Playing, Plotting & Potatoes

Preschoolers Learning in the Garden

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"Can we play in the garden yet?" asks Annabelle*. We are spending all of choice time in our outdoor classroom today. At morning meeting we explained that we would be working in the garden and making a map of our garden bed just like real farmers do. We have been outside for less than five minutes, and Annabelle is eager to get started.

This bucolic scene is playing out at the Sustainability Academy at Lawrence Barnes (SA) in the city of Burlington, Vermont. SA is the country's first sustainability-themed magnet school for grades Pre-K–5. The Burlington School District is one of the most diverse in the state, with 62% of students qualifying for Free Lunch, 16% receiving English Language Learner services, and 14% receiving special education services (BSD Annual Report). Approximately 240 of these students attend the Sustainability Academy. At the Sustainability Academy, there are 14 languages other than English spoken as first languages in this diverse community, which is a federal refugee resettlement area.

Even though this is our first day plotting our garden, the preschoolers at SA have a pretty firm grasp of what a map is. The past couple of weeks we have been talking about maps, looking at them, and following along on a map as we took neighborhood walks. To underline the representational aspect of maps (which can be a fairly abstract concept for preschoolers), we have been playing with penny maps. To do this, we made a tabletop map of the classroom. One child places a penny on the map. Then, a different student takes another penny and puts it in the location in the classroom as indicated on the map. The other students then locate the "hidden" penny.

Today, we will use their burgeoning map knowledge to map the garden bed in our outdoor classroom. We start with the pieces I have assembled — a large, laminated drawing of an empty garden bed and a drawing of our rhubarb plant and strawberry patch (the plants that have overwintered and are currently growing).

*children's names have all been changed.

Hushmi places her drawings of worms on the map.

We bring the map over to the bed. "OK," I say, laying everything out. "Where is the rhubarb?" Right away Hushmi points it out. "It goes here," she says, pointing to the lower edge of the bed. Yam notices the strawberries growing on the other side of the bed. "What this?" he asks. I tell him that they are strawberries and that he can draw a picture of them for our map if he would like. "I draw these. Strawberries," he says, sitting down, picking up a clipboard, and getting right to work.

While Yam is carefully drawing, Annabelle is bursting to get her hands in the dirt. We look at the map and look at the garden bed and discuss where would be a good spot. I know that her family gardens at home, so she is a seasoned transplanter. We pop a nasturtium out of its sprouting pot and she starts digging a hole for it. While she is working, I ask Hushmi if she could draw a picture of the nasturtiums on paper I brought out. "I can't draw that!" she exclaims, looking at the plant. We talk about the shape of the leaf and agree together that a green circle would be a reasonable representation of the nasturtium because of its round leaves.

Yam draws strawberries for the map.

As Hushmi and Yam finish their drawings and find the appropriate place for them on the map, they are eager to join Annabelle in the planting. Nila comes over to help enthusiastically, clumsily and full of confidence in the way only Nila can be. Plants get smushed, we have to move some things around on the map, but everyone is happy. After a few minutes, Yam runs off to play with some other children. Hushmi notices something missing from our map. "What about worms? I'm going to draw worms," Hushmi declares.

Throughout the rest of the session, a number of other students come over to plant and interact with the map. Abdi shows off his potato drawing, and Meredith, who is a very young three-year-old, investigates the map, pointing at each object. Abdul and Diego join in the planting and watering and place green circles on the map when they finish their planting. Abdi comes over towards the very end of the day. I explain there are no more flowers for him to plant right now, but we talk about the map. I tell him next week we will be planting some vegetable seeds, and he can help us do that. He grabs a clipboard and draws a simple circle on his paper. "A potato", he explains. It's what he hopes we will plant in the garden.

