

A Visit to Brighton High

By Barbara McLaughlin

We visited Juliet Parry's ELD I and II Science class at Brighton High School on October 28th to learn how she and her students are using the outdoor learning space to enhance the curriculum. The students in her class speak four different languages and many have experienced periods of interrupted schooling over the years. They welcomed us to their classroom.

The focus of Ms. Parry's lesson was the process by which water and nutrients enter plants. She began by having students compare the nutrition data for a banana with that of Miracle-Gro. She asked them, "What do you notice? What do you think? What do you wonder?" Students noted that the ingredients were very different. She called their attention to the main ingredients in the plant food: nitrogen, phosphate, and potash and wrote their chemical notations. She then asked how they thought roots absorb water and nutrients from the soil and she did an experiment to illustrate this process. She put clear water into a small cup with tiny holes and placed it into a larger container of blue water. Students noticed that the water in the small cup was turning blue and they discussed why they thought that was happening. She displayed three charts, one showing particles of greater concentration moving to lesser concentration, one showing movement of particles from lesser to greater concentration, and one showing equal movement in both. Students discussed which chart they thought represented what was happening in the experiment. Ms. Parry told them that this process was called diffusion. Occasionally students responded in French and she was able to rephrase their responses in English.

Before going outside to their garden space, Ms. Parry reviewed how to set up a grid and told them that they would do this to mark their two garden plots outdoors. Once they had marked out the coordinates of their plots, students donned their garden gloves and got to work. One group mixed plant food, compost, and coffee grounds and worked it into the soil of their plot using small tools or their hands to work it into the soil for fall and spring planting. One student clearly had a lot of experience in working with the soil as he had worked on his family farm in Yemen. The second group planted two large sedum plants in designated spots on their grid. There was a lot of conversation around how much dirt should be removed to make room for each plant. Ms. Parry showed us the different plants and trees that have been planted next to the plots and described

the flowers that had grown in the garden over the spring and summer. She said that her 9th and 10th grade students had planted daffodil bulbs three years ago on the other side of the building. On the way back inside, she pointed out the row of pots with colorful flowers that they had planted to enhance the entrance to the school.

Back in the classroom, Ms. Parry returned to the experiment. She asked students to predict what the water in the two cups would look like after the elapsed time. A student correctly predicted the cups would look similar in color. Ms. Parry explained the particles moving back and forth had created a balance or equilibrium.

We had the opportunity to meet with Ms. Parry after the lesson. Her dedication to her students and love of her subject matter animate her work as a teacher. In addition to the support she receives from *Friends of the Boston Schoolyards*, she explores resources from other groups such as *Seeds of Solidarity* and *Nutrients for Life* which seek to increase agricultural output and foster food equity. She also works with *MIT Climate Action Through Education (MIT CATE)*, an organization that works with teachers to develop interdisciplinary, modular, standards-aligned climate change curricula for U.S. high school teachers. In March, the class will begin visiting the garden every week and take sketches and make notes of the changes they see.

She also has these same students for a Humanities class each week and she seeks to provide a context for what they are learning in science, as well as to deepen their reading skills. They are currently focusing on water and climate justice. She introduces a topic question and provides them with an action plan to solve it. Their December engineering project will be building water filters.

When asked why she decided on an outside classroom, she responded that she wanted to “be the change you wish to see.” And she said, “starting the garden felt like putting little time bombs of smiles and joy in people’s path.” She said that students who are learning a new language can sometimes lose their self-confidence and she believes that being out in nature helps them to find that again. We certainly saw that during our visit.