Hands-on Soil and Plant Science Learning Experiences for Visiting K-12 Students. (A01-cunningham105820-Poster)

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Abstract:

Our objective was to design and implement an interactive program whereby young students visiting Purdue University on field trips could experience plant and soil science and depart with a better appreciation for the role agriculture plays in their daily lives. Hands-on experiments introduce physical and textural properties of soil. Students learn how soil interacts with nutrients through the negative charge of clay particles and organic matter. Soil monoliths are employed to illustrate poor- or well-drained soils, to determine soil age, and to learn about plant ecosystems from which the monoliths were obtained. As the students tour field research stations the role of soil in wetlands, agricultural, and urban environments are discussed. Plant science is introduced through hands-on experiments using corn, starch gels, and iodine indicator. Students have the opportunity to see enzymes in action, and learn the role enzymes play in seed germination and food digestion. The uses of corn starch and its sugar end-products in the food industry are discussed. Students crop seeds and examine the developing plants to determine whether they are monocot or dicot in origin. A simple game using labeled cards to represent genes introduces students to genetics.

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