to end of the week google slide presentations. I explained an overview of my study to the students in our initial Zoom meeting and in the final Zoom meeting I communicated to them my gratitude for their participation as well as my hope that they would take the time to submit as many photos of their drawings as possible. In the end, I received 29 drawings, voluntarily submitted from 13 students.

Again, the limitations of distance research have had a significant effect on the data I was able to collect. I found that full participation in any of the activities was not possible to achieve without in-person direction at school, which would have allowed for a "cleaner" study of all the results from a single activity. But because the samples were filtered by the degree of separation caused by students working in isolation and submitting the work voluntarily, a larger amount of activities turned out to yield a larger

sample of artworks. For this reason, the data comes from a variety of activities all with the same aim of engaging students with their sit spots.

Another complication is that the students' photography skills are not ideal. Many of the images are shaky, blurry and difficult to read.

Criteria for Analysis

In determining the role of visual art as it relates to students' awareness of the natural environment, I have identified several criteria for analyzing the students' drawings of their sit spots.

- What art elements are observable in the artworks? (color, texture, pattern, repetition, scale)
- What is the relationship between words and text?
- Do the images reflect an understanding of the concepts presented in the videoed drawing tutorials?
- What are the dominant images?
- What are the recurring images?
- Is there a "storyline" in the representations of the sit spots? Who are the characters, human, non-human? How is the setting described? Is there action represented?

Analysis

I have chosen eight images of the student's drawings from the various activities which I feel best represent the twenty-nine total images I received. What follows is an analysis of the images based on the above criteria.

Figures 1 and 2 are from a two-page spread. In figure 1 a plant with a red bloom, which is the dominant image, hangs across the page and extends through the fold in the paper. The details are accurately rendered, demonstrating an awareness of the smooth texture of the petals and the jagged texture of leaves which have green and yellow shading. In figure 2, a cluster of flowers is shown with overlapping of stems, indicating a complex understanding of space and form. The text reveals an awareness of color as well as curiosity, humor and imagination. In wondering why the big plant, which reminds them of a spear and an eggplant, hangs down and never fruits, the student exhibits an uninhibited line of questioning. How did the smaller plant get here, the student wonders? Was it aliens? Text and image work together to present a clear representation of the student's curiosity about that which they are observing. These wonderings do not reflect a preoccupation with being correct but instead show an inquiry-based connection where there is room for playful reflection.

