

PRESCHOOL NATURE-BASED ACTIVITIES

DEVELOPING A NATURE-BASED CURRICULUM FOR PRESCHOOL AGED CHILDREN

by

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PRESCHOOL NATURE-BASED CURRICULUM

Project Certification Page

State University of New York at Fredonia
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CERTIFICATION OF PROJECT WORK

We the undersigned, certify that this project entitled Developing a nature-based curriculum for preschool aged curriculum by Kristen Finch, Candidate for the Degree of Masters of Science in Education, Curriculum and Instruction Inclusive Education, is acceptable in form and content and demonstrates a satisfactory knowledge of the field covered by this project.


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Abstract

The literature surrounding the important topic of nature education illustrates the need for more children to be involved in nature play due to an escalation of children being disconnected from nature in their everyday lives. The literature also illustrates that nature-focused learning experiences promote children's learning and development in all domains: social-emotional, physical, and cognitive. Therefore, the purpose of this curriculum project is to create 16 nature-based learning experiences. These experiences immerse preschool children, ages 3 to 4, in structured and unstructured opportunities for outdoor experiences by implementing nature-based activities into their curriculum. The learning experiences in this curriculum project will require the children to go outside and engage in the most applicable, hands-on activities. All activities will be based upon the children's interests and developmentally appropriate. This will empower young children to continue to learn and have developmental gains while engaging outside in nature as an extension of their learning inside in the classroom.

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Introduction

Research shows that young children are spending less time outdoors as compared to the previous generation (Larson, Green, & Cordell, 2011). Instead, they are inside watching television, listening to music, playing video games, and playing on the computer (Larson et al., 2011). This lack of time outdoors is creating a “nature-deficit disorder”, a theory that Richard Louv (2005), author of *Last Child in the Woods*, developed to explain the disconnect that children of this generation have from the natural world. Research also shows that children can benefit tremendously from spending time in nature (Benson & Miller, 2008). These benefits include: social-emotional, physical, and cognitive developments (Benson & Miller, 2008). Since children can have developmental gains from spending time outdoors in nature, children should be reconnected with nature to minimize the nature-deficit disorder that is being found.

My proposal is to complete a year-long project on nature-based education to give children, ages 3 to 4, enrolled in an independent-not for profit, community-based day care center, structured and unstructured opportunities for outdoor nature experiences. These nature experiences will be implemented in local places: schoolyard, courtyard, forest, and field to educate young children. The opportunities provided by these outside environments enable children to immerse themselves in their local, natural surroundings, through hands-on experiences. Children construct knowledge when they have direct contact with objects and are able to manipulate these objects (Gonzalez-Mena, 2008). For example teaching young children about trees indigenous to the Northeast as opposed to palm trees would give them a more meaningful experience because they will have the opportunity to go outside and have hands-on experience with the trees studied.

My project consists of 16 learning experiences designed for preschool children, ages 3 to 4, aligned with the four seasons of the Northeast (fall, winter, spring, summer). Each season will have one lesson thematically linked to each of the following local, natural phenomenon: nature-based art, insects, trees, and using your senses. These topics were chosen based upon the interests and most applicable to the children and their needs to immerse them in nature. These lessons will require the children to go outside and engage in activities that are developmentally appropriate. My intent is for young children to continue to learn and have developmental gains while learning outside in nature as an extension of their learning inside in the classroom.

I am interested in this topic because my place of employment requires that children are outside every day for at least 20 minutes unless there is inclement weather. Also, I have numerous, unforgettable memories from spending time outside during my childhood. I want to utilize this time required outside as an additional classroom where children are learning to give them unforgettable memories like those I have from time spent outdoors. My project will require children to be outside for more than 20 minutes every day; however, that will be another benefit for the children since research shows the benefits of time spent outdoors.

Most of my memories from my childhood consist of me playing outdoors with my older brother and older sister or of me playing with the various pets I had. My siblings and I used to go for walks out in the woods behind my house and play on the dirt trails. There was also a small stream, which ran from the top of the hill in the woods to the bottom. I remember very vividly the time that my brother and I spent creating a dam with that small stream. It took us about a week to create because we had to rebuild it several times from it not being stable enough to hold the water. During this process we learned that a pipe was needed in the dam to allow water to flow through so that it did not all build up and then bust through the dam wall. We were

so proud when we returned the following day, after putting the pipe in the dam wall, that the dam had not broken. We had successfully created a dam that we continued to play in and build ramps to drive over with our bicycle.

I would like the children in my care to have equally memorable experiences with the places and things around them. Therefore, the purpose of this project is to design a year-long, nature education curriculum for preschool children, ages 3 to 4, which immerses the children into nature using experiences that are concrete and most applicable.

Literature Review

Young children are active and need to have space to move around to practice their developing motor skills. Allowing children to engage in play, indoors or outdoors, either on the playground, engaging in games such as tag, or outdoors in nature provides opportunities for them to develop their emerging motor skills. However, opportunities for them to engage in play indoors, outdoors, or in nature have decreased in the past few decades. This decrease in play, especially in nature play, has created a movement to reconnect children with nature. Providing young children the opportunities to engage in play allows them to reach optimal development.

Play

In the field of early childhood, play has been recognized as an important framework for learning and development in children (Gonzalez-Mena, 2008; Little & Wyver, 2008). Play gives children opportunities to, “develop physical competence and enjoyment of the outdoors, ... interact with others, express and control emotions, develop their symbolic and problem-solving abilities, and practice emerging skills” (Copple & Bredekamp, 2009, p. 14). Research shows that play also gives children an opportunity to understand and make sense of their world (Copple & Bredekamp, 2009; Gonzalez-Mena, 2008; Little & Wyver, 2008; Nicolopoulou, 2010). Little and Wyver (2008) state, “Through their interactions with the environment during play, children gain control and ultimately mastery over their bodies with the development of a range of manipulative and motor skills.... Play is a significant aspect of their [children’s] lives, reflecting their social and cultural contexts” (p. 33).

There are various kinds of play that children engage in such as: physical play, object play, pretend or dramatic play, constructive play, rough-and-tumble play, and games with rules (Copple & Bredekamp, 2009). Each one of these kinds of play offers different potential benefits

for children by allowing them to “engage in many important tasks, such as developing and practicing newly acquired skills, using language, taking turns, making friends, and regulating emotions and behavior according to the demands of the situation” (Copple & Bredekamp, 2009, p. 328). Even though learning and development occurs during play, play is still being displaced, in early childhood classrooms (Nicolopoulou, 2010).

Decrease in play. This shift of play is due to an emphasis on teaching academic skills through direct instruction. A teacher’s main role in direct instruction is to teach specific subject matter or formal lessons to the students (Gonzalez-Mena, 2008). Teaching, by means of direct instruction, has increased due to the increased dependence on high-stakes standardized tests at younger ages (Nicolopoulou, 2010). It is believed that direct instruction allows for more material to be covered over a shorter span of time, which would better prepare students for high-stakes standardized tests. According to Nicolopoulou (2010), “This emphasis on more didactic, academic, and content-based approaches to preschool education comes at the expense of more child-centered, play-oriented, and constructivist approaches, which are dismissed as obsolete or simply crowded out” (p. 1).

Child-centered learning. The child-centered, play-oriented, and constructivist approaches to teaching, that are replaced with direct instruction, contain the important element of *child-centered learning*. Child-centered learning is “a teaching-learning process in which the child learns from interacting with the environment, other children, and adults” (Gonzalez-Mena, 2008). This type of learning contrasts with the direct instruction method where the teacher’s main role is to teach specific subject matter through formal lessons.

Research shows that a certain amount of child-centered learning is necessary and developmentally valuable (Nicolopoulou, 2010). This does not imply that there are only certain

times that children are allowed to engage in child-centered learning or that time is exclusively devoted to child-centered learning. It implies, that preschools that implement these approaches to teaching, offer guidance and structure by adults to scaffold the children's learning during their times of child-directed learning (Gonzalez-Mena, 2008; Nicolopoulou, 2010).

According to Copple and Bredekamp (2009), scaffolding is a kind of support "where the teacher (or a more competent peer) helps only just enough and until the child succeeds" (p. 138). Scaffolding is an essential role of the teacher "in ensuring that play meets its potential for children" (Copple & Bredekamp, 2008, p. 47). Thus, children are consistently engaged in child-directed free play, except when an adult intervenes and scaffolds their learning and development. However, this does not smother the children's own engagement and initiative (Nicolopoulou, 2010).

Importance of early years. It is known that the preschool years are considered critical in laying the foundation upon which later learning and development must build (Gonzalez-Mena, 2008; Nicolopoulou, 2010). If the foundation of children's development does not consist of developmentally appropriate experiences, then the foundation will not be well-made. The result will be a child who has difficulty reaching optimal development. However, if the foundation of children's development consists of developmentally appropriate experiences, then the foundation will be sturdy and able to withstand building to continue. The result will be a child who easily reaches optimal development (Gonzalez-Mena, 2008).

It is also known that young children learn by exploring, manipulating objects, using their imagination, and engaging in play (Nicolopoulou, 2010). Providing these experiences to young children allows them to reach optimal development because they are considered developmentally appropriate. This type of exploratory play should command the central role in preschool

education, instead of direct instruction. According to Nicolopoulou (2010), “Given what we know about the importance of play for young children’s intellectual, socioemotional, and physical development, suppressing it can have genuinely harmful effects” (p. 2). One means of providing developmentally appropriate experiences is by allowing children to engage in outdoor play.

Outdoor Play

“Moving is a central aspect of young children’s lives and learning that impacts on all facets of their development” (Little & Wyver, 2008, p. 35). Young children are extremely physical creatures who enjoy constantly moving, running, and jumping. They are happy when they are given opportunities for dancing, creative movement, physical dramatic play, and playing outdoors, where they can move without constraint (Copple & Bredekamp, 2009). Little and Wyver (2008) state, “The outdoors presents obvious opportunities to move and be active, and for children to discover and engage with the natural environment, as well as the chance for open-ended activities such as sand and water play, construction and pretend play” (p. 35). Greenfield (2004) states that outdoor play provides, “rich opportunities for learning, problem-solving and developing social competence” (p. 1). The space afforded outdoors allows for children to learn and gain competence in a vast range of motor skills (Little & Wyver, 2008). Gaining competence in motor skills is particularly important in the early childhood years since this is “a period hallmarked by significant development across all domains” (Little & Wyver, 2008, p. 35).

Despite the wealth of research indicating the benefits of interacting with the natural environment, outdoor play appears to be diminishing (Louv, 2011; Mainella, Agate, & Clark, 2011). Louv (2005) mentions lack of time, television, computers, and parental fears as barriers to going outside. Children’s opportunities for outdoor play have been impacted due to the ever

evolving world. Social and environmental factors now confine children to relatively safe places, such as their backyards, for play (Little & Wyver, 2008). However, even opportunities for play in backyards are changing.

Fears. Today's children have been labeled the "bubble-wrap generation," because they are brought up by over-protective parents who isolate their children from experiencing the everyday risks of life (Malone, 2007; Flett, Moore, Pfeiffer, Belonga, & Navarre, 2010). Malone (2007) states "By bubble-wrapping their children, many parents are failing to allow children the opportunities to build the resilience and skills critical to be competent and independent environmental users" (p. 514). This results in children not being able to cope with those dangers, that their parents are protecting them from, at a later age (Malone, 2007; Maller, 2009).

Sweatman and Warner (2009) extend this thesis, stating:

It is in the early years that children gain the experiences that either reinforce and build on their inherent interest and attraction for the natural world, or begin to isolate them from it and associate nature with anxiety and discomfort. (p. 5)

According to Little and Wyver (2008), "Decreased outdoor play experiences have been attributed to parental fears for their children's safety" (p. 34). Therefore, if parents are preventing their children from going outside and playing, in the woods behind the house, the creek running next to the house, or the playground around the block, because of fears they themselves bear, it will result in them instilling their children with those same fears. Instilling these fears in children will deprive them of important experiences they could gain from being outside.

One of these important experiences includes building resilience (Malone, 2007). Malone (2007) states, "We know that resilience is built through the ability of an individual to adjust and

adapt in the face of a crisis situation” (p. 523). If children are deprived of engaging in everyday risks of life, then they will lack competence in assessing environmental hazards if they are ever faced with such a situation (Malone, 2007). Climbing on playground equipment affords several situations where children can be faced with risks.

Children are born ready to learn and with a natural curiosity to explore (McHenry & Buerk, 2008). “Children’s curiosity about the natural world, their ‘inborn sense of wonder,’ is a powerful catalyst for their work and play. With this curiosity and the need to make sense of the world, children are motivated to ask questions, explore how things work, and look closely at the natural world around them” (Chalufour & Worth, 2003). This natural curiosity is hindered when parents try to overprotect their children from the everyday risks of life.

Risky play. “Outdoor play provides open-ended, dynamic, varied opportunities which are unpredictable and at times risky (Greenfield, 2004, p. 1). Having children avoid risk taking behaviors is predominant in today’s society; however, without risk taking, children are not able to reach their full potential (Greenfield, 2004). When children engage in risk taking behaviors, particularly outdoors, rich opportunities for learning, problem-solving, and developing social competence are provided for children (Greenfield, 2004). Risky play is defined as activities that usually involve high levels of physical activity, with a possibility of a physical injury occurring (Little & Wyver, 2008).

In a study conducted in two Norwegian preschools, one traditional preschool and one nature and outdoor preschool, by Sandseter (2009), observations and video recordings were collected on 29 four and five year old children (21 girls and 8 boys), to examine the features of the play environment and to identify the situations of risky play children engage in. The traditional preschool had a fenced in, fixed playground with swings, a climbing tower, switch

backs, and several climbing trees. The nature and outdoor preschool was situated in a forest and did not have a fixed playground or surrounding fence. This preschool had varied areas to play where children could climb trees, climb small rocky walls, climb big rocks, run on natural hills, and slopes in the terrain. There was also a small pond, located 50 m from the preschool, and a fire pit nearby. Results of the study showed that play at great heights and with high speed, such as climbing, jumping down, sliding, swinging, skiing, running, and bicycling, were the most common actualized risky play in both preschools. Rough-and-tumble play was also expressed as quite a common thrilling type of play among the children in both preschools. These results indicate that children will seek out risky forms of play in whichever play environment.

Nature Play

The natural world offers concrete and authentic learning experiences as young children grow and develop. Therefore, an essential part of early childhood education is nature education (Bailie, 2010; Russo, Colurciello, & Kelly, 2008). Discovering the wonders of nature allows young children to, “develop a reverence for life that cannot be fostered as profoundly in any other way” (Rosenow, 2008, p. 10). As a young child, learning about nature in books or watching videos is not as compelling as having an actual lady bug crawl on your hand or watching a butterfly emerge from its chrysalis (Rosenow, 2008). These firsthand learning experiences are crucial in supporting children’s nature explorations (Russo et al., 2008). Allowing children to care for plants and animals gives them an opportunity to practice nurturing behaviors that will enable them to interact with other children in a kind and gentle manner (Rosenow, 2008).