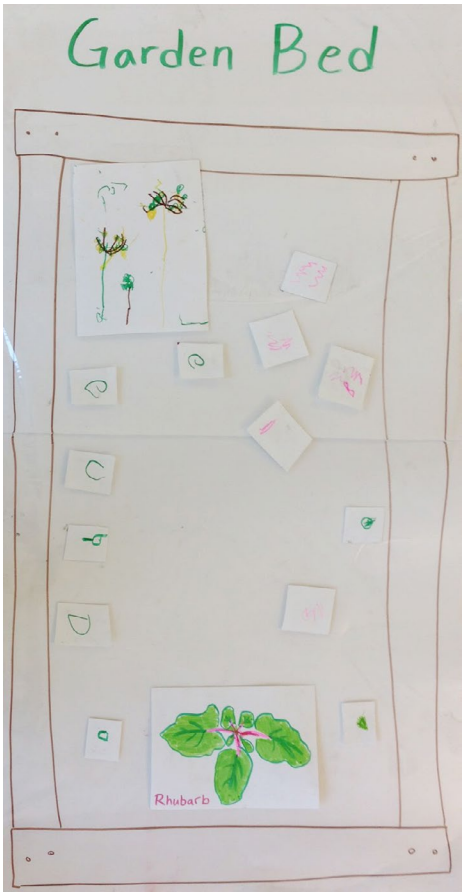
EFS can take many different forms in the preschool classroom; we are always trying to integrate it into our curriculum and our days in myriad ways. The mapping exploration was

EFS as a Lens

EFS doesn't feel like "just one more thing" that we have to cram into our day. Instead, it feels like a lens I can peer through while planning curriculum and carry around in my back pocket while teaching. The connections to EFS can also happen spontaneously: I'll often come up with an idea or follow some thread emerging in the classroom and then go back and see how it connects to EFS, which will in turn spark an idea for continuation. It is a reminder of the larger context, the groundwork we are laying for concepts that will continue to emerge and ultimately, hopefully, enable our students to become better citizens of the world. In many cases, it fits in and enhances what we are already doing. To illustrate this point, below I have included how the various things that transpired during the map-making connect with the Vermont Early Learning Standards.

— Kestrel

Vermont Early Learning Standards	Alignment with Garden Map-making
I. APPROACHES to LEARNING DOMAIN	
2. Curiosity and Initiative Goal, Indicator A Demonstrate an eagerness and interest in learning through questioning and adding ideas.	Working through how to draw the nasturtium, adding the potato drawing, adding the worm drawings.
4. Self Organization Goal, Indicator C Follow through to complete tasks and activities.	Finding the strawberry, drawing it, adding the strawberry drawing to the map.
III. LANGUAGE, LITERACY, COMMUNICATION DOMAIN	
5. Early Writing Goal, Indicator D Use scribbles, shapes, letter-like symbols and/or letters to write or represent words or ideas.	All of the drawing for the map.
IV. MATHEMATICS DOMAIN	
3. Geometry and Spatial Sense Goal, Indicator B Use language to understand the arrangement, order, and position of objects such as: behind, on top of, next to, below, underneath, beside, in front of, etc.	Discussion while placing pictures on map.
V. SCIENCE DOMAIN	
1. Play Goal, Indicator D Investigate different natural habitats.	Planting in the garden, digging in soil.
2. Scientific Knowledge Goal, Indicator A Collect, describe, and learn to record information through discussion, drawings and charts.	Making the map.
VI. SOCIAL STUDIES DOMAIN	
2. Spaces and Geography Goal, Indicator B Begins to create simple representations of their physical environment	Map making



Our map after the first day.

a bit of an experiment this year. It went better than I could have anticipated. It reinforced for me that maps are something that children want to engage in and are able to make on their own. They also gave our class a new way of interacting with the garden and outdoor space.

WHY GARDEN MAPS WITH FOUR-YEAR-OLDS?

David Sobel

In a typical early childhood gardening activity, children will identify overwintering plants, engage their senses, get their hands dirty and participate in the cycle of life. It's spring, the sap is flowing, the worms are wiggling, things are right with the world. Isn't this just fine the way it is? Why complicate it by adding in a mapping component?