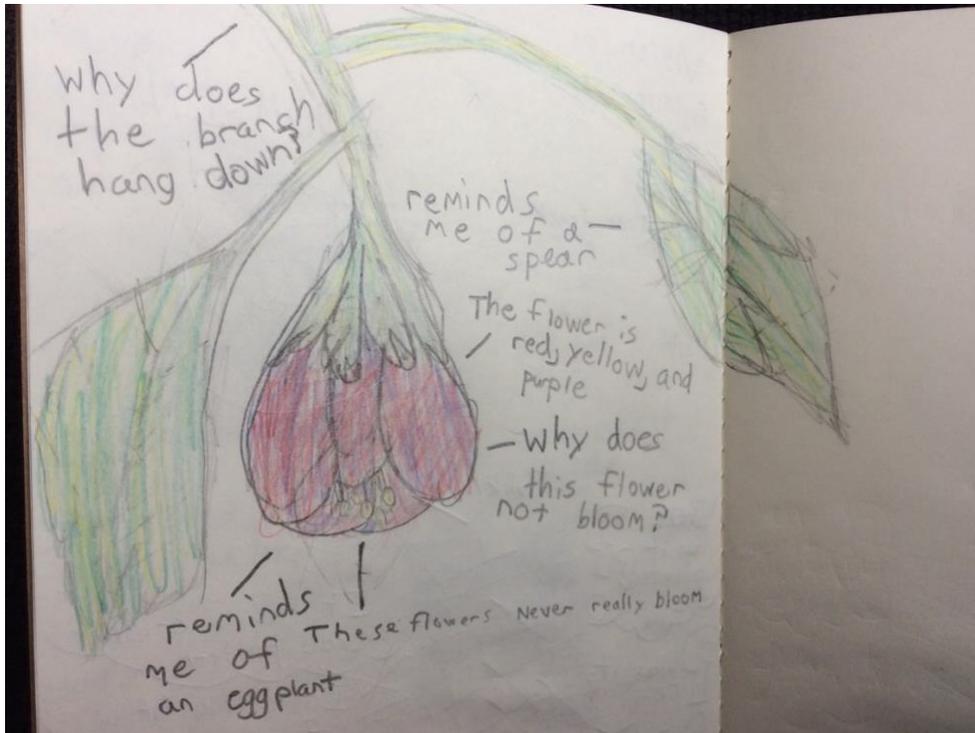


Figure 1

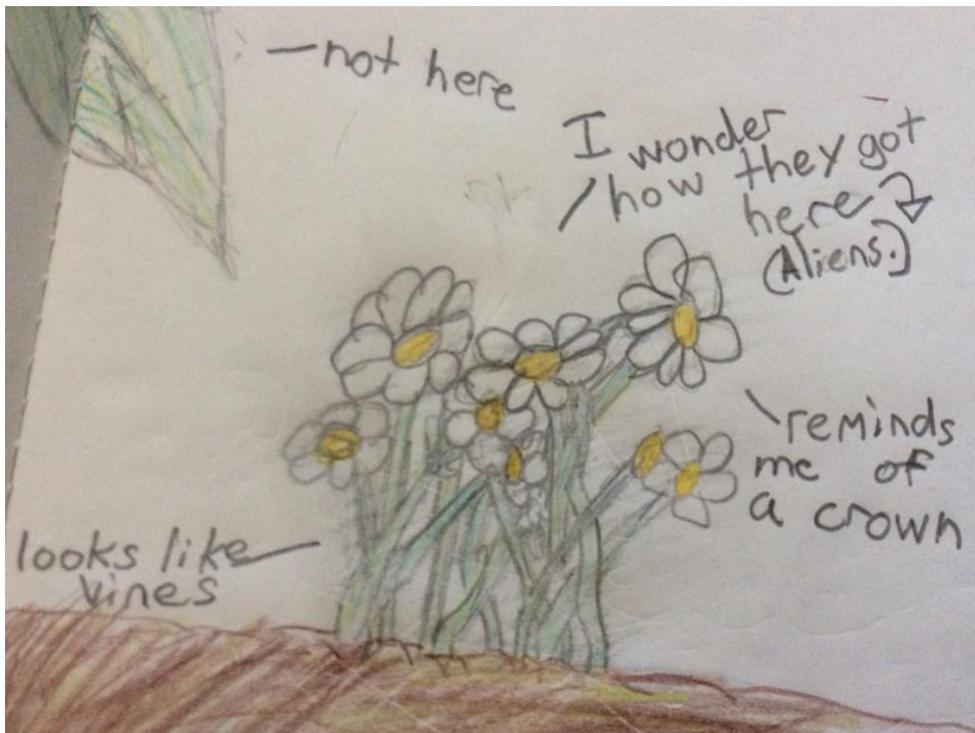


Figure 2

Figures 3, 4, 5, and 6 were completed after the students viewed the videoed drawing tutorials on identifying self-similar patterns in nature. The text supplied in figure 3 indicates that the student is applying the skill demonstrated in the video to observation of a real plant. The drawing shows a segment of a plant where joined branches grow from a central stem. The branches are generally self-similar with mostly two leaves per branch. The veins in the leaves show similarity with the branching structure of the whole segment. The text allows me to see that the student did follow the directions presented in the video, which were to observe a real plant, not simply repeat an abstract pattern. The written questions reflect the particularities of the plant observed such as how the leaves are attached and their color. Here, like in figures 1 and 2, I see that the text and image work together to represent the student's experience.