Nature comes in various forms for children; a path through the woods, ants crawling on the sidewalk, or a tree in the front yard. Children who live in suburban areas have more

opportunities to access nature, in contrast to, children who live in urban areas (Hachey & Butler, 2009). No matter what form nature comes in, children are offered a different world separate from their parents (Louv, 2005). However, it is particularly important that children who live in urban areas are provided with more opportunities to access nature due to their limited opportunities of finding nature outside. Louv, 2005 states, “Unlike television, nature does not steal time; it amplifies it” (p. 7). Nature can offer healing for a child in a destructive family, a blank slate to draw and reinterpret the culture’s fantasies, and inspiration of creativity by demanding full use of the senses and visualization (Louv, 2005). Children foster a value for all living things and facilitate a connection to the natural world (Benson & Miller, 2008; Nimmo & Hallett, 2008). “As one scientist puts it, we can now assume that just as children need good nutrition and adequate sleep, they may very well need contact with nature” (Louv, 2005, p. 3). As the aforementioned quote illustrates, contact with nature is one of a number of elements missing in a child’s life that lives in a destructive home.

Decline in nature play. Several studies argue that most children have limited experience with the outdoors (Charles, 2009; Larson et al., 2011; Russo et al., 2008). According to Charles (2009), “If they [children] are outdoors, the experience is more likely to be in organized and sports and on playground equipment, often on asphalt playgrounds” (p. 467). Most of children’s experiences today are indoors, either at home or in school, or in a vehicle where they are being shuttled from school to basketball, to dance class, to the grocery store, and many other activities during their free time (Charles, 2009; Mainella et al., 2011).

Limited experience with the outdoors has resulted in children becoming disconnected from nature in their everyday lives. This disconnection from nature has occurred primarily in the past two to three decades, with an escalation in the past ten years (Bailie, 2010; Charles, 2009).

Richard Louv, author of *Last Child in the Woods*, developed the theory of nature-deficit disorder to explain the disconnect that children of this generation have from the natural world. The theory of nature-deficit disorder is not a medical diagnosis, but a description of the human costs of alienation from nature (Louv, 2005). Louv (2005) states, “Parents, educators, other adults, institutions - the culture itself - may say one thing to children about nature’s gifts, but so many of our actions and messages - especially the ones we cannot hear ourselves deliver - are different. And children hear very well” (p. 14).

Growing movement to reconnect children and nature. The disconnection that children have from nature has created a movement to reconnect children and nature. Natural outdoor environments have the potential to provide educational opportunities. According to Sweatman and Warner (2009), “Natural settings provide an ideal classroom, full of teachable moments, creative play opportunities, real life experiences, and awe inspiring moments for young children” (p. 4).

Children can be successful in all areas of development if given an outdoor space where they can foster a sense of wonder about nature (Rosenow, 2008). Many meaningful things happen all at once when children are exploring the natural environment (Ramey, 2010). Therefore, one moment can easily include aspects of social-emotional, physical, and cognitive development (Benson & Miller, 2008; McHenry & Buerk, 2008).

Reaching developmental domains. Early childhood educators “recognize the potential of the outdoors as a classroom extension and time outdoors as an opportunity to promote children’s development” (Pica, 2011, p. 58). Activities focused on nature support learning in all developmental domains, such as: social-emotional (Benson & Miller, 2008; Larimore, 2011),

physical (Bailie, 2010; Fjørtoft, 2001; Benson & Miller, 2008; Larimore, 2011), and cognitive (Bailie, 2010; Benson & Miller, 2008; Larimore, 2011).

Social-emotional development. Nature supports children's social-emotional development by providing opportunities for them to interact, discover, create, and problem solve with their peers while engaging in nature activities (Hachey & Butler, 2009). These engagement opportunities allow children to naturally build on their current social skills (Benson & Miller, 2008; Larimore, 2011). Through nature-based interactions with peers and adults, children also develop language skills by learning rare words and creating vocabulary to express their experiences in nature (Benson & Miller, 2008; Starbuck & Olthof, 2008). Children are able to associate words with concrete objects when given real objects in nature to manipulate. By building vocabulary from concrete experiences, the new vocabulary is more meaningful to the children and they are more likely to use them correctly in the future (McHenry & Buerk, 2008).

Giving children opportunities to grow and care for plants and flowers allows them to build self-confidence (Hachey & Butler, 2009). Children can be extremely successful with nurturing plants and flowers due to the easiest of the task. This, in return, allows children to build a positive scientific attitude towards the natural world. The children will also be able to build self-esteem and self-efficacy through the nurturing of plants and flowers (Hachey & Butler, 2009).

Nature-based play encourages children to build authentic relationships with their peers through collaboration (Nimmo & Hallett, 2008). Children that are more capable at specific tasks will be able to share their knowledge, use their negotiation skills, and encourage the inclusion of the other children. Children who find the typical classroom challenging, because of ability or language, may find a niche outside in nature as an expert (Nimmo & Hallett, 2008).

Physical development. A major part of outdoor exploration is physical movement (Benson & Miller, 2008). The specific task of gardening supports children's physical development by providing them with tools to dig holes, manipulate seeds, watering plants, pulling weeds, and cutting flowers (Starbuck & Olthof, 2008). Nature also supports children's physical development by providing natural landscapes that lead to physical challenges (Fjørtoft & Sageie, 2000). Children are able to develop physically by: hiking in natural uneven terrain such as: forests, nature preserves, fields, and parks; climbing hills and trees; walking on logs; running after a butterfly, or ducking under tree branches (Bailie, 2010; Benson & Miller, 2008; Larimore, 2011). All of these physical activities provide varied opportunities for children to develop balance, coordination, spatial awareness, agility, and muscle strength (Larimore, 2011; Benson & Miller, 2008).

Fjørtoft (2001) found the following:

Natural environments represent dynamic and rough playscapes that challenge motor activity in children. The topography, like slopes and rocks, afford natural obstacles that children have to cope with. The vegetation provides shelters and trees for climbing. The meadows are for running and tumbling. (p. 111)

In his study, Fjørtoft (2001) found that "The motor fitness tests showed a general tendency that the children using the forest as a playscape performed better in motor skills than the children on the traditional playground" (p. 115).

Cognitive development. Nature supports children's cognitive development by providing opportunities to challenge their existing knowledge, understanding, and theories about the world (Benson & Miller, 2008, Larimore, 2011). Through the exploration of natural materials and environments, children use observation skills to ask questions about things, hypothesize what

will happen, test their hypothesis, and then gain knowledge and understanding about the results (Bailie, 2010; Hachey & Butler, 2009). Children use this knowledge to create theories about their surroundings and to adapt these theories during their experiences in new situations (Benson & Miller, 2008). As children think about how to climb a tree, problem solving strategies begin to form; the child has to determine the best strategy by trying different ways and making numerous attempts in order to be successful (Benson & Miller, 2008).

The constantly changing weather and changing of seasons allows for life cycles of varied plants and animals to be studied outdoors (Benson & Miller, 2008; Satterlee & Cormons, 2008). Children can learn important science and math concepts by engaging in conversations with adults about the changes in weather. Children can learn concepts such as: cycles, patterns, sorting, sequencing, spatial relationships, and making predictions (Willimas, 2008; Starbuck & Olthof, 2008). Children can further develop the ability to sort and classify things in nature, such as birds, by learning to observe the world around them (Larimore, 2011).

Method

This curriculum project is designed to give children, ages 3 to 4, enrolled in an independent-not for profit, community-based day care center, structured and unstructured opportunities for outdoor experiences by implementing nature-based activities into their curriculum. The learning experiences in this curriculum project will require the children to go outside and engage in activities that are developmentally appropriate. This will empower young children to continue to learn and have developmental gains while engaging outside in nature as an extension of their learning inside in the classroom.

Setting

This curriculum project was implemented in the 3 year old preschool classroom at the Chautauqua Lake Child Care Center in Mayville, NY. This center has several opportunities for children to engage in nature play. Located behind the building is a forest that has dirt paths running through it, located next to the building is a playground, located in front of the building is terrain that has slopes and hills, located in the center of the building is an area called “The Courtyard.” The courtyard is an area that children can ride bikes, play in a sandbox, and have access to trees and flowers.

The Chautauqua Lake Child Care Center has 62 total students enrolled in the center, with ages ranging from 6 weeks to 5 years. There is an infant room (6 weeks to 18 months), toddler room (18 months to 3 years), and two preschool classrooms (one 3 year old room and one 4 year old room). All of the children (6 weeks to 5 years) who are enrolled in the center are of White ethnic origin; except two students, who are of African American ethnic origin.

The Chautauqua Lake Child Care Center is located in Chautauqua County, which is a rural district, inside the Chautauqua Lake Central School District; however, it is not formally

affiliated with the governing structure or funding of the school district. The population of Chautauqua County for 2012 was 134,793. Of that population, 24,229 individuals live in poverty; 20,516 are White, 3,850 are Hispanics/Latinos, and 768 are African Americans. The population of adults, 25+, with at least a Bachelor's Degree is 18, 998. A total of 50% of the children in the county are eligible for the free or reduced lunch program

Participants

The population of interest is children, ages 3 to 4, enrolled in an independent-not for profit, community-based day care center. Fifteen children from the center were chosen as focus participants (nine females and six males), with all of them, except one female, being Caucasian. Some of the children are enrolled full-time and some of the children are enrolled part-time. If the children are enrolled full-time, they attend the day care center every business day, Monday through Friday. There are 12 children who are enrolled full-time in the classroom. If the children are enrolled part-time, they attend anywhere from one day a week to four days a week. There are three children who are enrolled part-time in the classroom. The period of time each child attends the day care center each day, varies by individual child. The longest period of time a child can attend the day care center is from 7:00 a.m. to 6:00 p.m.

Design

This curriculum project consists of 16 learning experiences aligned with the four seasons of the Northeast (fall, winter, spring, and summer). Each season has one lesson thematically linked to each of the following local, natural phenomenon: nature-based art, insects, trees, and using your senses. These topics were chosen based upon being the most applicable to the children, their interests, and their needs to immerse them in nature. Each lesson requires that children engage in outdoor nature activities that are developmentally appropriate.

These lessons will be based upon each individual child's developing motor skills. Therefore, these lessons will assist children with their emerging physical skills, social-emotional skills, and cognitive skills. These lessons will consist of individual, small group, and large group activities where children will be able to manipulate and have hands-on experience with objects in nature.

The New York State Early Learning Guidelines were used to implement these 16 lessons for the children in the center. The guidelines that each lesson will focus on will be found on each lesson plan created. Each lesson plan will state: title, materials needed, objectives to be met, the procedure of how the lesson should be implemented, alignment to New York State standards, possible extension activities to further learning, and any assessments that should be done during the lesson.

Limitations

Some limitations should be acknowledged impacting this curriculum project. First, this project is intended for use in New York State. Hence, the lessons may not be applicable for other states due to the difference in standards and curriculum goals. Furthermore, climate and weather conditions of other areas may not allow for the lessons to be implemented in the same sequence or area that is suggested in this curriculum project. However, these lessons may be adjusted to fit in to other states standards, curriculum goals, and region. Another limitation is that this project is intended for use with preschool children ages 3 to 4. Hence, the lessons may not be suitable for younger children or older children based upon their educational needs. However, these lessons may be differentiated to meet the educational needs of younger children and older children as well as more or less developmentally advanced children. Despite these limitations, this curriculum project can provide a foundation which educators can build upon to decrease the disconnection children currently have with nature.

Results

This curriculum project was designed around immersing young children in nature-based learning experiences based upon their interests and the applicability of the experiences. Provided here are the lesson plans which state: title, materials needed, objectives to be met, the procedure of how the lesson should be implemented, alignment to New York State standards, possible extension activities to further learning, and any assessments that should be done during the lessons.

The following lesson plans are a framework of the learning experiences I would include in my annual curriculum. These learning experiences can be amended and adapted to meet the needs of the individual children in the classroom. Each lesson plan provides extension activities for additional experiences to extend learning for children as needed. Along with the conversations that are already mentioned in each lesson plan, an abundance of additional discussions should be incorporated into the learning experiences.

Fall

Nature-based Art

Title: Pinecones, Pine needles, & Acorns

Student Learning Objectives:

Students will be able to:

- Manipulate a variety of natural materials (feel, smell, hear, look)
- Describe the natural materials using adjectives (smooth, prickly, brown, small, oval, stinky, etc.)
- Use the natural materials to paint with in multiple ways (rolling, wiping, tapping, etc.)

Alignment to Standards:

New York State: Early Learning Guidelines

Domain I: Physical Well-Being, Health, and Motor Development

- A. Gross Motor Skills
- B. Fine Motor Skills
- C. Sensorimotor Skills
- I. Safe Practices
- J. Rules and Self-Regulation

Domain II: Social and Emotional Development

- B. Interactions with Adults: Children seek assistance from adults
- C. Interactions with Peers
- D. Interactions with Peers: Cooperation
- E. Interaction with Peers: Negotiation
- G. Adaptive Social Behavior: Group Activities
- J. Appreciating Diversity
- L. Self-Concept: Abilities and Preferences
- M. Self-Efficacy
- N. Self-Control
- O. Self-Control: Feelings and Impulses

Domain III: Approaches to Learning

- A. Curiosity and Interest

- B. Initiative
- C. Persistence and Attentiveness
- D. Creativity and Inventiveness
- E. Reflection and Interpretation

Domain IV: Cognition and General Knowledge

- A. Causation: Children demonstrate awareness of cause of effect
- B. Critical and Analytic Thinking: Children compare, contrast, examine, and evaluate experiences, tasks, and events
- C. Critical and Analytic Thinking: Children use past knowledge to build new knowledge
- D. Problem-Solving: Children find multiple solutions to questions, tasks, problems, and challenges
- H. Measurement: Children demonstrate knowledge of size, volume, height, weight, and length
- K. Scientific Thinking: Children collect information through observation and manipulation
- L. Scientific Thinking: Children engage in exploring the natural world by manipulating objects, asking questions, making predictions, and developing generalizations
- M. Scientific Knowledge: Children observe and describe characteristics of living things
- P. Geography: Children demonstrate awareness of location and spatial relationships
- Y. Expression and Representation: Children use creative arts to express and represent what they know, think, believe, or feel
- Z. Understanding and Appreciation: Children demonstrate understanding and appreciation of the creative arts

Domain V: Language, Communication, and Literacy

- B. Receptive Vocabulary
- C. Expressive Vocabulary
- D. Grammar and Syntax

- E. Comprehension
- F. Expressive/ Oral Language
- G. Listening Skills
- H. Oral and Written Communication
- I. Conventions of Social Communication

Materials:

- Pine needle bundles
- Pinecones of different sizes
- Acorns
- Paint
- Flat containers (to put the paint in)
- Large roll of paper

Procedure:

For this activity, the children will be taken on a nature walk to a forest where we can find pinecones, pine needles, and acorns to paint with. If you do not have an area to do this, find these items in the surrounding neighborhood and bring them to an outdoor area.

- 1) Tell the children that you are going for a nature walk into the forest to find some items to paint with. You can have the children guess what items they could find in a forest. Or you could tell them specifically what items you want them to use.
- 2) Gather all your materials needed.
- 3) Take the children on a nature walk to a forest where the children can search the area for pinecones, pine needles, and acorns to paint with.
- 4) Once you found an appropriate place, have the children go search for items they could paint with and bring them back to the spot to paint.
- 5) While the children are searching for items to paint with, roll out the paper so the children have a long strip to paint on. You can create multiple strips to give the children more room if needed. Use logs or rocks to hold the paper in place on the ground.
- 6) Set out the containers of paint nearby so the children will be able to dip their painting tools (pinecones, pine needles, and acorns) in them.
- 7) Help children find items to paint with if needed.

