Director’s Corner: Exploring Science

To say “exploring science” is almost redundant in that science essentially IS exploration. According to the online dictionary, science is “the intellectual and practical activity encompassing the systematic study of the structure and behavior of the physical and natural world through observation and experiment.” Furthermore, the University of California’s Understanding Science web site (http://undsci.berkeley.edu/article/whatisscience_01) advocates viewing science as a process that is an exciting, useful, and ongoing global human endeavor because what we learn as we explore the amazing world in which we live raises new questions for investigation. For young children, we start with exploring the science of everyday experience, including our own bodies, our food, our clothing, our pets, etc. Remember that we start with “I notice ___, I wonder ___, I think ___, and (after trying something) I learned ___”.

Babies explore everything with their mouths because that’s where they have the strongest sensations and best motor control. So, when I introduced my granddaughter to bubbles or bingo markers or chalk, her first exploration strategy was to put each one in her mouth. Similarly, snow, leaves, grass, dirt, and rocks from outdoor explorations go straight to the mouth. Gradually, she begins to explore other options as I directly tell her that those things are not for eating, model other interesting activities, and allow her to explore, even when it means a lot of mess.

For preschoolers and kindergartners who have developed more self-regulation, better motor skills, and much better receptive and expressive language, we can begin to deepen the explorations with discussions of science concepts and more purposeful experimentation. For example, the kindergartners have been exploring eggs and today are comparing raw and hardboiled eggs. Which weighs more? Floats? Spins better? We invite them to use what they know to hypothesize explanations for the observations and, sometimes, offer scientific principles, such as that the raw egg wobbles more because its center of gravity changes as the white and yolk move inside the shell.

Similarly for the preschoolers, a variety of opportunities for safely exploring water this month are fostering new interests related to life, earth, and physical science. The educators support this learning in many ways, ranging from simple acknowledging progress, to modeling techniques, to explaining principles. Throughout the process, explorations also strengthen children’s 1) confidence and capability for independent investigation, 2) ability to cooperate and negotiate with peers, 3) effectiveness of communicating their ideas, 4) comfort with multiple attempts and handling challenges, 5) safe self-regulation of motor skills, and 6) creative expressions through art and music. In just such a way, kindergartner Rory mastered the giant bubble challenge at the Spring Science Spree with similar concentration to Lucia’s above.

Through my series this year, I’ve invited you to consider the question, “Why Explore?” Perhaps I’ve convinced you that there are vast developmental benefits for building important skills in all domains. More than that, explorations foster a positive and proactive approach to learning. Children begin to view themselves as capable and critical thinkers whose discoveries are meaningful to themselves and their communities. Let’s continue our partnership to support their growth. Best wishes for broad and deep learning as you continue to encourage exploration adventures with your children!