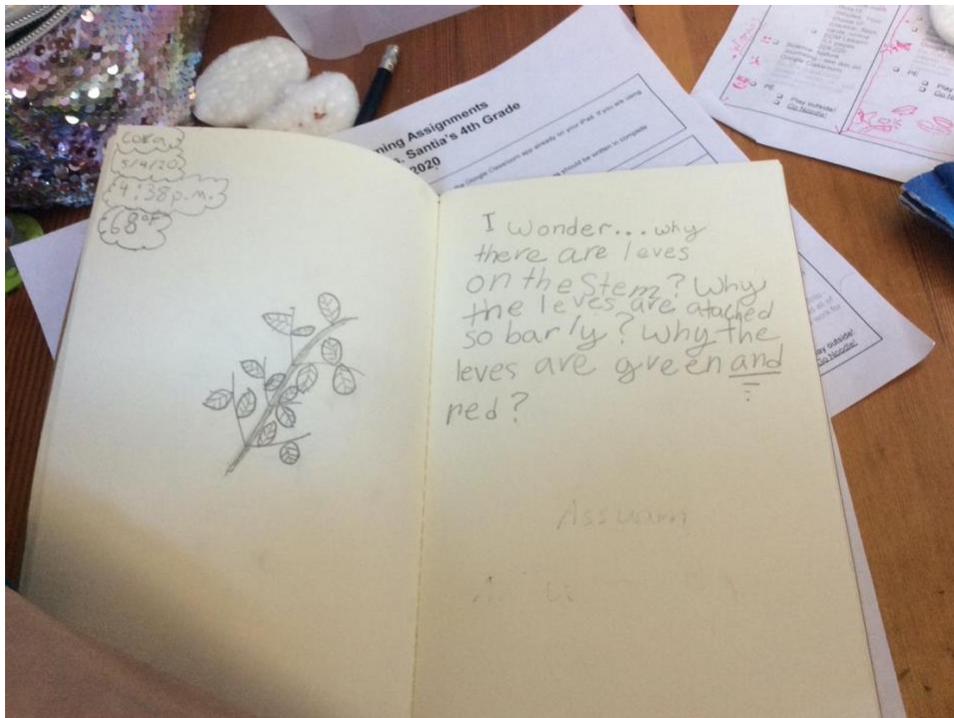


Figure 3

Figure 4 does not contain text but still represents an authentic application of the concept taught to a real specimen. The central stem extends the length of the page with three subordinate branches on the left side and four on the right. The next iteration generally repeats this pattern of three and four branches on either side of the central stem. The texture of the leaves is indicated by pencil shading.



Figure 4

The drawings in figures 5 and 6 display an understanding of another concept presented in the videos, the idea of self-similarity seen in the Pythagorean tree, a fractal

composed of identical triangles and squares configured in diminishing sizes. All of the submitted images show the students practicing the pattern as presented in the video, but none show discernable evidence that the pattern is being applied to a real form in nature. This points to a short coming in the presentation of the activity and suggests follow up is needed to some of the directions presented to the students. I found that there is a steep learning curve in creating and presenting digital content in a way that makes up for the absence individualized instruction.

However, as Figures 5 and 6 illustrate, the images show a degree of playfulness and experimentation with a new concept, reflecting again that the nature journals are a safe place for open-ended inquiry.