- 8) Once the children start coming back with items, have them sit down and feel, smell, touch, and look at their items.
 - a. Take photographs while the children are manipulating the objects in their hands.
- 9) Have a discussion with the children about how the items feel, smell, touch, and look (approximately 5 minutes)
 - a. Remind them to be careful because some of them might be *sharp*, *pointy*, or *sticky*.
 - b. Give them the vocabulary (adjectives) they need to help them describe the items they are manipulating in their hands.
 - c. Take anecdotal notes of the vocabulary the children are using.
- 10) Once the children have been able to manipulate their items, let them dip them into the paint and start painting with them on the paper. Encourage them to share items and exchange items with their peers.
 - a. “Ask Kevin, “Could I use that pinecone when you are done with it please?””
 - b. “Kimberly, say to Deanna, “Do you want to paint with this acorn so I can paint with your pine needles?””
- 11) Do not give the children directions on how to dip their items in the paint, how to paint with each item, or how much paint to use. Let the children manipulate the items themselves and investigate how to use the items themselves.
- 12) While children are painting, walk around and take photos of how the children are using the items. Also take anecdotal notes of the language and manipulations of items the children are using during this activity.
- 13) Give children sufficient time to manipulate the items by themselves (approximately 10-15 minutes) before scaffolding them on how they could use the items differently.
 - a. “I see that when you slide the bundle of pine needles back and forth it makes lines on the paper. What would happen if you tap/swirl/roll the pine needles on the paper?”
- 14) Continue to let the children paint until you need to return to the classroom or until their interest fades.

Extensions:

- Have the children go search for other items in nature to paint with (rocks, twigs, leaves, etc.).
- Use the items found in nature to paint patterns onto the paper.
- Compare sizes (small, medium, large) of each item.
- Hold up an item found in nature, have the children go find something in nature that is bigger/smaller/the same size as that item. Allow them to bring their item up to your item to compare. Give children two or three chances to match their item. Then go help them if needed.
- Have the children gather several bundles of pine needles and discuss the effect that many pine needles have on the painting.
- Find a slope or hill outside and have the children roll pinecones, pine needles, rocks, acorns, etc. down the paper.
 - Discuss the difference/characteristics in items that roll vs. items that don't roll.

Assessment:

Observation & Anecdotal Notes: Observe the children outside and take notes as they manipulate their items, write down the vocabulary they are using to describe these items found in nature. Take notes on any other skills or developments you deem necessary for each individual child, especially when they are painting with any of the nature items they collected. Also, write down specific quotes that the children used outside while collecting and painting with the nature items.

Photographs: Take photographs while the children are manipulating the items they found in nature. Also, take photographs while the children are painting with each of the nature items. These photographs will allow you to go back through and look how the children used and manipulated the items that they found that you may have missed in the anecdotal notes. The photographs are a great visual to display in the classroom for parents and others to view the learning that is going on outside in nature. You may even see new skills or developments that you didn't notice before when you look through the photographs more than once.

Fall

Insects

Title: Monarch Butterfly

Student Learning Objectives:

Students will be able to:

- Use new vocabulary words to describe the life cycle of a Monarch Butterfly (egg, metamorphosis, caterpillar, larva, pupa, adult, antennae, insect, wings, etc.)
- Use observations to recognize the different stages of a Monarch Butterfly

Alignment to Standards:

New York State: Early Learning Guidelines

Domain I: Physical Well-Being, Health, and Motor Development

I. Safe Practices

J. Rules and Self-Regulation

Domain II: Social and Emotional development

B. Interactions with Adults: Children Seek Assistance from Adults

C. Interactions with Peers

D. Interaction with Peers: Cooperation

E. Interaction with Peers: Negotiation

F. Adaptive Social Behavior

H. Adaptive Social Behavior: Diverse Settings

I. Adaptive Social Behavior: Empathy

K. Self-Concept

N. Self-Control

O. Self-Control: Feelings and Impulses

Domain III: Approaches to Learning

A. Curiosity and Interest

B. Initiative

C. Persistence and Attentiveness

D. Creativity and Inventiveness

E. Reflection and Interpretation

Domain IV: Cognition and General Knowledge

- A. Causation: Children demonstrate awareness of cause and effect
- B. Critical and Analytic Thinking: Children compare, contrast, examine, and evaluate experiences, tasks, and events
- C. Critical and Analytic Thinking: Children use past knowledge to build new knowledge
- K. Scientific Thinking: Children collect information through observation and manipulation
- L. Scientific Thinking: Children engage in exploring the natural world by manipulating objects, asking questions, making predictions, and developing generalizations
- M. Scientific Knowledge: Children observe and describe characteristics of living things
- O. History: Children demonstrate knowledge of past events and awareness of how they may influence the present and future
- P. Geography: Children demonstrate knowledge of the relationship between people, places, and regions
- S. Ecology: Children demonstrate awareness of the relationship between humans and the environment
- W. Community: Children demonstrate civic responsibility

Domain V: Language, Communication, and Literacy

- B. Receptive Vocabulary
- C. Expressive Vocabulary
- D. Grammar and Syntax
- E. Comprehension
- F. Expressive/Oral Language
- G. Listening Skills
- H. Oral and Written Communication
- I. Conventions of Social Communication

Materials:

- Monarch butterfly eggs (found on the underside of leaves in a meadow)
- Butterfly pavilion habitat

- Milkweed
- Twigs
- Magnifying glass
- KWL chart
- Marker

Procedure:

This activity could last 2-4 weeks depending on the stage of your Monarch butterfly. Leave your Monarchs in a place that the children will be able to view them with magnifying glasses whenever they choose to.

- 1) Tape up the KWL chart to be filled out.
- 2) Gather the children together at the meeting area to have a discussion about butterflies.
- 3) Ask the children what they know about butterflies.
- 4) Write their responses in the K (what we know) section of the chart.
 - a. Encourage them to describe where butterflies live, what they look like, what they eat, how they move, etc.
- 5) Then tell the children that they are going to be able to watch real butterflies grow and change (metamorphosis).
- 6) Ask the children what questions they have or what they want to know about butterflies.
- 7) Write their responses in the W (what we want to know) section of the chart.
 - a. Use these responses to plan activities for the children in the following weeks.
- 8) Put the eggs or caterpillars in the butterfly pavilion for the children to observe.
 - a. Allow the children to use a magnifying glass to observe
 - b. Take photographs of the children observing and investigating
 - c. Take anecdotal notes of the vocabulary, language, skills, concepts, etc. that the children are using during these times of observation
- 9) Record their responses on an anecdotal note.
- 10) Observe the monarch butterfly daily to look for changes that have happened.
 - a. Have discussions about the changes, make predictions about what will happen next, etc.
- 11) Continue to take pictures and anecdotal notes of the children's discussions.

- 12) Continue to add to the W (what we want to know) section of the chart as the children learn about the Monarch Butterfly and have questions.
 - a. Address the children's responses in the discussions you have
- 13) Fill out the L (what we learned) section on the chart as the children are learning about the Monarch.
- 14) Discuss with the children that inside the egg, a caterpillar is growing.
 - a. When the caterpillar emerges from the egg, they will continue to watch the caterpillar.
 - b. They will have to take care of the caterpillar and make sure he has food to eat.
- 15) In the second stage (larva):
 - a. Allow the children to put milk weed leaves and twigs in the pavilion for the caterpillar to eat.
 - b. Have discussions about the observations the children make.
 - i. "Why does the caterpillar have so many legs?"
 - ii. "Why is he yellow, black, and white?"
 - c. Continue to make predictions about the caterpillar
 - i. "How many leaves do you think he can eat?"
 - ii. How many legs do you think the caterpillar has?"
- 16) Continue to add to the W (what we want to know) section and the L (what we learned) section of the KWL chart.
 - a. Address the children's responses in the discussions you have
- 17) In the third stage (pupa):
 - a. Continue to have discussions about the observations the children make.
 - i. The color of the chrysalis, what is happening inside the chrysalis (metamorphosis), what will come out of the chrysalis, etc.
- 18) Continue to add to the W (what we want to know) section and the L (what we learned) section of the KWL chart.
 - a. Address the children's responses in the discussions you have
- 19) In the fourth stage (adult):
 - a. Continue to have discussions about the observations the children make.

- i. Make sure to have a discussion about letting the butterfly go and why you should let it go.

20) Fill in the L (what we learned) section of the chart once you let the butterfly go.

- a. There should be an abundance of information the children learned about the Monarch butterfly over this extended period of time.

Extension:

- Paint symmetrical butterflies by dropping dabs of paint onto one half of a piece of paper. Then fold the paper in half and unfold it.
- Make footprint butterflies by painting the children's feet. Then use their thumb to make their body. Have the children draw on the butterflies antennae when they are dry.

Assessment:

Photographs: Take photographs while the children are using the magnifying glasses to investigate and explore the Monarch Butterfly. The photographs will allow you to capture all the investigations that the children are doing to learn about the butterfly. The different stages of the butterfly will be easier to discuss when you have photographs of the actual butterfly and children to use as a topic of discussion. You will also be able to see if the children are holding the magnifying glass in the proper position to see the stages of the Monarch butterfly.

Anecdotal Notes: Take notes on the discussions the children have about the butterfly; especially if they are discussing characteristics of the stages that they are observing. Remember to take notes on vocabulary, language, and describing words the children are using. Also, take note on if each individual child is able to identify the different stages of the Monarch Butterfly. These anecdotal notes will allow you to assess what information each child is learning about Monarch Butterfly and will inform you if any of the children need more experiences with the butterfly.

Fall

Trees

Title: Tree Journal

Student Learning Objectives:

Students will be able to:

- Identify at least 3 parts of a tree (trunk, branch, leaves)
- Construct (draw) at least 3 parts of a tree (trunk, branch, leaves)
- Predict what the tree will look like/happen next season (winter)

Alignment to Standards:

New York State: Early Learning Guidelines

Domain I: Physical Well-Being, Health, and Motor Development

- B. Fine Motor Skills
- I. Safe Practices
- J. Rules and Self-Regulation

Domain II: Social and Emotional development

- B. Interactions with Adults: Children Seek Assistance from Adults
- D. Interaction with Peers: Cooperation
- E. Interaction with Peers: Negotiation
- F. Adaptive Social Behavior
- J. Appreciating Diversity
- K. Self-Concept
- M. Self-Efficacy
- N. Self-Control
- O. Self-Control: Feelings and Impulses

Domain III: Approaches to Learning

- A. Curiosity and Interest
- C. Persistence and Attentiveness
- D. Creativity and Inventiveness
- E. Reflection and Interpretation

Domain IV: Cognition and General Knowledge

- B. Critical and Analytic Thinking: Children compare, contrast, examine, and evaluate experiences, tasks, and events
- C. Critical and Analytic Thinking: Children use past knowledge to build new knowledge
- E. Representational Thought: Children use symbols to represent objects
- G. Number and Sense Operations: Children demonstrate knowledge of numbers and counting
- H. Measurement: Children demonstrate knowledge of size, volume, height, weight, and length
- I. Properties of Ordering: Children identify and label shapes
- K. Scientific Thinking: Children collect information through observation and manipulation
- L. Scientific Thinking: Children engage in exploring the natural world by manipulating objects, asking questions, making predictions, and developing generalizations
- M. Scientific Knowledge: Children observe and describe characteristics of living things
- N. Scientific Knowledge: Children Observe and describe characteristics of the earth
- P. Geography: Children demonstrate awareness of location and spatial relationships
- Y. Expression and Representation: Children use creative arts to express and represent what they know, think, believe, or feel

Domain V: Language, Communication, and Literacy

- B. Receptive Vocabulary
- C. Expressive Vocabulary
- D. Grammar and Syntax
- E. Comprehension
- F. Expressive/Oral Language
- G. Listening Skills
- H. Oral and Written Communication

- I. Conventions of Social Communication
- J. Reading: Phonological Awareness
- K. Reading: Alphabetic Principle
- L. Reading: Print Concepts
- M. Reading: Comprehension of Printed Material
- P. Writing: Alphabet Knowledge
- Q. Writing Conventions

Materials:

- Crayons (variety of colors)
- Spiral bound notebook (each child)
- Small paper bags (to collect nature items)
- Clear tape (to tape items into their journal)

Procedure:

Note: This lesson should be implemented after several nature walks involving discussions and observations about trees. The discussions and observations should include how things look, feel, smell, sound, differences, similarities, etc. Ask the children “Why do you think that” questions, whenever possible, to engage their use of higher level thinking skills.

- 1) Pick a predetermined spot where you will be able to visit each season of the year that has trees for the children to observe.
- 2) Inside, have the children write/trace their name on the front cover of their spiral notebook. You can allow them to draw a picture on the front cover, if they choose to.
- 3) Explain to them the purpose of this notebook:
 - a. This is going to be your nature journal. Inside this journal you will be drawing and writing about a tree that we are going to go visit. We will go visit this tree several times throughout the year and talk about the changes that are happening with the tree, etc. You can tell the children that they can name the tree when they get there. Include anything in this conversation that you deem appropriate for each individual child.
- 4) Collect all materials needed in a back pack for the teacher to carry (children’s hands should be free of any objects during the nature walk so they can explore items in nature).

- 5) Take the children on a nature walk to this predetermined spot. On your walk there, stop at different trees and have discussions about things they notice (how things look, feel, smell, sound, differences, similarities, etc.) Ask, “Why do you think that” questions, whenever possible, to engage their use of higher level thinking skills.
- 6) When you arrive at your predetermined spot, have the children find a place to sit down near a tree.
- 7) Hand out the small paper bags.
- 8) Tell the children that they can collect items in nature that they find while exploring the area (leaf, pine cone, piece of bark, twig, etc.) Encourage them to find different parts/pieces of a tree.
- 9) Give children about 5 or 10 minutes to collect nature items in their paper bag.
- 10) After collecting nature items, the children should come back to their spot. They can include any of these items in their nature journal if they choose to.
- 11) Hand-out their spiral notebooks and crayons.
- 12) Explain the directions (very simple):
 - a. Have the children use their crayons to draw the tree they are sitting by.
 - b. Tell them that you would like to see the different parts of the tree that you have been discussing in their drawing.
 - c. Remind them that you have been discussing the different parts of the tree and how they feel, look, smell, sound, etc.
 - d. Let them know that they can get up to touch the tree to see how it feels, match a crayon to a specific color on the tree, pick a leaf off the tree, etc. (The leaf can be taped to their paper)
- 13) As they are drawing, walk around to the children and discuss their drawings with them. Point out the specific things that you see in their drawing.
 - a. “What is this green circle?”
 - b. “What is this long line that you drew here?”
- 14) Assist the children with making predictions about what will happen to the tree next season (winter) and why they think this will happen. Record their predictions in their journal.

- 15) Before allowing the children to put their notebook away. Encourage them to go look at the tree one more time to see if there is anything else they want to include in their drawing.
- 16) When the children are finished constructing their fall tree, allow them to go collect more nature items to put in their paper bag or just go play in the surrounding area.
- 17) The children can carry their paper bags back to the classroom to have nature items in the classroom to investigate.

Extension:

- Go on a nature walk, the following week, back to the same tree the children drew and discuss any changes that have happened. Have them collect more nature items. Did they collect anything new? Is anything new growing? Dying?
- Have children label the parts of the tree that they drew.
 - “Can you write the word *leaf* next to the leaf that you drew?”
 - Let me write the word *leaf* on your paper for you. Next time you want to write the word *leaf*, you can just turn to this page and copy it.”
- Rip out a piece of paper from their journal and show the children how to create a bark rubbing. Discuss the shapes the children see in the bark, how it feels, what colors they see, etc.
- Pick a leaf off a tree and show the children how to create a leaf rubbing. Discuss the parts of the leaf (vein, stem, point, lobe, etc.) Encourage them to draw these parts of the leaf next time.
- Paint with leaves
- Paint with items from their paper bag

Assessment:

Observation & Anecdotal notes: Observe the children outside and take notes on any behaviors, language skills, social skills, motor skills, etc. that you deem necessary for each individual child. Write down specific quotes that the children used outside while collecting nature items or while drawing. Try to notice new developments that the children are engaging in: new pencil grip, more complex sentences, expanded vocabulary, etc.

