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Teaching about the Soil in the GMS Garden

The key to a bountiful garden, from tender greens to ruby red strawberries, starts from the ground up. The soil is the essential element of the overall landscape, along with water and sunshine. At Greensboro Montessori School (GMS), we teach the students the fundamentals of the soil and those creatures that call it home (where would we be without the earthworm?).

Getting your hands dirty

At the beginning of the 2003-2004 school year, the elementary students, fresh from summer vacation, were somewhat reticent about touching the soil, even with gloved hands. Indeed, it was not uncommon to hear them exclaim “Don’t touch me!” when approached by anyone with soil particles covering their hands. Gradually, as the garden’s fruits enticed them and the prospect of planting seeds of their own grew irresistible, even the most skeptical came around. This has taken an entire year to develop, two seasons of growing, planting, and harvesting, and a season of rest.

The perfect recipe for good soil

One of our most archetypal garden activities has been that of sowing seeds. Before planting, we would observe the soil, posing questions like “What color is it?” or “What does it feel like?” or “Do you think plants can grow here?” More often than not, the soil was reddish and overly moist, indicating a high clay content. Our remedy was to add a few inches of rich, black leaf mould. Here was our chance to experiment and learn. It was necessary to combine the existing soil with the mould, but not so extensively as to undermine the soil structure. To truly get a feel for what we were doing, I would explain

to the children that we were helping the earthworms do one of their jobs, to churn the soil. While encouraging them to experience vicariously the world of the earthworm, I also used this as an opportunity to launch into a mini-lesson about the earthworm.

The denizens of the soil

Earthworms have been referred to by Ross Mars¹ as “nature’s gardeners.” And rightfully so. No matter how hard we work in the garden, we could never accomplish a fraction of what the earthworms do. They fertilize the soil with their castings (earthworm-poop), their tunnels allow air to enter the soil and give roots growing room, and they decompose the leaf mould and other organic matter. Working with the soil gave the students true hands-on knowledge of earthworms. While sowing seeds the kids inevitably unearthed a menagerie of the worms while digging and let out squeals of delight. Reciting facts from a textbook is bland in comparison.

And why so many worms in a spring garden? “Leaf mould,” I’d explain. “Remember when we laid down a ‘blanket’ of leaf mould during the winter weather to keep the soil (relatively) warm? We did that because worms like it neither too hot nor too cold.” I’d also explain that the mould provided the worms with food, an additional incentive to stay and raise a worm family. In the end, the worms did the work and it has been our privilege to interact with them in their native habitat. Students and earthworms make for an tremendous learning experience in the permaculture edible garden.

¹ 1996. *The Basics of Permaculture Design*. Hovea, Washington: Candlelight Trust.