There are at least three good reasons for introducing maps into this equation. Of course, from an EFS perspective, the whole point of young children gardening is that it's one way to set them on a path of growing their own food, becoming self-sufficient, living a healthy lifestyle. But good EFS curriculum aspires to cultivate both citizens *and* academic skills. How does that happen here? First, simple maps use a pictorial symbolic language that children understand. The green circle is a nasturtium, the more oval brown circle is a potato. There's a clear connection between the drawn two-dimensional picture and the plant or the vegetable itself. These are the early stages of the reading and writing process. Children are learning that shapes drawn on paper represent things in the real world—an important foundation for understanding that letters represent sounds.

Second, they're developing skills in spatial organization. Three- and four-year-olds are actively starting to understand how the world is organized around them. They're learning where the friendly dog lives in the house at the corner, where the apples fall onto the sidewalk near the park, where their grandmother takes them to buy juice at the market. They're piecing the world together around themselves, like putting together a puzzle, creating the beginnings of mental maps. Making a garden map gets them problem-solving at just the right scale for their young brains. They can see the whole garden bed in their purview and they can see the whole of the garden bed representation on the map, just smaller. One represents the other and it's a developmentally appropriate challenge to figure out that if the strawberries are up here by the rhubarb in the garden bed, where should we place them on the map? They're roughing in their understanding of how to represent the real world on paper.


Meredith explores the map.

Third, mapmaking has an inherent appeal for many children. Observe children in natural play around the world and they do the same things over and over. They make dens and forts, go on adventures, craft small worlds, find shortcuts,

and make maps of the places that intrigue them. Maps are a visual language rooted in our hunting and gathering heritage. Children used to sketch maps in the dirt to show where the crayfish hid in the stream, where the best berries grew, or how to avoid the ground wasp nest on the trail. Maps are one of the languages of childhood. Giving children opportunities to make maps translates their inner impulses into fruitful learning. Note how Hushmi feels compelled to make the picture complete. "What about the worms? I'm going to draw worms!" If there are worms in the garden soil, then there need to be some squiggly lines on the map to represent their presence.

When the map goes inside, it can be used to discuss planting ideas when it's raining outside. Children and teachers can try out alternative plans — should the strawberries stay here by the rhubarb or would they be better over here by the lettuce where they'll get more sun? How many different peas can we plant in this row if they're supposed to be planted two inches apart? Look through these garden catalogues and cut out pictures of flowers we might like to have in the garden. Show me on the map where we could plant them. The map becomes the dream that the teacher and children create together.

THE ROLE OF EFS IN CREATING A CLASSROOM COMMUNITY

Ruth Kagle
Head teacher in the classroom

The pedagogical traditions of early childhood education embrace child- and family-centered practices, and holistic, experiential and interdisciplinary learning. These longstanding practices create a natural foundation for EFS in the preschool classroom. As young children are supported in developing a positive sense of self and healthy relationships within the classroom, they are learning what it means to engage as caring, responsible members of a community beyond their family. As they learn to emotionally self-regulate and to share and care for classroom resources, young children engage in very concrete ways with issues of equity, fairness, and justice. When children discover that food is something that they can grow and harvest, and experience the natural world as a place of discovery, sensory pleasure, and a home that we share, they begin to develop the emotional connections and foundational understandings for environmental stewardship. When children grind corn and wheat to make bread and then visit local markets and bakeries to find different kinds of breads, learning is meaningful and connected to the cultures and community in which they live. Whether recycling and composting after snack time, sorting clothing for a winter clothing drive, chopping vegetables to make soup, exploring snow and ice in the winter, or planting a spring garden, young children demonstrate that they are competent community members capable of solving problems, doing authentic work, asking meaningful questions, and contributing to the well-being of a sustainable community.

RESOURCES

Cultivating Joy and Wonder: Educating for Sustainability in Early Childhood Through Nature Food and Community. Linda Wellings and Emily Hoyler, 2013. www.shelburnefarms.org/our-work/resources/cultivatingjoy-andwonder

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