Make an anecdotal note on the child's drawing stating the prediction they made about what will happen to the tree. You can write it on the back of their drawing if there is no room on the front. Read each word aloud to the child as you write it.

Work Sample: The children's drawing of a tree is a concrete example of their learning at this stage of development. Use this work sample to compare to their other work samples from the winter, spring, and summer. The collection of work samples will show the learning, growth, and achievement that each individual child has had over the year.

Fall
Using Your Senses

Title: Fall Leaves

Student Learning Objectives:

Students will be able to:

- Use their senses to explore how the leaves: smell, look, feel, and sound.
- Use at least one of their senses to describe a characteristic of leaves.
- Increase proficiency in their locomotor skills (running, jumping)

Alignment to Standards:

New York State: Early Learning Guidelines

Domain I: Physical Well-Being, Health, and Motor Development

- A. Gross Motor Skills
- B. Fine Motor Skills
- C. Sensorimotor Skills
- E. Physical Fitness: Variety and Well-Being
- I. Safe Practices
- J. Rules and Self-Regulation

Domain II: Social and Emotional Development

- B. Interactions with Adults: Children seek assistance from adults
- C. Interactions with Peers
- D. Interactions with Peers: Cooperation
- E. Interaction with Peers: Negotiation
- F. Adaptive Social behavior
- G. Adaptive Social Behavior: Group Activities
- J. Appreciating Diversity
- N. Self-Control
- O. Self-Control: Feelings and Impulses

Domain III: Approaches to Learning

- A. Curiosity and Interest
- B. Initiative
- C. Persistence and Attentiveness

E. Reflection and Interpretation

Domain IV: Cognition and General Knowledge

- A. Causation: Children demonstrate awareness of cause of effect
- B. Critical and Analytic Thinking: Children compare, contrast, examine, and evaluate experiences, tasks, and events
- C. Critical and Analytic Thinking: Children use past knowledge to build new knowledge
- D. Problem-Solving: Children find multiple solutions to questions, tasks, problems, and challenges
- K. Scientific Thinking: Children collect information through observation and manipulation
- L. Scientific Thinking: Children engage in exploring the natural world by manipulating objects, asking questions, making predictions, and developing generalizations
- M. Scientific Thinking: Children observe and describe characteristics of living things
- W. Community: Children demonstrate civic responsibility

Domain V: Language, Communication, and Literacy

- B. Receptive Vocabulary
- C. Expressive Vocabulary
- D. Grammar and Syntax
- E. Comprehension
- F. Expressive/ Oral Language
- G. Listening Skills
- H. Oral and Written Communication
- I. Conventions of Social Communication

Materials:

- Leaves
- Rakes
- Buckets

Procedure:

- 1) Gather the rakes and buckets to take outside.
- 2) Let the children run and play in the leaves that have fallen to the ground (approximately 10 minutes)
 - a. Take photographs of the children as they run through the leaves.
 - b. Model how you are using your senses to describe the leaves.
 - i. “Listen. I can hear the leaves crunch when I walk on them.”
 - ii. “Look. I can see red, yellow, and green on this leaf.”
- 3) Give the children the rakes and buckets to use to rake the leaves and fill the buckets.
- 4) Encourage the children to rake the leaves into a large pile so they can jump in them.
 - a. Assist the children with making a pile of leaves for them to jump into.
 - b. Model how to use your senses to describe the leaves.
 - i. “Listen. I can hear the leaves crunching when you rake them into a pile.”
- 5) Let the children take turns running and jumping into the leaves.
 - a. Take pictures of the children running and jumping in the leaves.
 - b. Model how to use your senses to describe the leaves.
 - i. “Feel. This leaf feels rough.”
 - ii. “Feel. This leaf feels bumpy.”
- 6) Have the children use the rakes and buckets to continue to make piles of leaves to jump into.
- 7) Let the children continue to jump in the leaves (approximately 15 minutes).
 - a. Continue to model how you are using your senses to describe characteristics of the leaves.
- 8) Next, call children over individually to have them describe the leaves using their senses.
 - a. “Can you tell me one thing you learned about leaves today?”
 - b. “How do the leaves smell/feel/look/sound?”
 - i. Record the children’s responses on an anecdotal recording sheet.
- 9) Continue to let them play until you have got a chance to talk with everyone.

Extension:

- Allow the children to take their shoes off to walk through the leaves and feel them crunch under their feet.

- Have the children close their eyes and listen to the sounds they hear. Discuss what object they think made each sound.
- Use tinfoil to press on top of the leaves. Pressing the tinfoil down onto the leaf will create a 3D feel of the leaf. Discuss the parts of the leaf that you can feel on the tinfoil.
- Record handful amounts: Have children grab a handful of leaves. Then have them count them and record each amount.
- Sort the leaves by color, shape, size.
- Leaf Match: Have the children go search for a leaf that matches each leaf that you have.
- Discuss why the leaves change color and what trees have leaves that do not change color (evergreens).
- Add small rakes, baskets, and fake leaves to the dramatic play center in the classroom.
- Create leaf prints by painting leaves and pressing them onto a piece of paper.

Assessment:

Photographs: Take photographs of the children playing in the leaves (running, jumping, crawling, etc.). These photographs will allow you to capture the children using their large motor and locomotor skills. You will be able to see how proficient each individual child is with their large motor and locomotor skills. Some children will be more proficient than others. You will want to provide more challenging large motor and locomotor tasks for these individual children.

Anecdotal Notes: Record the exact sentences and comments the children say when using their senses to describe a characteristic of leaves.

Winter
Nature-based Art

Title: Painting on Snow

Student Learning Objectives:

Students will be able to:

- Demonstrate their developing fine motor skills by using different materials
- Use new vocabulary words to describe characteristics of the snow (cold, melting, wet, etc.)

Alignment to Standards:

New York State: Early Learning Guidelines

Domain I: Physical Well-Being, Health, and Motor Development

- F. Fine Motor Skills
- G. Sensorimotor Skills
- K. Safe Practices
- L. Rules and Self-Regulation

Domain II: Social and Emotional Development

- B. Interactions with Adults: Children seek assistance from adults
- C. Interactions with Peers
- D. Interactions with Peers: Cooperation
- E. Interaction with Peers: Negotiation
- G. Adaptive Social Behavior: Group Activities
- J. Appreciating Diversity
- L. Self-Concept: Abilities and Preferences
- M. Self-Efficacy
- N. Self-Control
- O. Self-Control: Feelings and Impulses

Domain III: Approaches to Learning

- F. Curiosity and Interest
- G. Initiative
- H. Persistence and Attentiveness
- I. Creativity and Inventiveness

J. Reflection and Interpretation

Domain IV: Cognition and General Knowledge

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- G. Critical and Analytic Thinking: Children use past knowledge to build new knowledge
- H. Problem-Solving: Children find multiple solutions to questions, tasks, problems, and challenges
- K. Scientific Thinking: Children collect information through observation and manipulation
- L. Scientific Thinking: Children engage in exploring the natural world by manipulating objects, asking questions, making predictions, and developing generalizations
- N. Scientific Knowledge: Children observe and describe characteristics of earth
- S. Ecology: Children demonstrate awareness of the relationship between human and the environment
- Y. Expression and Representation: Children use creative arts to express and represent what they know, think, believe, or feel

Domain V: Language, Communication, and Literacy

- B. Receptive Vocabulary
- C. Expressive Vocabulary
- D. Grammar and Syntax
- E. Comprehension
- F. Expressive/ Oral Language
- G. Listening Skills
- H. Oral and Written Communication
- I. Conventions of Social Communication

Materials:

- Liquid watercolors
- Water (dilute watercolors)

- Spray bottles
- Eye droppers
- Containers (for eye dropper watercolors)
- Squirt bottles

Procedure:

- 1) Get materials ready to take outside in the snow:
 - a. Fill squirt bottles, containers, and spray bottles with a mixture of watercolors and water.
- 2) Get children dressed to go outside.
- 3) Take the children to an area outside where there is an abundance of room for the children to draw and paint in the snow.
- 4) Have them take a seat in the snow while you set the materials out in three different stations (one station for each material).
- 5) Have the children scoop up a handful of snow with their hands. Ask the children questions about how it feels. Prompt them if needed.
 - a. “How does the snow feel on your hands?” (cold)
 - b. “Let the snow sit on your hands and watch what it does. What is happening to the snow?” (It is melting)
 - c. “How does the snow feel now?” (wet, cold, warm)
- 6) Let them know that they will now be able to use the materials set out to paint or draw in the snow.
 - a. Remind them to carefully watch what happens to the snow as they add the colors to it (it melts)
- 7) Show them the three different painting materials that are provided for them:
 - a. Pick up the spray bottle and squirt a couple squirts in the snow.
 - b. Pick up an eye dropper, fill it with watercolor, and squeeze it into the snow.
 - c. Pick up a squirt bottle, squeeze it, and swirl it around a couple times in the snow.
- 8) Let the children use the painting materials as long as time permits or their interest fades (approximately 20 minutes)

- a. If their interest starts to fade, you can always show them a new way to use the painting material or how to create different effects with the same material (turning the nozzle on the squirt bottle).
- 9) While the children are using the painting materials:
- a. Take photographs of how each individual student is holding each material.
 - b. Take photographs of the student's process along with the product of their art work.
 - c. Take anecdotal notes of the language, vocabulary, sentences, and exact quotes the children are using while engaging in this activity; especially if they are discussing the properties of the snow.

Extension:

- Mix primary colors to make secondary colors
- Draw a simple picture in the snow and see if the students can reproduce the picture.
- Collaboratively, decide on a picture that you want to create with one or two students. Start the picture by drawing one thing in the snow (a circle for a head). Then let a child add something to the picture (two circles for eyes). Then let the next child add something to the picture (small circle for the nose). Continue in this manner until your picture is complete.
- Make a snowman and use the watercolors to add on his eyes, mouth, buttons, etc. Bring out a carrot, hat, scarf, and sticks to complete the snowman.
- Bring small bowls outside and fill them with snow. Allow the children to add enough water until the snow turns to slush. Then let the children add watercolors to the slush. Leave the bowls outside until the slush freezes. Pop the ice out when it freezes and let the children play with the ice balls.

Assessment:

Photographs: Take photographs while students are using the materials to paint with in the snow. The photographs will allow you to go back and assess each particular student's fine motor skills by looking at the way they are holding and using the painting materials.

Anecdotal notes: Take notes of the vocabulary that the students use while engaging in this activity. Write down specific quotes that the children used outside while painting with these art materials. Take any additional notes that you deem necessary for each individual child.

Winter

Insects

Title: Creepy Crawly Spiders

Student Learning Objectives:

Students will be able to:

- Use new vocabulary words to describe the characteristics of spiders and spider webs (camouflage, cobweb, silk, prey, arachnid, spinneret, dragline, legs, eyes, etc.)
- Describe the function of a spider web (to catch prey).
- Predict why a spider's prey gets stuck in the web, but the spider does not.

Alignment to Standards:

New York State: Early Learning Guidelines

Domain I: Physical Well-Being, Health, and Motor Development

I. Safe Practices

J. Rules and Self-Regulation

Domain II: Social and Emotional development

B. Interactions with Adults: Children Seek Assistance from Adults

C. Interactions with Peers

D. Interaction with Peers: Cooperation

E. Interaction with Peers: Negotiation

F. Adaptive Social Behavior

H. Adaptive Social Behavior: Diverse Settings

I. Adaptive Social Behavior: Empathy

K. Self-Concept

N. Self-Control

O. Self-Control: Feelings and Impulses

Domain III: Approaches to Learning

A. Curiosity and Interest

B. Initiative

C. Persistence and Attentiveness

D. Creativity and Inventiveness

E. Reflection and Interpretation

Domain IV: Cognition and General Knowledge

- A. Causation: Children demonstrate awareness of cause and effect
- B. Critical and Analytic Thinking: Children compare, contrast, examine, and evaluate experiences, tasks, and events
- C. Critical and Analytic Thinking: Children use past knowledge to build new knowledge
- K. Scientific Thinking: Children collect information through observation and manipulation
- L. Scientific Thinking: Children engage in exploring the natural world by manipulating objects, asking questions, making predictions, and developing generalizations
- M. Scientific Knowledge: Children observe and describe characteristics of living things
- O. History: Children demonstrate knowledge of past events and awareness of how they may influence the present and future
- P. Geography: Children demonstrate knowledge of the relationship between people, places, and regions
- S. Ecology: Children demonstrate awareness of the relationship between humans and the environment
- W. Community: Children demonstrate civic responsibility

Domain V: Language, Communication, and Literacy

- B. Receptive Vocabulary
- C. Expressive Vocabulary
- D. Grammar and Syntax
- E. Comprehension
- F. Expressive/Oral Language
- G. Listening Skills
- H. Oral and Written Communication
- I. Conventions of Social Communication

Materials:

- Spider web
- Magnifying glass
- KWL chart
- Marker

Procedure:

- 1) Tape up the KWL chart to be filled out.
- 2) Gather the children together at the meeting area to have a discussion about spiders and spider webs.
- 3) Ask the children what they know about spiders and spider webs.
- 4) Write their responses in the K (what we know) section of the chart.
 - a. Encourage them to describe the shape of the spider's body, how many legs they have, what spiders do, where they live, what they eat, etc.)
- 5) Then tell the children that they are going to go for a walk to find spiders and spider webs.
- 6) Ask the children what questions they have or what they want to know about spiders and spider webs.
- 7) Write their responses in the W (what we want to know) section of the chart.
 - a. Make sure to include their comments in the discussions that you have about spiders.
- 8) Give the children some rules and reminders before getting ready to leave the classroom:
 - a. Tell the children that they are allowed to look at the spiders and spider webs but they are not allowed to touch them.
 - b. Remind them that spiders won't hurt them.
- 9) Take the children for a walk inside the building.
- 10) When you spot a spider or a spider web, allow the children to use their magnifying glass to observe and investigate.
 - a. Take pictures of the children using their magnifying glass to investigate and learn about spiders and spider webs
- 11) Give children sufficient time to observe the spider and spider web.

- a. Guide their observations by asking:
 - i. How does the spider move?
 - ii. What color is it?
 - iii. What does the spider/ spider web look like?
 - iv. How many legs does the spider have?
 - v. What is the spider doing?
 - vi. Why does a spider spin a web?
 - vii. What things might get stuck in a spider web?
 - viii. Why does a spider not get stuck in the web?
- 12) Record their responses on an anecdotal note.
 - a. Remember to record their prediction of why a spider does not get stuck in a web but the spiders prey does and why spiders spin webs.
- 13) Continue on your walk to find more spiders and spider webs.
- 14) Repeat steps 10 -12 when another spider or spider web is found.
- 15) Return back to the classroom after enough observations have been done on spiders and spider webs.
- 16) Fill out the L (what we learned) section on the chart.
- 17) Ask the children if they have any more questions or information they want to learn about spiders.

Extension:

- Return to the spiders and spiders webs that you found on a regular basis. Discuss the changes that have happened since the last time you were there.
- Have the children draw a picture of a spider and spider web before and after learning about spiders.
- Create a spider web by marble painting with white paint on a black piece of paper.
- Play dough spiders: Teach the children how to roll play dough into a ball to make the spider's body. Then give them pipe cleaners to stick into the play dough for the spider's legs.
- Spider Toss: Students will be given realistic toy replicas of spiders to toss into buckets of varying distances and radiants.