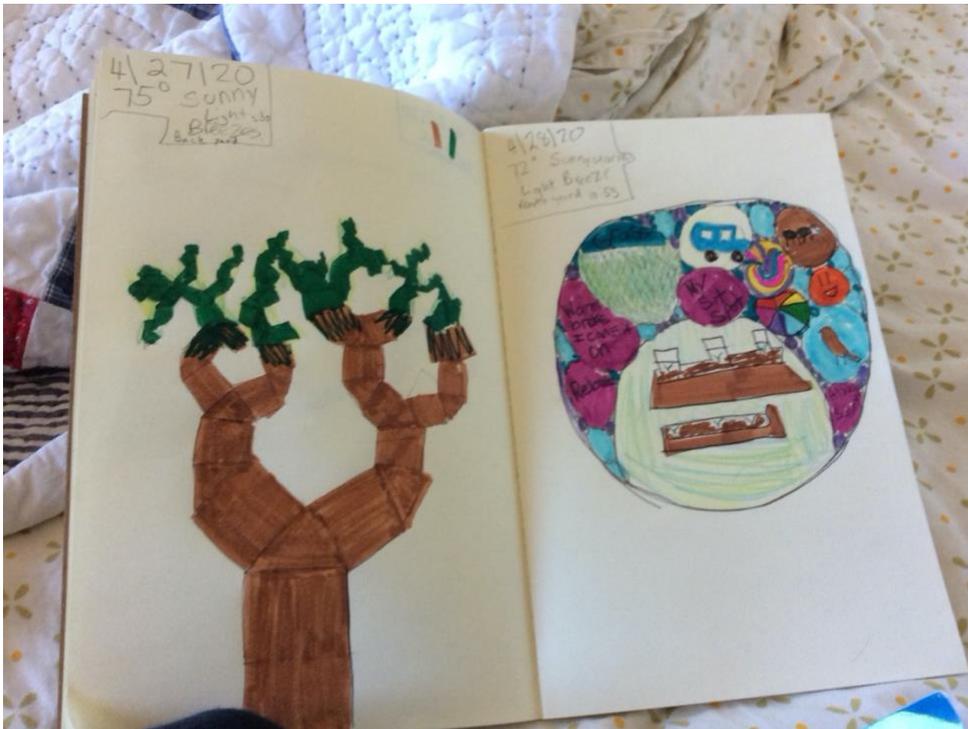


Figure 5

Figure 6 in particular, shows the student carrying the fractal formula through smaller and smaller iterations. As the form repeats itself, the branches twist and spiral in different directions with remarkable precision. The student has counted and recorded

the number of squares and triangles at the top of the paper, indicating a high degree of interest in the activity.

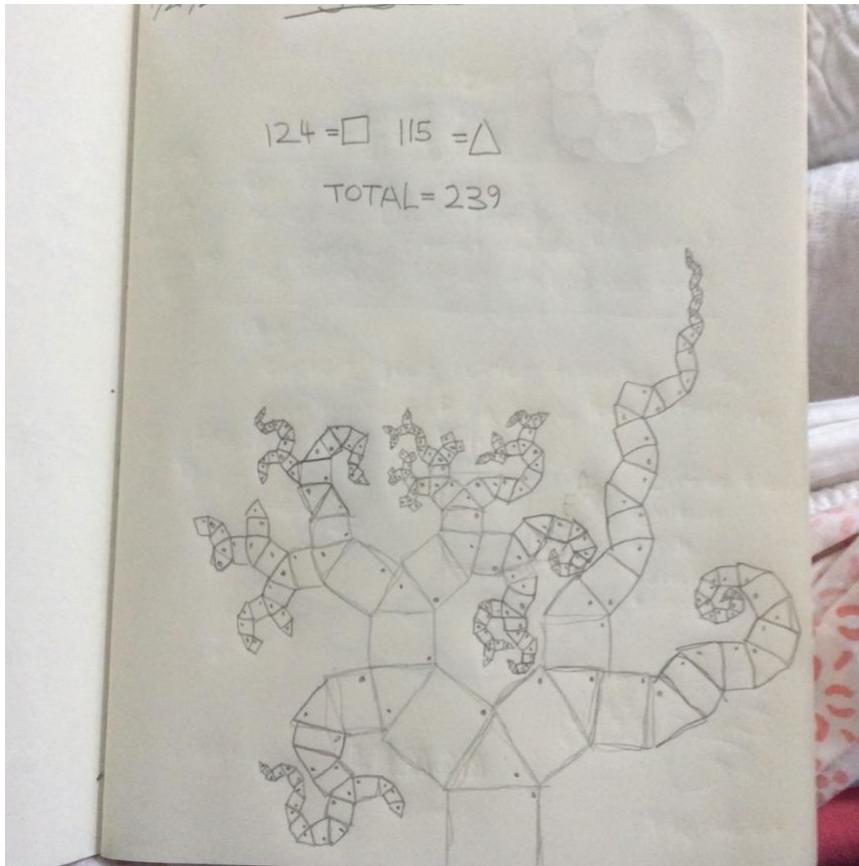


Figure 6

Visual Concept Maps

The culminating video gave instructions to create a concept map of the sit spot based on a fractal, the Apollonian gasket, which is made up of tangential circles. This fractal was introduced by me the week before school closed and reintroduced by Mrs. Franklin after distance learning began, so students were quite familiar with the concept. Students were instructed through a video presentation to describe their sit spot using the Apollonian gasket form, and to record details in the circles. They were encouraged to use a combination of words and images. Of the 29 images students voluntarily submitted, 9 were the visual concept maps.

