

## **ECEs: Helping Children to Find Science Everywhere**

As you quickly wipe up the spill around the water play table, the children continue to splash and spill everywhere. They pour water from cup to cup, watching as the water trickles down their arm and onto the floor. With the spill temporarily cleaned, you walk away. What you have just missed is the perfect opportunity to explore the world of Science<sup>1</sup>.

How often do we, as educators, unknowingly stumble upon scientific principles and just let the chance for learning slip away? If you walk around your school, you will notice science and technology at work in virtually every room – the lights, the windows, the carpeting, the telephone, the CD player, the toaster, the toilet, the riding toys, the slide...Science is evident in most everyday activities. While baking cookies, you are exploring mixtures and solutions, changes of state (a liquid to a solid), heat and energy. Watching a snowman slowly disappear as the weather warms demonstrates the principle of melting. Picking up a rock and observing what is underneath is a lesson in natural science. Wearing shoes while climbing a climber is a lesson in traction and friction. Science is the world around us.

With this in mind, it becomes important to instill positive attitudes about Science in children. Scientists believe that all children should learn about science and technology in order to grasp the complexities of our modern high-tech world. But how soon should we introduce Science to children? Renowned environmentalist, David Suzuki, believes that “most kids have their ideas about science shaped by the time they are through preschool”. Jean Piaget’s theory of cognitive development proposes that children, ages 4-5 years, have the capability to understand basic concepts and to solve simple problems. Presenting preschoolers with the opportunity to explore the world around them not only satisfies their natural curiosity, but also aids in their development of skills for investigation and the enhancement of their problem solving capabilities.

Promoting the acquisition of scientific knowledge in preschoolers is a role that Early Childhood Educators should not dismiss lightly. But how do we go about this task? Is providing an enriched environment to explore enough to instill a love for Science in young children? The constructivist theory of learning proposes that children acquire knowledge based on their past experiences. How can we enhance these experiences in terms of Science education? Is it necessary to perform complicated experiments with your children and to explain all the processes involved?

Going back to the water play table, one can use this situation to explore the properties of liquids and the absorbency of materials. Ask guiding questions such as “I wonder why the water runs down your arm?”, “Is the water the same shape in the cup as it is on the floor?” or “What can we use to pick up the spill?”. On a more formal basis, a simple experiment can be done by having the children use different mops to absorb water. Following the basic steps for performing an experiment sets the stage for future learning. Have the children predict what will happen before beginning, observe and record the results and follow-up by providing simple explanations for the results. Verbal explanations should emphasize basic Science concepts, giving the children enough information to satisfy their curiosity, without confusing them with too much detail, while also sparking their interest to learn more.

Early Childhood Educators are naturals in providing enriched preschool environments and in recognizing the opportunities for learning through everyday experiences. We just need to look further to find the underlying Science. The sandbox provides the opportunity to explore the different properties of wet versus dry sand. Painting a picture becomes a lesson in colour

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<sup>1</sup> Our Science includes life and physical sciences, technology, engineering and mathematics.

mixing. A sunny day gives you the chance to learn about light and shadows. Maintaining a school vegetable garden enhances awareness of growth and life cycles, the properties of soil, the technology of tools and the nutritional value of plants.

How much background knowledge do educators need? Do we have to be “rocket scientists” to teach children about Science? No. But we do need to remember to ask questions and elaborate and explain what happens in everyday occurrences. Try not to be intimidated by complicated explanations. If you don’t know, research the answers with the children. Search for the basics. Go to the library and find books on the topic or search the internet for topic related web sites. Share the children’s joy of discovery. The excitement and rewards will be endless. The foundations you give today will be reflected throughout a lifetime. Who knows which child will solve the problems of toxic waste, discover the cure for the common cold or solve the mysteries of galaxies far beyond our own?

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