- Compare and contrast different types of spiders.
- Bring in a pet tarantula for the children to take care of for a while.
- Spider Swat: Hang pictures of spiders around the room and allow the children to use a fly swatter to swat the spider.

Assessment:

Photographs: Take photographs while the children are using the magnifying glass to investigate and explore spiders and their webs. The photographs will allow you to capture all the investigations that the children are doing to learn about this insect.

Anecdotal Notes: Take notes on the discussions the children have about spiders and their webs; especially their prediction of why spiders do not stick in a web but their prey does and why spiders spin webs. Also take notes on vocabulary, language, social skills, and describing words the children use in their discussions. Try to notice new developments that the children are engaging in: more complex sentences, expanded vocabulary, describing words, etc. These anecdotal notes will allow you to assess what information each child is learning about spiders and their webs and will inform you if any of the children need more experiences with spiders to learn about their characteristics.

Winter Plants

Title: Tree Journal (continued)

Student Learning Objectives:

Students will be able to:

- Identify at least 4 parts of a tree (trunk, branch, twig, root)
- Construct (draw) at least 4 parts of a tree (trunk, branch, twig, root).
- Predict what the tree will look like/happen next season (spring)

Alignment to Standards:

New York State: Early Learning Guidelines

Domain I: Physical Well-Being, Health, and Motor Development

- B. Fine Motor Skills
- I. Safe Practices
- J. Rules and Self-Regulation

Domain II: Social and Emotional development

- B. Interactions with Adults: Children Seek Assistance from Adults
- D. Interaction with Peers: Cooperation
- E. Interaction with Peers: Negotiation
- F. Adaptive Social Behavior
- J. Appreciating Diversity
- K. Self-Concept
- M. Self-Efficacy
- N. Self-Control
- O. Self-Control: Feelings and Impulses

Domain III: Approaches to Learning

- A. Curiosity and Interest
- C. Persistence and Attentiveness
- D. Creativity and Inventiveness
- E. Reflection and Interpretation

Domain IV: Cognition and General Knowledge

- B. Critical and Analytic Thinking: Children compare, contrast, examine, and evaluate experiences, tasks, and events
- C. Critical and Analytic Thinking: Children use past knowledge to build new knowledge
- E. Representational Thought: Children use symbols to represent objects
- G. Number and Sense Operations: Children demonstrate knowledge of numbers and counting
- H. Measurement: Children demonstrate knowledge of size, volume, height, weight, and length
- I. Properties of Ordering: Children identify and label shapes
- K. Scientific Thinking: Children collect information through observation and manipulation
- L. Scientific Thinking: Children engage in exploring the natural world by manipulating objects, asking questions, making predictions, and developing generalizations
- M. Scientific Knowledge: Children observe and describe characteristics of living things
- N. Scientific Knowledge: Children Observe and describe characteristics of the earth
- P. Geography: Children demonstrate awareness of location and spatial relationships
- Y. Expression and Representation: Children use creative arts to express and represent what they know, think, believe, or feel

Domain V: Language, Communication, and Literacy

- B. Receptive Vocabulary
- C. Expressive Vocabulary
- D. Grammar and Syntax
- E. Comprehension
- F. Expressive/Oral Language
- G. Listening Skills
- H. Oral and Written Communication

- I. Conventions of Social Communication
- J. Reading: Phonological Awareness
- K. Reading: Alphabetic Principle
- L. Reading: Print Concepts
- M. Reading: Comprehension of Printed Material
- P. Writing: Alphabet Knowledge
- Q. Writing Conventions

Materials:

- Crayons (variety of colors)
- Spiral bound notebook (each child)
- Small paper bags (to collect nature items)
- Clear tape (to tape items into their journal)
- Clip boards to write on
- Plastic shovels (optional: for digging in the snow)

Procedure:

Note: This lesson should be implemented after several nature walks involving discussions and observations about trees during this season. The discussions and observations should include how things look, feel, smell, sound, differences, similarities, etc. Make sure to include in your discuss that the tree is now bare because the leaves have fallen off. You may want to include why the leaves have fallen off somewhere in your discussions. Remember to ask the children “Why do you think that” questions, whenever possible, to engage their use of higher level thinking skills.

- 1) Gather materials needed for the nature walk.
- 2) Hold up a child’s nature journal and remind them of the purpose of this notebook:
 - a. This is your nature journal. Inside this journal you have drawn a picture of a tree during the season of fall. Show them a picture that was drawn. Ask them questions about the tree if you like. Tell them they are going to go on another nature walk where they will go visit the same tree. Let them know that they will have to draw and write about the same tree now that it is winter. Include anything in this conversation that you deem appropriate for each individual child.

- 3) Collect all materials needed in a back pack for the teacher to carry (children's hands should be free of any objects during the nature walk so they can explore items in nature).
- 4) Get children dressed appropriately for the outside weather conditions.
- 5) Take the children on a nature walk to the predetermined spot. On your walk there, stop at different trees and have discussions about things they notice (how things look, feel, smell, sound, differences, similarities, etc.) Ask, "Why do you think that" questions, whenever possible, to engage their use of higher level thinking skills.
- 6) When you arrive at your predetermined spot, remind children to sit by the same tree they sat by last time.
- 7) Hand out the small paper bags.
- 8) Tell the children that they can collect items in nature that they find while exploring the area (pine cone, pine needle, piece of bark, twig, etc.) Encourage them to dig in the snow (with their hands or plastic shovels) to find different parts/pieces of a tree.
- 9) Give children about 5 or 10 minutes to collect nature items in their paper bag (The paper bag might get wet from the snow but that is fine).
- 10) After collecting nature items, the children should come back to their spot by the same tree they drew before. Remind the children that they can include any of the items they found digging in the snow in their nature journal if they choose to.
- 11) Hand-out their spiral notebooks and crayons.
- 12) Explain the directions (very simple):
 - a. Have the children use their crayons to draw the tree they are sitting by.
 - b. Tell them that you would like to see the different parts of the tree that you have been discussing in their drawing.
 - c. Remind them that you have been discussing the different parts of the tree and how they feel, look, smell, sound, etc.
 - d. Let them know that they can get up to touch the tree to see how it feels, match a crayon to a specific color on the tree, pick a piece of bark off the tree, snap a twig off the tree etc. (The bark and twig can be taped to their paper)
- 13) As they are drawing, walk around to the children and discuss their drawings with them. Point out the specific things that you see in their drawing.

- a. “What is this long brown line that you drew here?”
 - b. “What are all these short lines that you have coming off this long line?”
 - c. Turn back to their predictions. Discuss if their predictions were correct.
- 14) Assist the children with making predictions about what will happen to the tree next season (spring) and why they think this will happen. Record their predictions in their journal.
- 15) Before allowing the children to put their notebook away. Encourage them to go look at the tree one more time to see if there is anything else they want to include in their drawing.
- 16) When the children are finished constructing their winter tree, allow them to go collect more nature items to put in their paper bag or just go play in the surrounding area.
- 17) The children can carry their paper bags back to the classroom to have nature items in the classroom to investigate.

Extension:

- Go on a nature walk, the following week, back to the same tree the children drew and discuss any changes that have happened. Have them collect more nature items. Did they collect anything new? Is anything new growing? Dying?
- Have children label the parts of the tree that they drew.
 - “Can you write the word *root* next to the root that you drew?”
 - Let me write the word *root* on your paper for you. Next time you want to write the word *root*, you can just turn to this page and copy it.”
- Create another bark rubbing of the same tree. Discuss the shapes the children see in the bark, how it feels, what colors they see, any changes they see from last time etc.
- Paint with twigs broken off the tree
- Paint with items from their paper bag
- Bring some snow into the classroom and allow children to play in it. Add some food coloring, glitter, blocks, etc. to the snow for them to play in.

Assessment:

Observation & Anecdotal notes: Observe the children outside and take notes on any behaviors, language skills, social skills, motor skills, etc. that you deem necessary for each

individual child. Write down specific quotes that the children used outside while collecting nature items or while drawing. Try to notice new developments that the children are engaging in: new pencil grip, more complex sentences, expanded vocabulary (bare), etc.

Make an anecdotal note on the child's drawing stating the prediction they made about what will happen to the tree. You can write it on the back of their drawing if there is no room on the front. Read each word aloud to the child as you write it.

Work Sample: The children's drawing of a tree is a concrete example of their learning at this stage of development. Use this work sample to compare to their previous work sample (fall tree). Notice if the child used more details while drawing the tree or if the child understands a new concept or skill (a twig comes off a branch, not the trunk). Use this work sample to compare to the spring and summer work samples. The collection of work samples will show the learning, growth, and achievement that each individual child has had over the year. You should see some growth already just between the fall and winter tree work samples.

Winter
Using Your Senses

Title: Brrr Snow

Student Learning Objectives:

Students will be able to:

- Use their senses to explore how snow: smells, looks, feels, tastes, and sounds.
- Use at least one of their senses to describe a characteristic of snow.

Alignment to Standards:

New York State: Early Learning Guidelines

Domain I: Physical Well-Being, Health, and Motor Development

- A. Gross Motor Skills
- B. Fine Motor Skills
- C. Sensorimotor Skills
- E. Physical Fitness: Variety and Well-Being
- I. Safe Practices
- J. Rules and Self-Regulation

Domain II: Social and Emotional Development

- B. Interactions with Adults: Children seek assistance from adults
- C. Interactions with Peers
- D. Interactions with Peers: Cooperation
- E. Interaction with Peers: Negotiation
- F. Adaptive Social behavior
- G. Adaptive Social Behavior: Group Activities
- J. Appreciating Diversity
- N. Self-Control
- O. Self-Control: Feelings and Impulses

Domain III: Approaches to Learning

- A. Curiosity and Interest
- B. Initiative
- C. Persistence and Attentiveness
- E. Reflection and Interpretation

Domain IV: Cognition and General Knowledge

- A. Causation: Children demonstrate awareness of cause of effect
- B. Critical and Analytic Thinking: Children compare, contrast, examine, and evaluate experiences, tasks, and events
- C. Critical and Analytic Thinking: Children use past knowledge to build new knowledge
- D. Problem-Solving: Children find multiple solutions to questions, tasks, problems, and challenges
- K. Scientific Thinking: Children collect information through observation and manipulation
- L. Scientific Thinking: Children engage in exploring the natural world by manipulating objects, asking questions, making predictions, and developing generalizations
- M. Scientific Thinking: Children observe and describe characteristics of living things
- W. Community: Children demonstrate civic responsibility

Domain V: Language, Communication, and Literacy

- B. Receptive Vocabulary
- C. Expressive Vocabulary
- D. Grammar and Syntax
- E. Comprehension
- F. Expressive/ Oral Language
- G. Listening Skills
- H. Oral and Written Communication
- I. Conventions of Social Communication

Materials:

- Snow

Procedure:

- 1) Find an area outside where the children will have room to play in the snow.
- 2) Let the children play in the snow (approximately 15 minutes)
- 3) After playing, have the children sit down so they can see you.

- 4) Take a scoop of snow with your hand. Continue to hold it.
- 5) Have the children scoop up some snow in their hand.
 - a. Take pictures of the children scooping up snow.
- 6) Model how you are using your senses to describe the snow:
 - a. “The snow feels cold. It is making my hand cold.”
 - b. “How does the snow in your hand feel?”
 - i. Record the children’s responses on an anecdotal recording sheet.
 - ii. Take pictures of the children as they explain how the snow feels.
- 7) Continue to model how you are using your senses to describe the snow by looking closely at the snow:
 - a. “I can see sparkles in the snow.”
- 8) Instruct the children to look at the snow in their hand.
 - a. “What do you see?”
 - b. “What colors can you see?”
 - i. Record the children’s responses on an anecdotal recording sheet.
 - ii. Take pictures of the children as look closely at the snow.
- 9) Instruct the children to smell the snow.
 - a. “My snow doesn’t have a smell.”
 - b. “How does your snow smell?”
 - i. Record the children’s responses on an anecdotal recording sheet.
 - ii. Take pictures of the children as they smell the snow.
- 10) Have the children put the snow down and stand up.
- 11) Start walking around in the snow.
- 12) Have the children join.
- 13) Then, have the children listen to the noises that the snow makes as they walk around in it.
 - a. “Listen as you walk in the snow.”
 - b. “What noises does the snow make when you walk in it?”
 - c. “I can hear the snow crunching.”
 - i. Record the children’s responses on an anecdotal recording sheet.
 - ii. Take pictures of the children as they are walking around in the snow.
- 14) Have the children sit down and take another scoop of snow.

15) Have the children taste the snow.

- a. “How does the snow taste?”
- b. “The snow melts in my mouth and tastes like water.”
 - i. Record the children’s responses on an anecdotal recording sheet.
 - ii. Take pictures of the children as they are tasting the snow.

16) Let the children continue to play in the snow.

- a. Observe the children to see if they are engaging more of their senses while playing in the snow this time.
- b. Take pictures of the children as they are using their senses in the snow.
- c. Take anecdotal notes of additional discussions the children have about how the snow feels, sounds, tastes, smells, and looks.

Extension:

- Make slushies with the children. Have discussions with the children about how the slushies sound, feel, taste, look, and smell.
- Make snow balls and discuss how packing the snow makes the snow feel harder.
- Make snow ice cream.
- Place several different containers of snow in different locations. Make predictions with the children about where the snow will melt first. Discuss why the snow melted in the first place before the others.
- Give the children ice cubes, salt, and sugar to experiment with. Allow them to taste the salt and the sugar while they are experimenting.

Assessment:

Photographs: Take photographs of the children while they are using their senses to explore snow. You can use the photographs to pair with the anecdotal notes you took to show how the children are learning to use their senses to explore snow. Photographs allow you to capture the children’s facial expressions as they are exploring the snow. The children may have a certain facial expression they use when they feel something cold, when they smell something stinky, when they taste something icky, etc.

Anecdotal Notes: Record the exact sentences and comments the children are using while using their senses to explore the snow. The anecdotal notes will allow you to assess which students understand how to use their senses to describe characteristics of snow.