The images in figures 5, 7 and 8 are representative of the group of images submitted. They contain a large amount of detailed information about the sit-spots and present many options for the researcher. A quantitative analysis could tabulate and chart the bits of information, look at which images are recurring and draw conclusions about what the students observed. A comparison of the relative sizes of the images could lead the researcher to draw inferences as to the importance of certain details. The number of references to weather, smells, sounds in addition to visual images could be gathered in order to create a multi-sensory portrait of a particular place.

All of these approaches are aiming at identifying the story told by the drawings. What do the concept maps tell us about the students' interactions with an outdoor spot? What is the setting? Who are the characters? What do they feel? What is the action? Are there any larger lessons learned?

In all of the concept maps we see text and images combine to tell the story. In figure 5, we learn "there are warm bricks to sit on", and the spot is "relaxing." Raised garden beds occupy the largest circle, while additional characters are a bird, car and an ant. A color wheel and abstract patterns create a lively backdrop. Filled with contrasting colors the drawing vibrates with energy.

Figure 7 has a large cast of lead and supporting characters, including a "variety of plants" and trees drawn in different styles. Also included, "a view of the open sky", birds, "animals walking by" and an image of someone walking a dog. "There is usually a breeze." Leaves, petals and insects and vegetables occupy the smaller circles. Many colors, shapes and textures fill the space. In this artwork, the student is the protagonist, surrounded by a vibrant and busy scene.

Figure 8 creates a “calm”, “quiet” and “comfy” setting which “smells good.” “The view” contains a fence, trees, a stump, a flower. Characters include insects, the sun, chickens, and baby chicks and “lots of trees.” The individual drawings are rendered without color but instead through tonal pencil marks indicating various textures and details while indeed giving a calm and unified feeling to the work. Individual circles contain the letters L, I, F, E.! The student has represented their discovery that in the simple observable details of an outdoor place, life itself is seen.



Figure 7

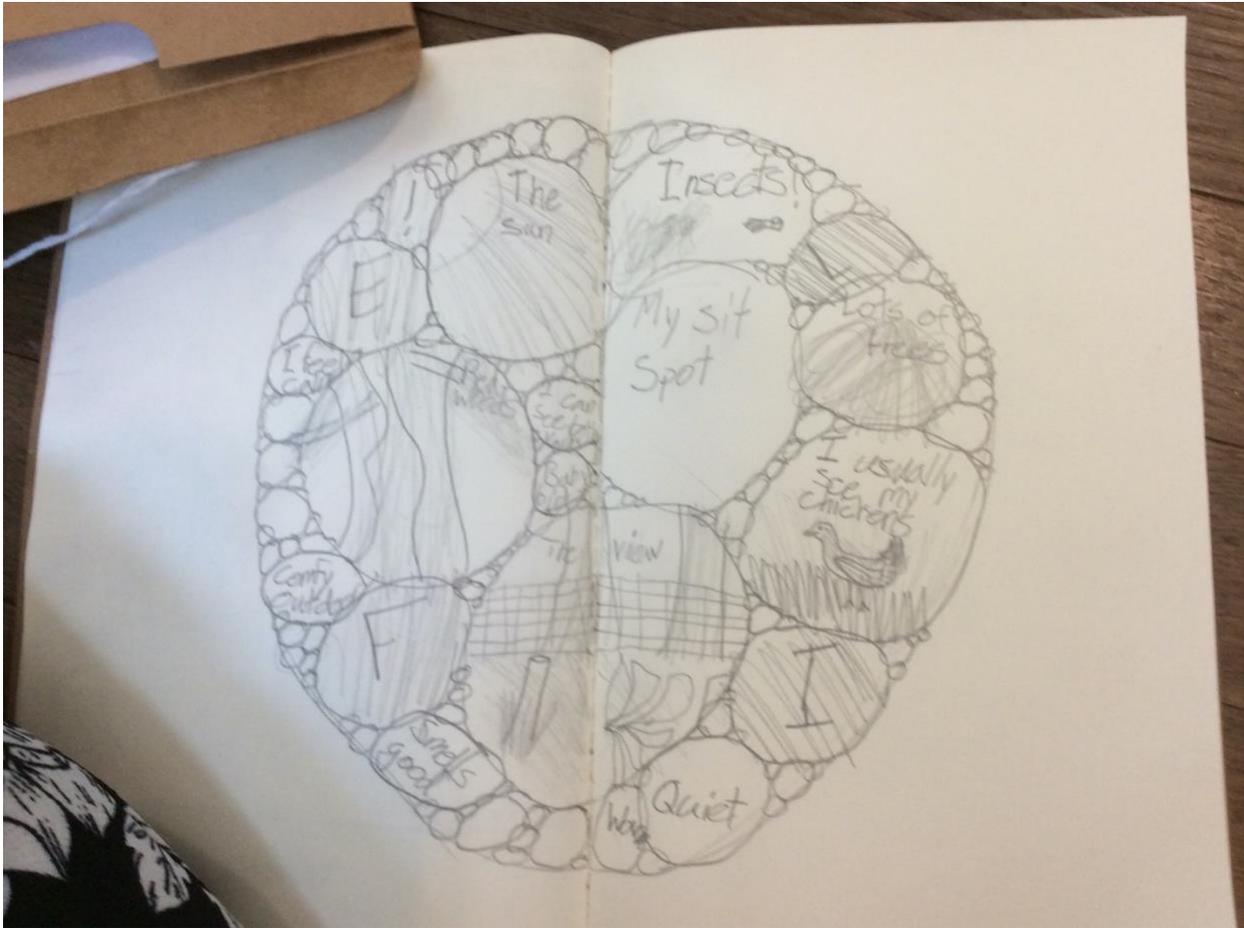


Figure 8

Conclusions

The fact that this study has taken place within the context of a major societal crisis cannot be overlooked. While I did not assess the students' awareness of the pandemic and the effect it had on their daily lives, I can say from my own personal experience that in this time of uncertainty, isolation, illness and death, I find hope in these "stories". While they are not the ones I had envisioned at the outset of the project, the stories, told through the artwork of this fourth-grade class, alone in their back yards, pulsate with the life that is all around us.

As such, I have found that children's artworks can be seen as important artifacts of the outdoor learning experience. Like Somerville's drawings by children of a wetland in Australia, the artwork I analyzed reveals the students' process of embodying outdoor places. Through multiple sensory experiences channeled onto paper in drawn images and text, the artworks are a record of the students' direct experience. What the students' heard, smelled, touched, felt and saw becomes real for whoever witnesses their artworks.

The study shows that because nature operates on such a sensory level, art is a powerful way to experience it. By communicating in the language of visual art, i.e. line, texture, pattern, color, form and scale, the children's artworks are authentic records of the natural elements that were noticeable and interesting to them. The drawings demonstrate that visual representation is an act of connection and provides a critical tool with which children can engage with the natural world.

The work also shows that nature journaling is an effective way to encourage the freedom and safety necessary for deep inquiry. In the students' juxtaposition of image and text, space was created for a certain type of noticing and wondering where there are no wrong answers and where observation, curiosity and playfulness are mutually beneficial.

The study demonstrated that children's artworks can tell a unique and personal story of a particular place. The unusual circumstances in which the teacher/ researcher was not able to be physically present in conducting the study provided

possibilities for students to develop their own agency in developing authentic connection. One unintended consequence of this study is the conclusion that in the absence of a teacher, nature becomes the teacher.

I find these conclusions to be extremely important. I believe strongly that every generation, and today's students in particular must develop an informed relationship with the natural world, its patterns, systems, forms and structures. It is time to repair the broken relationship between humans and their environment and to do this, educators must find ways to understand and facilitate children's connection to natural places. Visual art education is a simple yet powerful way to support children's deep connection to place and in so doing can break the pattern of indifference and ignorance toward the natural systems that sustain life on Earth.

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