Spring

Nature-based Art

Title: Painting with Pussy Willows (small group/individually)

Student Learning Objectives:

Students will be able to:

- Use the nontraditional painting tool to paint with in multiple ways (tapping, swirling, swiping, etc.)
- Explain the process he or she used to make their piece of art

Alignment to Standards:

New York State: Early Learning Guidelines

Domain I: Physical Well-Being, Health, and Motor Development

- A. Gross Motor Skills
- B. Fine Motor Skills
- C. Sensorimotor Skills
- I. Safe Practices
- J. Rules and Self-Regulation

Domain II: Social and Emotional Development

- B. Interactions with Adults: Children seek assistance from adults
- C. Interactions with Peers
- D. Interactions with Peers: Cooperation
- E. Interaction with Peers: Negotiation
- G. Adaptive Social Behavior: Group Activities
- J. Appreciating Diversity
- L. Self-Concept: Abilities and Preferences
- M. Self-Efficacy
- N. Self-Control
- O. Self-Control: Feelings and Impulses

Domain III: Approaches to Learning

- A. Curiosity and Interest
- B. Initiative
- C. Persistence and Attentiveness

- D. Creativity and Inventiveness
- E. Reflection and Interpretation

Domain IV: Cognition and General Knowledge

- A. Causation: Children demonstrate awareness of cause of effect
- B. Critical and Analytic Thinking: Children compare, contrast, examine, and evaluate experiences, tasks, and events
- C. Critical and Analytic Thinking: Children use past knowledge to build new knowledge
- D. Problem-Solving: Children find multiple solutions to questions, tasks, problems, and challenges
- H. Measurement: Children demonstrate knowledge of size, volume, height, weight, and length
- K. Scientific Thinking: Children collect information through observation and manipulation
- L. Scientific Thinking: Children engage in exploring the natural world by manipulating objects, asking questions, making predictions, and developing generalizations
- S. Ecology: Children demonstrate awareness of the relationships between humans and the environment
- Y. Expression and Representation: Children use creative arts to express and represent what they know, think, believe, or feel

Domain V: Language, Communication, and Literacy

- B. Receptive Vocabulary
- C. Expressive Vocabulary
- D. Grammar and Syntax
- E. Comprehension
- F. Expressive/ Oral Language
- G. Listening Skills
- H. Oral and Written Communication
- I. Conventions of Social Communication

Materials:

- Pussy Willows
- Paint
- Paint containers
- Paper (individual sheets)
- Table cover (optional)

Procedure:

- 1) Set up the art area with the materials needed for the activity.
 - a. Set materials on table (no specific arrangement)
 - b. Cover table with table cover for easy clean up
- 2) Allow children to approach the activity based upon their own interest.
 - a. However, you can call them over and ask “Would you like to paint with me?”
- 3) As children sit down, answer any questions they have (they will most likely ask what “those” are).
- 4) Let the children paint with the pussy willows (approximately 10-15 minutes)
 - a. Take pictures of the process the children are using to construct their artwork.
 - b. Comment on the results of the way the children are using the pussy willow to paint.
 - i. Model the language and vocabulary that you want the children to use when you ask them how they made their artwork.
 - ii. “Look what happens when you *tap* the pussy willow on your paper. I like the way that looks.”
- 5) When the children are finished painting:
 - a. Ask them, “Can you tell me how you made this beautiful piece or artwork?”
 - b. Record their answer on an anecdotal recording sheet.
 - c. Prompt the children if needed.
 - i. Point to a specific spot on their paper. “I like these dots right here on your paper. Do you remember how you made those dots with the pussy willow?”
- 6) Clean up the art area when finished.

Extension:

- Teach the children about different types of seeds.
- Paint with cattails.
- Bring cattails into the classroom and allow the children to investigate and explore them (tear the cattail apart; its fluffy)
- Make a collage using pussy willows, cattails, and tall grasses found in a pond.
- Find a nearby pond and go explore and investigate animals and plants that live there.

Assessment:

Photographs: Take photographs of the children while they are investigating and manipulating the pussy willows. The photographs you take of the children will capture the process they used to make their piece of art. You can then compare the photographs to the description of the process the children gave from the anecdotal notes. The photographs will also allow you to capture the different ways that the children manipulated the pussy willows before, during, and after painting with them. Capturing photographs of the children manipulating the pussy willows allows for you to assess how children learn to use unfamiliar materials.

Anecdotal Notes: When the children have finished their artwork, have a discussion with each individual child. Ask the child how they made their art work (the process they used). Prompt them on the materials they used, colors of paint they used, and how they used the pussy willow (tap, swipe, etc.) Record the exact quotes that the children use when explaining the process they used to make their artwork.

Work Samples: The student's finished art work is a concrete example of their learning at this stage of development. You will be able to compare the photographs you took, with the anecdotal notes, to their work sample to assess the description of the process the children used to make their artwork.

Optional: Print out the children's description of how they made their art work and post it next to their picture in the classroom.

Spring

Insects

Title: Wiggly Worm Hunt

Student Learning Objectives:

Students will be able to:

- Describe at least 3 characteristics of an earthworm (how it feels, how it moves, what color it is, what it likes to eat, where it lives, etc.)
- Identify which end is the head of the earthworm.
- Use a magnifying glass to investigate and learn about earthworms.

Alignment to Standards:

New York State: Early Learning Guidelines

Domain I: Physical Well-Being, Health, and Motor Development

- B. Fine Motor Skills
- C. Sensorimotor Skills
- I. Safe Practices
- J. Rules and Self-Regulation

Domain II: Social and Emotional development

- B. Interactions with Adults: Children Seek Assistance from Adults
- C. Interactions with Peers
- D. Interaction with Peers: Cooperation
- E. Interaction with Peers: Negotiation
- F. Adaptive Social Behavior
- G. Adaptive Social Behavior: Group Settings
- I. Adaptive Social Behavior: Empathy
- J. Appreciating Diversity
- K. Self-Concept
- N. Self-Control
- O. Self-Control: Feelings and Impulses

Domain III: Approaches to Learning

- D. Curiosity and Interest
- E. Initiative

- F. Persistence and Attentiveness
- G. Creativity and Inventiveness
- H. Reflection and Interpretation

Domain IV: Cognition and General Knowledge

- C. Causation: Children demonstrate awareness of cause and effect
- F. Critical and Analytic Thinking: Children use past knowledge to build new knowledge
- H. Measurement: Children demonstrate knowledge of size, volume, height, weight, and length
- N. Scientific Thinking: Children collect information through observation and manipulation
- O. Scientific Thinking: Children engage in exploring the natural world by manipulating objects, asking questions, making predictions, and developing generalizations
- P. Scientific Knowledge: Children observe and describe characteristics of living things
- Q. Scientific Knowledge: Children Observe and describe characteristics of the earth
- Q. Geography: Children demonstrate awareness of location and spatial relationships
- R. Geography: Children demonstrate knowledge of the relationship between people, places, and regions
- T. Ecology: Children demonstrate awareness of the relationship between humans and the environment

Domain V: Language, Communication, and Literacy

- B. Receptive Vocabulary
- C. Expressive Vocabulary
- D. Grammar and Syntax
- E. Comprehension
- F. Expressive/Oral Language
- G. Listening Skills

H. Oral and Written Communication

I. Conventions of Social Communication

Materials:

- Earthworms
- Magnifying glasses
- KWL chart
- Marker

Procedure:

- 18) Tape up the KWL chart to be filled out.
- 19) Gather the children together at the meeting area to have a discussion about earthworms.
- 20) Ask the children what they know about earthworms.
- 21) Write their responses in the K (what we know) section of the chart.
 - a. Encourage them to describe where earthworms live, what they look like, what they eat, etc.
- 22) Then tell the children that they are going on an earthworm hunt to find earthworms.
- 23) Ask the children what questions they have or what they want to know about earthworms.
- 24) Write their responses in the W (what we want to know) section of the chart.
- 25) Give the children some rules and reminders before getting ready to leave the classroom:
 - a. Tell the children that if they want to touch the earthworm, they have to be very gentle so they do not hurt them.
 - b. Teach them how to use their “touching finger” (pinky finger) when touching the worms.
 - c. Teach them how to gently pick the earthworm up if they want to hold it in their hands to investigate it closer.
- 26) Get the children ready to go on an earthworm hunt.
- 27) Take the children for a walk outdoors in a nearby forest where there will be rocks and logs for the children to move so they can look for earthworms.

- 28) On your walk, allow the children to slowly pick up rocks and logs to see if there are earthworms under them.
- 29) When you spot an earthworm, tell the children to get down on the ground with their magnifying glass to learn about the earthworm.
 - a. Take pictures of the children using their magnifying glasses to investigate and learn about earthworms.
- 30) Give children sufficient time to observe the earthworms.
 - a. Guide their observations by asking:
 - i. How does the earthworm move?
 - ii. What color is it?
 - iii. What does its skin look like?
 - iv. What does it feel like?
 - v. What does the worm do?
 - vi. How can you tell which end is the head?
- 31) Record their responses on an anecdotal note.
- 32) Continue to look under rocks and logs for earthworms.
- 33) Fill out the L (what we learned) section on the chart when the children are finished learning about earthworms.

Extension:

- Set up worm farms in clear plastic water bottles in the classroom so the children can see the earthworms in action.
- Wet a large area of grass outside, wait, and watch the earthworms come out of the ground. Make predictions with the students about why the earthworms come to the surface when the ground is wet.
- Paint with cooked spaghetti noodles and pretend they are worms.
- Roll play dough to make worms.
- Squirt shaving cream onto a table and let the children use their pointer finger to make worm tunnels in the shaving cream. Give the children pieces of yarn to move through the tunnels.
- Cut yarn or pipe cleaners into different sizes of worms. Have the children measure the worms with a ruler or nontraditional unit of measure.

- Have the children sort the yarn or pipe cleaner worms from smallest to largest.

Assessment:

Photographs: Take photographs while the children are using the magnifying glasses to investigate and explore earthworms. The photographs will allow you to capture all the investigations that the children are doing to learn about earthworms. You will be able to see if the children are holding the magnifying glass in the proper position to see the earthworms clearly.

Anecdotal Notes: Take notes on the discussions the children have about earthworms; especially if they are discussing characteristics about the earthworms. Also take notes on vocabulary, language, and describing words the children use when discussing how the worms feel and how they move. Also, also take note on if each individual child is able to identify which end of the worm is the head. These anecdotal notes will allow you to assess what information each child is learning about earthworms and will inform you if any of the children need more experiences with earthworms to learn about their characteristics.

Spring

Trees

Title: Tree Journal (continued)

Student Learning Objectives:

Students will be able to:

- Identify at least 5 parts of a tree (trunk, branch, twig, root, bud)
- Construct (draw) at least 5 parts of a tree (trunk, branch, twig, root, bud).
- Predict what the tree will look like/happen next season (summer)

Alignment to Standards:

New York State: Early Learning Guidelines

Domain I: Physical Well-Being, Health, and Motor Development

- B. Fine Motor Skills
- I. Safe Practices
- J. Rules and Self-Regulation

Domain II: Social and Emotional development

- B. Interactions with Adults: Children Seek Assistance from Adults
- D. Interaction with Peers: Cooperation
- E. Interaction with Peers: Negotiation
- F. Adaptive Social Behavior
- J. Appreciating Diversity
- K. Self-Concept
- M. Self-Efficacy
- N. Self-Control
- O. Self-Control: Feelings and Impulses

Domain III: Approaches to Learning

- G. Curiosity and Interest
- I. Persistence and Attentiveness
- J. Creativity and Inventiveness
- K. Reflection and Interpretation

Domain IV: Cognition and General Knowledge

- H. Critical and Analytic Thinking: Children compare, contrast, examine, and evaluate experiences, tasks, and events
- I. Critical and Analytic Thinking: Children use past knowledge to build new knowledge
- E. Representational Thought: Children use symbols to represent objects
- I. Number and Sense Operations: Children demonstrate knowledge of numbers and counting
- J. Measurement: Children demonstrate knowledge of size, volume, height, weight, and length
- K. Properties of Ordering: Children identify and label shapes
- R. Scientific Thinking: Children collect information through observation and manipulation
- S. Scientific Thinking: Children engage in exploring the natural world by manipulating objects, asking questions, making predictions, and developing generalizations
- T. Scientific Knowledge: Children observe and describe characteristics of living things
- U. Scientific Knowledge: Children Observe and describe characteristics of the earth
- U. Geography: Children demonstrate awareness of location and spatial relationships
- Y. Expression and Representation: Children use creative arts to express and represent what they know, think, believe, or feel

Domain V: Language, Communication, and Literacy

- B. Receptive Vocabulary
- C. Expressive Vocabulary
- D. Grammar and Syntax
- E. Comprehension
- F. Expressive/Oral Language
- G. Listening Skills
- H. Oral and Written Communication

- I. Conventions of Social Communication
- J. Reading: Phonological Awareness
- K. Reading: Alphabetic Principle
- L. Reading: Print Concepts
- M. Reading: Comprehension of Printed Material
- P. Writing: Alphabet Knowledge
- Q. Writing Conventions

Materials:

- Crayons (variety of colors)
- Spiral bound notebook (each child)
- Small paper bags (to collect nature items)
- Clear tape (to tape items into their journal)
- Clip boards to write on

Procedure:

Note: This lesson should be implemented after several nature walks involving discussions and observations about trees during this season. The discussions and observations should include how things look, feel, smell, sound, differences, similarities, etc. Make sure to include in your discuss that the tree is sprouting buds and why the tree is sprouting buds. Have the children predict what the buds will turn into. Remember to ask the children “Why do you think that” questions, whenever possible, to engage their use of higher level thinking skills.

- 1) Gather materials needed for the nature walk.
- 2) Hold up a child’s nature journal and remind them of the purpose of this notebook:
 - a. This is your nature journal. Inside this journal you have drawn a picture of a tree during the season of fall and winter. Show them a picture that was drawn. Ask them questions about the trees if you like. Tell them they are going to go on another nature walk where they will go visit the same tree. Let them know that they will have to draw and write about the same tree now that it is spring. Include anything in this conversation that you deem appropriate for each individual child.
- 3) Collect all materials needed in a back pack for the teacher to carry (children’s hands should be free of any objects during the nature walk so they can explore items in nature).

- 4) Depending on the weather, bring umbrellas, wear rain boots, and a rain jacket.
- 5) Take the children on a nature walk to the predetermined spot. On your walk there, stop at different trees and have discussions about things they notice (how things look, feel, smell, sound, differences, similarities, etc.) Ask, “Why do you think that” questions, whenever possible, to engage their use of higher level thinking skills.
- 6) When you arrive at your predetermined spot, remind children to sit by the same tree they sat by last time.
- 7) Hand out the small paper bags.
- 8) Tell the children that they can collect items in nature that they find while exploring the area (bud, pine cone, piece of bark, twig, etc.) Encourage them to find different parts/pieces of a tree.
- 9) Give children about 5 or 10 minutes to collect nature items in their paper bag (The paper bag might get wet from the rain but that is fine).
- 10) After collecting nature items, the children should come back to their spot by the same tree they drew before. Remind the children that they can include any of the items they found exploring in their nature journal if they choose to.
- 11) Hand-out their spiral notebooks and crayons.
- 12) Explain the directions (very simple):
 - a. Have the children use their crayons to draw the tree they are sitting by.
 - b. Tell them that you would like to see the different parts of the tree that you have been discussing in their drawing (buds).
 - c. Remind them that you have been discussing the different parts of the tree and how they feel, look, smell, sound, etc.
 - d. Let them know that they can get up to touch the tree to see how it feels, match a crayon to a specific color on the tree, pick a piece of bark off the tree, snap a twig off the tree, pick a bud off the tree etc. (The bark, twig, and bud can be taped to their paper)
- 13) As they are drawing, walk around to the children and discuss their drawings with them. Point out the specific things that you see in their drawing (buds).
 - a. “What are all these short lines that you have coming off this long line?”
 - b. “What are these small green circles on the ends of these small lines?”

- c. Turn back to their predictions. Discuss if their predictions were correct.
- 14) Assist the children with making predictions about what will happen to the tree next season (summer) and why they think this will happen. Record their predictions in their journal.
- 15) Before allowing the children to put their notebook away. Encourage them to go look at the tree one more time to see if there is anything else they want to include in their drawing.
- 16) When the children are finished constructing their spring tree, allow them to go collect more nature items to put in their paper bag or just go play in the surrounding area.
- 17) The children can carry their paper bags back to the classroom to have nature items in the classroom to investigate.

Extension:

- Go on a nature walk, the following week, back to the same tree the children drew and discuss any changes that have happened. Have them collect more nature items. Did they collect anything new? Is anything new growing? Dying?
- Have children label the parts of the tree that they drew.
 - “Can you write the word *bud* next to the tree bud that you drew?”
 - Let me write the word *bud* on your paper for you. Next time you want to write the word *bud*, you can just turn to this page and copy it.”
- Create another bark rubbing of the same tree. Discuss the shapes the children see in the bark, how it feels, what colors they see, any changes they see from last time etc.
- Paint with twigs that have buds on them
- Paint with items from their paper bag
- Bring some twigs with buds on them into the classroom. Allow the children to investigate and explore the buds. Have children draw a picture about what the buds will turn into.
- Pick some flowers, if they are growing. Watch and observe the flowers as they grow. Make predictions on how tall they will get.
- Paint with flowers

Assessment:

Observation & Anecdotal notes: Observe the children outside and take notes on any behaviors, language skills, social skills, motor skills, etc. that you deem necessary for each individual child. Write down specific quotes that the children used outside while collecting nature items or while drawing. Try to notice new developments that the children are engaging in: new pencil grip, more complex sentences, expanded vocabulary (buds), etc.

Make an anecdotal note on the child's drawing stating the prediction they made about what will happen to the tree. You can write it on the back of their drawing if there is no room on the front. Read each word aloud to the child as you write it.

Work Sample: The children's drawing of a tree is a concrete example of their learning at this stage of development. Use this work sample to compare to their previous work samples (fall and winter). Notice if the child used more details while drawing the tree or if the child understands a new concept or skill (a bud is on the end of a twig, not in the middle of the trunk). You should see some additional growth between the winter tree and spring tree work samples. A substantial amount of growth should be seen between the fall tree and the spring tree work samples. Use this work sample to compare to the summer work sample. The collection of work samples will show the learning, growth, and achievement that each individual child has had over the year.

Spring
Using Your Senses

Title: Let it Rain

Student Learning Objectives:

Students will be able to:

- Use their senses to explore how rain: smells, looks, feels, tastes, and sounds.
- Use at least one of their senses to describe a characteristic of rain.

Alignment to Standards:

New York State: Early Learning Guidelines

Domain I: Physical Well-Being, Health, and Motor Development

- A. Gross Motor Skills
- B. Fine Motor Skills
- C. Sensorimotor Skills
- E. Physical Fitness: Variety and Well-Being
- I. Safe Practices
- J. Rules and Self-Regulation

Domain II: Social and Emotional Development

- B. Interactions with Adults: Children seek assistance from adults
- C. Interactions with Peers
- D. Interactions with Peers: Cooperation
- E. Interaction with Peers: Negotiation
- F. Adaptive Social behavior
- G. Adaptive Social Behavior: Group Activities
- J. Appreciating Diversity
- N. Self-Control
- O. Self-Control: Feelings and Impulses

Domain III: Approaches to Learning

- A. Curiosity and Interest
- B. Initiative
- C. Persistence and Attentiveness
- E. Reflection and Interpretation

Domain IV: Cognition and General Knowledge

- A. Causation: Children demonstrate awareness of cause of effect
- B. Critical and Analytic Thinking: Children compare, contrast, examine, and evaluate experiences, tasks, and events
- C. Critical and Analytic Thinking: Children use past knowledge to build new knowledge
- D. Problem-Solving: Children find multiple solutions to questions, tasks, problems, and challenges
- K. Scientific Thinking: Children collect information through observation and manipulation
- L. Scientific Thinking: Children engage in exploring the natural world by manipulating objects, asking questions, making predictions, and developing generalizations
- M. Scientific Thinking: Children observe and describe characteristics of living things
- W. Community: Children demonstrate civic responsibility

Domain V: Language, Communication, and Literacy

- B. Receptive Vocabulary
- C. Expressive Vocabulary
- D. Grammar and Syntax
- E. Comprehension
- F. Expressive/ Oral Language
- G. Listening Skills
- H. Oral and Written Communication
- I. Conventions of Social Communication

Materials:

- A rainy day
- Umbrellas

Procedure:

- 1) Take the children outside for a walk in the rain with umbrellas.
- 2) Stop and listen to the rain.

- a. "Can you hear the rain?"
 - b. "What does it sound like?"
 - c. "Can you hear it hit your umbrella?"
 - d. "What sound does it make when it hits your umbrella?"
 - i. Record the children's responses on an anecdotal recording sheet.
 - ii. Take pictures of the children as they are listening to the rain.
- 3) Continue on your walk.
- 4) Have the children hold out their hand to catch some rain drops.
- a. "How does the rain feel?"
 - b. "The rain feels cold on my hand."
 - c. "The rain feels wet on my hand."
 - i. Record the children's responses on an anecdotal recording sheet.
 - ii. Take pictures of the children as they are catching rain drops in their hand.
- 5) Continue on your walk.
- 6) Have the children smell the rain.
- a. "Breathe in through your nose. What does the rain smell like?"
 - b. "It smells fresh when it rains."
 - c. "It smells like mud when it rains/"
 - i. Record the children's responses on an anecdotal recording sheet.
 - ii. Take pictures of the children as they are smelling the rain.
- 7) Continue on your walk.
- 8) Have the children stick out their tongue and taste the rain.
- a. "How does the rain taste?"
 - b. "The rain tastes like water."
 - i. Record the children's responses on an anecdotal recording sheet.
 - ii. Take pictures of the children as they are tasting the rain.
- 9) Continue on your walk.
- 10) Have the children stop and look at the rain as it falls into a puddle.
- a. "What does the rain look like?"
 - b. "The rain looks shiny."
 - i. Record the children's responses on an anecdotal recording sheet.

ii. Take pictures of the children as they are looking at the rain.

11) Continue on your walk.

12) Let the children stomp, run, and jump in the rain puddles.

- a. Observe the children to see if they are engaging more of their senses while playing in the rain.
- b. Take pictures of the children as they are using their senses in the rain.
- c. Record any additional discussions the children have about how the rain feels, sounds, tastes, smells, and looks.

Extension:

- Bring wax paper outside to catch rain drops on. Have the children use a magnifying glass to look at the raindrop. Discuss how the rain looks on the wax paper.
- Bring in different kinds of water for the children to taste. Have them pick which one is their favorite and explain why.
- Take containers outside (plastic, metal, styrofoam) to catch rain drops in. Have the children listen to the sounds the rain drops make as they fall into each container. Compare the differences in sounds.
- Describe the sounds the rain makes as the children jump and run through the puddles.

Assessment:

Photographs: Take photographs of the children while they are using their senses to explore rain. You can use the photographs to pair with the anecdotal notes you took to show how the children are learning to use their senses to explore rain. Photographs allow you to capture the children's facial expressions as they are exploring the rain. The children may have a certain facial expression they use when they feel something wet, when they smell something stinky, and when they see something shiny.

Anecdotal Notes: Record the exact sentences and comments the children are using while using their senses to explore the rain. The anecdotal notes will allow you to assess which students understand how to use their senses to describe characteristics of rain.

Summer

Nature-based Art

Title: Painting with Flowers (small group)

Student Learning Objectives:

Students will be able to:

- Describe how their piece of art makes them feel
- Manipulate nontraditional paintings tools using their fine motor skills
- Demonstrate motor control while using a nontraditional painting tool

Alignment to Standards:

New York State: Early Learning Guidelines

Domain I: Physical Well-Being, Health, and Motor Development

- A. Gross Motor Skills
- B. Fine Motor Skills
- I. Safe Practices
- J. Rules and Self-Regulation

Domain II: Social and Emotional Development

- B. Interactions with Adults: Children seek assistance from adults
- C. Interactions with Peers
- D. Interactions with Peers: Cooperation
- E. Interaction with Peers: Negotiation
- F. Adaptive Social Behavior
- H. Adaptive Social Behavior: Diverse Settings
- K. Self-Concept
- L. Self-Concept: Abilities and Preferences
- M. Self-Efficacy
- N. Self-Control
- O. Self-Control: Feelings and Impulses

Domain III: Approaches to Learning

- A. Curiosity and Interest
- B. Initiative
- C. Persistence and Attentiveness

D. Creativity and Inventiveness

Domain IV: Cognition and General Knowledge

- A. Causation: Children demonstrate awareness of cause of effect
- B. Critical and Analytic Thinking: Children compare, contrast, examine, and evaluate experiences, tasks, and events
- C. Critical and Analytic Thinking: Children use past knowledge to build new knowledge
- D. Problem-Solving: Children find multiple solutions to questions, tasks, problems, and challenges
- K. Scientific Thinking: Children collect information through observation and manipulation
- L. Scientific Thinking: Children engage in exploring the natural world by manipulating objects, asking questions, making predictions, and developing generalizations
- S. Ecology: Children demonstrate awareness of the relationships between humans and the environment
- Y. Expression and Representation: Children use creative arts to express and represent what they know, think, believe, or feel

Domain V: Language, Communication, and Literacy

- B. Receptive Vocabulary
- C. Expressive Vocabulary
- D. Grammar and Syntax
- E. Comprehension
- F. Expressive/ Oral Language
- G. Listening Skills
- H. Oral and Written Communication
- I. Conventions of Social Communication

Materials:

- Variety of flowers
- Paint
- Paint containers

Procedure:

- 1) Set up the art area with the materials needed for the activity.
 - a. Set materials on table (no specific arrangement)
 - b. Cover table with table cover for easy clean up
- 2) Allow children to approach the activity based upon their own interest.
 - a. However, you can call them over and ask “Would you like to paint with me?”
- 3) Do not give directions on how to use the flowers or what to do with the flowers. Let the children explore them as they approach the table. Some may pick them up and start painting; others may smell them or feel them.
- 4) Let the children paint with the flowers (approximately 10-15 minutes) or until their interest fades.
 - a. As they are painting, take anecdotal notes on any new or changing developments they are engaging in during this activity (new grip, painting with movement in their wrist instead of their whole arm, etc).
- 5) When the children are finished painting:
 - a. Ask them, “How does your painting make you feel?”
 - b. Record their answer on an anecdotal recording sheet.
 - c. Prompt the children if needed or give an example.
 - i. “When I look at your picture, I smile. I smile because your picture makes me feel happy.”
- 6) Clean up the art area when finished.

Extension:

- Paint with flowers and liquid watercolors
- Let the children use their pointer finger to paint “stems” of flowers. Use the flowers as “stamps” to make prints of flowers on top of the stems.
- Compare and contrast the different flowers that are provided.
- Sort and classify the flowers into groups based on color, size, shape, etc.
- Teach children about the different parts of the flower.
- Plant seeds to grow flowers.
- Buy flowers from the local store (one with buds) and let the children take care of them (water them). Observe the flowers over an extended period of time; make predictions

about how many flowers will grow, how big the flowers will get, what colors the flowers will be, etc.

- Discuss what flowers need in order to survive (water, sunlight, love, dirt).

Assessment:

Work Samples: The children's finished artwork is a concrete example of their learning at this stage of development. You will be able to assess how much control the children have using the painting tool, the various ways the children used the painting tool, the child's fine motor skills, etc.

Anecdotal Notes: Record children's response to how their art work makes them feel. Make sure to use direct quotes when recording responses. Also take note of any new or changing developments that you noticed with each individual child during this activity (new pencil grip, movement in wrist instead of elbow while painting, etc.)

Summer

Insects

Title: Ants at Work

Student Learning Objectives:

Students will be able to:

- Describe at least 3 characteristics of an ant (how it moves, what color it is, what it likes to eat, where it lives, what it looks like, etc.)
- Use a magnifying glass to investigate and learn about ants.

Alignment to Standards:

New York State: Early Learning Guidelines

Domain I: Physical Well-Being, Health, and Motor Development

- B. Fine Motor Skills
- C. Sensorimotor Skills
- I. Safe Practices
- J. Rules and Self-Regulation

Domain II: Social and Emotional development

- B. Interactions with Adults: Children Seek Assistance from Adults
- C. Interactions with Peers
- D. Interaction with Peers: Cooperation
- E. Interaction with Peers: Negotiation
- F. Adaptive Social Behavior
- G. Adaptive Social Behavior: Group Settings
- I. Adaptive Social Behavior: Empathy
- J. Appreciating Diversity
- K. Self-Concept
- N. Self-Control
- O. Self-Control: Feelings and Impulses

Domain III: Approaches to Learning

- A. Curiosity and Interest
- B. Initiative
- C. Persistence and Attentiveness

- D. Creativity and Inventiveness
- E. Reflection and Interpretation

Domain IV: Cognition and General Knowledge

- A. Causation: Children demonstrate awareness of cause and effect
- C. Critical and Analytic Thinking: Children use past knowledge to build new knowledge
- H. Measurement: Children demonstrate knowledge of size, volume, height, weight, and length
- K. Scientific Thinking: Children collect information through observation and manipulation
- L. Scientific Thinking: Children engage in exploring the natural world by manipulating objects, asking questions, making predictions, and developing generalizations
- M. Scientific Knowledge: Children observe and describe characteristics of living things
- N. Scientific Knowledge: Children Observe and describe characteristics of the earth
- S. Geography: Children demonstrate awareness of location and spatial relationships
- T. Geography: Children demonstrate knowledge of the relationship between people, places, and regions
- V. Ecology: Children demonstrate awareness of the relationship between humans and the environment

Domain V: Language, Communication, and Literacy

- B. Receptive Vocabulary
- C. Expressive Vocabulary
- D. Grammar and Syntax
- E. Comprehension
- F. Expressive/Oral Language
- G. Listening Skills
- H. Oral and Written Communication

I. Conventions of Social Communication

Materials:

- Ants
- Magnifying glasses
- KWL chart
- Marker

Procedure:

- 1) Tape up the KWL chart to be filled out.
- 2) Gather the children together at the meeting area to have a discussion about ants.
- 3) Ask the children what they know about ants.
- 4) Write their responses in the K (what we know) section of the chart.
 - a. Encourage them to describe where ants live, what they look like, what they eat, how they move, etc.
- 5) Then tell the children that they are going on an ant hunt to find ants.
- 6) Ask the children what questions they have or what they want to know about ants.
- 7) Write their responses in the W (what we want to know) section of the chart.
- 8) Give the children some rules and reminders before getting ready to leave the classroom:
 - a. Tell the children that if they want to touch the ant, they have to be very gentle so they do not hurt them.
 - b. Show and explain to the children how to lay their hand flat on the ground so the ant can crawl onto their hand.
- 9) Get the children ready to go on an ant hunt.
- 10) Take the children for a slow walk outdoors where they will be able to find free roaming ants on the sidewalk or under rocks.
- 11) When you find ants, tell the children to get down on the ground with their magnifying glass to learn about the ants.
 - a. Take pictures of the children as they are using their magnifying glass to investigate and learn about ants.
- 12) Give children sufficient time to observe the ants.
 - a. Guide their observations by asking:
 - i. How does the ant move?

- ii. What color is it?
- iii. What does it like to eat?
- iv. Where does it live?
- v. What does it look like?

13) Record their responses on an anecdotal note.

14) Continue on your walk to look for more ants.

15) Ask the same questions stated above when find more ants.

16) Fill out the L (what we learned) section on the chart when the children are finished learning about earthworms.

Extension:

- Take paper plates outside with potential ant food on them (ripe fruit, bread, meat, cheese, grass, etc.). Make predictions on which foods the children think the ants will eat and then observe the ants.
- Have the children paint thumbprint ants. When it dries, have them draw on legs and antennae.
- Put sand in a sensory table with a small amount of water. Let the children build ant hills in the sand. Give them pencils to push into the ant hill to create tunnels.

Assessment:

Photographs: Take photographs while the children are using the magnifying glasses to investigate and explore ants. The photographs will allow you to capture all the investigations that the children are doing to learn about ants. You will be able to see if the children are holding the magnifying glass in the proper position to see the ants clearly.

Anecdotal Notes: Take notes on the discussions the children have about the ants; especially if they are discussing characteristics about the ants. Also take notes on vocabulary, language, and describing words the children use during discussions. These anecdotal notes will allow you to assess what information each child is learning about ants and will inform you if any of the children need more experiences with ants to learn about them.

Summer

Trees

Title: Tree Journal (continued)

Student Learning Objectives:

Students will be able to:

- Identify at least 6 parts of a tree (trunk, branch, twig, root, leaf, crown)
- Construct (draw) at least 6 parts of a tree (trunk, branch, twig, root, leaf, crown).
- Predict what the tree will look like/happen next season (fall)

Alignment to Standards:

New York State: Early Learning Guidelines

Domain I: Physical Well-Being, Health, and Motor Development

- B. Fine Motor Skills
- I. Safe Practices
- J. Rules and Self-Regulation

Domain II: Social and Emotional development

- B. Interactions with Adults: Children Seek Assistance from Adults
- D. Interaction with Peers: Cooperation
- E. Interaction with Peers: Negotiation
- F. Adaptive Social Behavior
- J. Appreciating Diversity
- K. Self-Concept
- M. Self-Efficacy
- N. Self-Control
- O. Self-Control: Feelings and Impulses

Domain III: Approaches to Learning

- A. Curiosity and Interest
- C. Persistence and Attentiveness
- D. Creativity and Inventiveness
- E. Reflection and Interpretation

Domain IV: Cognition and General Knowledge

- B. Critical and Analytic Thinking: Children compare, contrast, examine, and evaluate experiences, tasks, and events
- C. Critical and Analytic Thinking: Children use past knowledge to build new knowledge
- E. Representational Thought: Children use symbols to represent objects
- G. Number and Sense Operations: Children demonstrate knowledge of numbers and counting
- H. Measurement: Children demonstrate knowledge of size, volume, height, weight, and length
- I. Properties of Ordering: Children identify and label shapes
- K. Scientific Thinking: Children collect information through observation and manipulation
- L. Scientific Thinking: Children engage in exploring the natural world by manipulating objects, asking questions, making predictions, and developing generalizations
- M. Scientific Knowledge: Children observe and describe characteristics of living things
- N. Scientific Knowledge: Children Observe and describe characteristics of the earth
- P. Geography: Children demonstrate awareness of location and spatial relationships
- Y. Expression and Representation: Children use creative arts to express and represent what they know, think, believe, or feel

Domain V: Language, Communication, and Literacy

- B. Receptive Vocabulary
- C. Expressive Vocabulary
- D. Grammar and Syntax
- E. Comprehension
- F. Expressive/Oral Language
- G. Listening Skills

- H. Oral and Written Communication
- I. Conventions of Social Communication
- J. Reading: Phonological Awareness
- K. Reading: Alphabetic Principle
- L. Reading: Print Concepts
- M. Reading: Comprehension of Printed Material
- P. Writing: Alphabet Knowledge
- Q. Writing Conventions

Materials:

- Crayons (variety of colors)
- Spiral bound notebook (each child)
- Small paper bags (to collect nature items)
- Clear tape (to tape items into their journal)

Procedure:

Note: This lesson should be implemented after several nature walks involving discussions and observations about trees during this season. The discussions and observations should include how things look, feel, smell, sound, differences, similarities, etc. Make sure to include in your discuss that the tree is covered in leaves and what the leaves do to help the tree live. Discuss if the children’s predictions were accurate of what the buds would turn into. Remember to ask the children “Why do you think that” questions, whenever possible, to engage their use of higher level thinking skills.

- 1) Gather materials needed for the nature walk.
- 2) Hold up a child’s nature journal and remind them of the purpose of this notebook:
 - a. This is your nature journal. Inside this journal you have drawn a picture of a tree during the season of fall, winter, and spring. Show them a picture that was drawn. Ask them questions about the trees if you like. Tell them they are going to go on another nature walk where they will go visit the same tree. Let them know that they will have to draw and write about the same tree now that it is summer. Include anything in this conversation that you deem appropriate for each individual child.

- 3) Collect all materials needed in a back pack for the teacher to carry (children's hands should be free of any objects during the nature walk so they can explore items in nature).
- 4) Take the children on a nature walk to the predetermined spot. On your walk there, stop at different trees and have discussions about things they notice (how things look, feel, smell, sound, differences, similarities, etc.) Ask, "Why do you think that" questions, whenever possible, to engage their use of higher level thinking skills.
- 5) When you arrive at your predetermined spot, remind children to sit by the same tree they sat by last time.
- 6) Hand out the small paper bags.
- 7) Tell the children that they can collect items in nature that they find while exploring the area (leaf, pine cone, piece of bark, twig, etc.) Encourage them to find different parts/pieces of a tree.
- 8) Give children about 5 or 10 minutes to collect nature items in their paper bag.
- 9) After collecting nature items, the children should come back to their spot by the same tree they drew before. Remind the children that they can include any of the items they found exploring in their nature journal if they choose to.
- 10) Hand-out their spiral notebooks and crayons.
- 11) Explain the directions (very simple):
 - a. Have the children use their crayons to draw the tree they are sitting by.
 - b. Tell them that you would like to see the different parts of the tree that you have been discussing in their drawing (crown).
 - c. Remind them that you have been discussing the different parts of the tree and how they feel, look, smell, sound, etc.
 - d. Let them know that they can get up to touch the tree to see how it feels, match a crayon to a specific color on the tree, pick a piece of bark off the tree, snap a twig off the tree, pick a bud off the tree etc. (The bark, twig, and leaf can be taped to their paper)
- 12) As they are drawing, walk around to the children and discuss their drawings with them. Point out the specific things that you see in their drawing (crown).
 - a. "What are all these green circles?"

- b. “What are these curvy lines going down to the bottom of your paper?”
 - c. Turn back to their predictions. Discuss if their predictions were correct.
- 13) Assist the children with making predictions about what will happen to the tree next season (fall) and why they think this will happen. Record their predictions in their journal. Give children a prompt (refer to fall tree) to assist them in their predictions.
- 14) Before allowing the children to put their notebook away. Encourage them to go look at the tree one more time to see if there is anything else they want to include in their drawing.
- 15) When the children are finished constructing their summer tree, allow them to go collect more nature items to put in their paper bag or just go play in the surrounding area.
- 16) The children can carry their paper bags back to the classroom to have nature items in the classroom to investigate.

Extension:

- Go on a nature walk, the following week, back to the same tree the children drew and discuss any changes that have happened. Have them collect more nature items. Did they collect anything new? Is anything new growing? Dying?
- Have children label the parts of the tree that they drew.
 - “Can you write the word *leaf* next to the tree bud that you drew?”
 - Remember that I wrote the word *leaf* for you before. Do you remember where that was so you can go copy it?”
- Create another bark rubbing of the same tree. Discuss the shapes the children see in the bark, how it feels, what colors they see, any changes they see from last time etc.
- Pick a leaf off a tree and show the children how to create a leaf rubbing. Discuss the parts of the leaf (vein, stem, point, lobe, etc.) Encourage them to draw these parts of the leaf in their notebook.
- Paint with leaves
- Paint with items from their paper bag
- Pick some different flowers and bring them into the classroom. Watch and observe the flowers as they grow. Make predictions on how tall they will get.

- Paint with flowers

Assessment:

Observation & Anecdotal notes: Observe the children outside and take notes on any behaviors, language skills, social skills, motor skills, etc. that you deem necessary for each individual child. Write down specific quotes that the children used outside while collecting nature items or while drawing. Try to notice new developments that the children are engaging in: new pencil grip, more complex sentences, expanded vocabulary (buds), etc.

Make an anecdotal note on the child's drawing stating the prediction they made about what will happen to the tree. You can write it on the back of their drawing if there is no room on the front. Read each word aloud to the child as you write it. Take note if they referred back to their fall tree to make a prediction. After given a prompt, were they able to make an accurate prediction?

Work Sample: The children's drawing of a tree is a concrete example of their learning at this stage of development. Use this work sample to compare to their previous work samples (fall, winter, and spring). Notice if the child used more details while drawing the tree or if the child understands a new concept or skill (a leaf is on the end of a twig). You should see some additional growth between the spring tree and summer tree work samples. An extensive amount of growth should be seen between the fall tree and the summer tree work samples. This collection of work samples should show the learning, growth, and achievement that each individual child had during this school year.

Summer
Using Your Senses

Title: Smell the Flowers

Student Learning Objectives:

Students will be able to:

- Use their senses to explore how flowers: smell, look, feel, and sound.
- Use at least one of their senses to describe a characteristic of a flower.

Alignment to Standards:

New York State: Early Learning Guidelines

Domain I: Physical Well-Being, Health, and Motor Development

- A. Gross Motor Skills
- B. Fine Motor Skills
- C. Sensorimotor Skills
- E. Physical Fitness: Variety and Well-Being
- I. Safe Practices
- J. Rules and Self-Regulation

Domain II: Social and Emotional Development

- B. Interactions with Adults: Children seek assistance from adults
- C. Interactions with Peers
- D. Interactions with Peers: Cooperation
- E. Interaction with Peers: Negotiation
- F. Adaptive Social behavior
- G. Adaptive Social Behavior: Group Activities
- J. Appreciating Diversity
- N. Self-Control
- O. Self-Control: Feelings and Impulses

Domain III: Approaches to Learning

- A. Curiosity and Interest
- B. Initiative
- C. Persistence and Attentiveness
- E. Reflection and Interpretation

Domain IV: Cognition and General Knowledge

- A. Causation: Children demonstrate awareness of cause of effect
- B. Critical and Analytic Thinking: Children compare, contrast, examine, and evaluate experiences, tasks, and events
- C. Critical and Analytic Thinking: Children use past knowledge to build new knowledge
- D. Problem-Solving: Children find multiple solutions to questions, tasks, problems, and challenges
- K. Scientific Thinking: Children collect information through observation and manipulation
- L. Scientific Thinking: Children engage in exploring the natural world by manipulating objects, asking questions, making predictions, and developing generalizations
- M. Scientific Thinking: Children observe and describe characteristics of living things
- W. Community: Children demonstrate civic responsibility

Domain V: Language, Communication, and Literacy

- B. Receptive Vocabulary
- C. Expressive Vocabulary
- D. Grammar and Syntax
- E. Comprehension
- F. Expressive/ Oral Language
- G. Listening Skills
- H. Oral and Written Communication
- I. Conventions of Social Communication

Materials:

- Flowers

Procedure:

- 1) Take the children outside for a walk to look at flowers.
- 2) Have the children pick a flower.

- 3) Discuss with the children how the flowers sound.
 - a. “Can you hear the flowers?”
 - b. “What sound does the flower make?”
 - c. “My flower does not make any sound.”
 - i. Record the children’s responses on an anecdotal recording sheet.
 - ii. Take pictures of the children as they are listening to the flowers.
- 4) Have the children gently touch the petals of the flower.
 - a. “How does the petal feel?”
 - b. “The petal feels soft.”
 - i. Record the children’s responses on an anecdotal recording sheet.
 - ii. Take pictures of the children as they are touching the petals of the flower.
- 5) Have the children smell the flower.
 - a. “What does the flower smell like?”
 - b. “The flower smells fragrant.”
 - i. Record the children’s responses on an anecdotal recording sheet.
 - ii. Take pictures of the children as they smell the flowers.
- 6) Explain to the children that they are not going to taste the flower because it is not edible.
- 7) Have the children look closely at the flower.
 - a. “What does the flower look like?”
 - b. “What colors do you see?”
 - i. Record the children’s responses on an anecdotal recording sheet.
 - ii. Take pictures of the children as they are looking at the flower.
- 8) Let the children play in the area near the flowers.
 - a. Observe the children to see if they are engaging more of their senses while playing near the flowers.
 - b. Take pictures of the children as they are using their senses with the flowers.
 - c. Record any additional discussions the children have about how the flowers feel, sound, smell, and look.

Extension:

- Teach the names of the different flowers to the children.
- Plant some flowers and watch them grow. Discuss the stages/changes that happen to the flower.
- Count the petals on the flowers and the leaves.
- Have children learn the distinct smell of 3 or 4 different flowers. Then, have them close their eyes and see if they can guess which flower is which by smelling it.

Assessment:

Photographs: Take photographs of the children while they are using their senses to explore flowers. You can use the photographs to pair with the anecdotal notes you took to show how the children are learning to use their senses to explore flowers. Photographs allow you to capture the children's facial expressions as they are exploring the flowers. The children may have a certain facial expression they use when they feel something soft, when they smell something fragrant, when they see something beautiful, etc.

Anecdotal Notes: Record the exact sentences and comments the children are using while using their senses to explore the flowers. The anecdotal notes will allow you to assess which students understand how to use their senses to describe characteristics of flowers.

Discussion

Final Curriculum

My final curriculum project does match my research question and initial design for the project. My goal in this project was to decrease the disconnect that young children have with the natural world by providing nature-based learning experiences for preschool aged children. The learning experiences immersed preschool aged children in their local, natural surroundings, through hands-on experiences with nature. By having the children go outside and engage in activities that are developmentally appropriate, the children were able to continue to learn and have developmental gains as an extension of their learning inside in the classroom. My project has followed these guidelines with the 16 learning experiences that I created for preschool aged teachers to use as a resource. Teachers can use these learning experiences to provide more meaningful experiences for young children with the natural world, and hopefully increase their understanding of nature-based experiences in their preschool curriculum.

Next Time

If I were to do anything different next time, I would include more lesson plans for each season of the year. For example, I would like to include more lesson plans in the Nature-Based Art sections of the learning experiences because there is an abundance of nontraditional paintings tools that you could find in nature. One idea would be to paint with twigs that have fallen off the trees in the fall.

Another thing I would do differently would be to include take-home activities for the children to do with their parents and families so their learning would be extended at home. These activities would be completely voluntary and would not require the parents to purchase anything. One idea would be to have the children find a spider web in their house with their

parents and then draw the spider web on a piece of paper. Then, have the child find the spider that lives in the web and draw that too. Then, have the child watch the spider and the parent will record the response of their child about what they think the spider is doing.

Another thing I would do differently would be to add a Music and Movement section to each of the seasons. Children enjoy singing songs they know and learning new ones. Therefore, this section would include songs and some type of movement that requires the children to dance or perform actions which reinforce song lyrics or imitating how an animal moves. By including two or three songs about each topic, children would be able to use new vocabulary and improve their ability to pronounce these new words. Movement would help a child understand what his or her body can do and would allow for them to express their ideas and feelings. One idea would be to have the children march around the room to the song, “Ants Go Marching One by One.”

Implications of this project

This project will be used by the preschool teachers at the Chautauqua Lake Child Care Center, which is located in the Chautauqua Lake Central School District. I will start by distributing this project to the pre-k teachers at the Chautauqua Lake Central School District. Then I will continue to distribute this project to other pre-k teachers in the surrounding school districts.

I will also teach a workshop in Chautauqua County to teachers on how to use this project in their classroom. In the workshop, I will include hands-on activities for the participants to show them how to implement the learning experiences that are in the project. I will provide them with an overview of the curriculum and sample lesson plans that they will be able to use in their classroom.

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Appendice

Anecdotal Record Sheet

<p>Name: _____ Date: _____</p> <p>Activity: _____</p> <p>Comments:</p>	<p>Name: _____ Date: _____</p> <p>Activity: _____</p> <p>Comments:</p>
<p>Name: _____ Date: _____</p> <p>Activity: _____</p> <p>Comments:</p>	<p>Name: _____ Date: _____</p> <p>Activity: _____</p> <p>Comments:</p>