Natural Scientists

"Children are born natural scientists who are curious and ready to learn. Even in infancy, children compare and contrast objects as they explore their world"

(McHenry and Buerk, 2008).

Building a Brain

- The brain's foundation for all later learning is created in the first three years of life (Sandra Petersen, 2012).
- During the first two years, infants and toddlers master concepts about cause and effect, object permanence, using tools, and understanding spatial relationships and number relations.
- Infants and toddlers need opportunities to explore on their own and during interactions with a caring adult.
- Infants gather information about the world by using both observation and their senses to try new ways to use materials (Meltzoff 2007; Pinkham & Jaswal 2011).
- This information is stored in the brain's circuitry, to be used for building increasingly complex concepts such as developing stories in pretend play. For example, when adults use words to describe activities, they encourage children to deepen their learning experience.
- Share the wonder and joy of discovery through your relationship with the infant or toddler. For example, say, "That little ball squeaks every time you squeeze it."

Planting the Seed of Science: The Five Senses

"Explorations of nature present wonderful opportunities to introduce language and literacy. By providing real objects, we help infants associate words with the concrete objects they represent" (Seefeldt, 2005).

Developing The Senses

The baby connects to you through each one of the senses as they try to figure out how the world works.

SMELL - The sense of smell is one of the earliest to emerge in the fetus. By the end of the 1st trimester, baby can smell foods that mom is eating. Newborns orient themselves by smell more than any other sense.

TOUCH - Touch is the way babies explore their world in utero. During the first few months of life, babies rely on grown-ups for tactile stimulation and comfort. By 4 months, babies can actively touch whatever's nearby. Skin to skin contact feels especially comforting to your baby, particularly if you lay her on your chest. At about 8 months, a baby can touch and identify a familiar object without seeing it.

SIGHT - A baby's ability to see the world develops gradually over the 1st 6 or 7 months of life. By 3 months your baby will be able to fixate on an object, or face with both eyes coordinated. Babies have trouble distinguishing one color from another before 4 months—that is why high contrast toys are better for their eyes. By 7 months, baby's eyesight is mature, and soon after, eye-hand coordination and depth perception have improved to reach for toys. Eye contact with your baby and tummy time are essential for sight development.

HEARING - Babies hear better than adults. They really pay attention to noises outside the womb and recognize mom's voice. At about 2 months, babies begin to respond to their parents' voices and are soon repeating vowel sounds. By about 4 months they start to babble. At a year they begin to say the easiest words like dada and mama.

TASTE - Taste buds are fully formed at birth; newborns prefer sweet over salty. Once babies are ready for solid food, 6 months, they still prefer sweeter tastes of fruits to stronger tasting veggies. Babies are born with about 10,000 taste buds.

Guided Play Encourages:

Exploration

Risk Taking

Vocabulary Development

Continuous Learning

Development of the Senses

Science and Vocabulary

Children observe, listen, feel, taste, and take apart while exploring everything in their environment (Seefeldt, 2005).

- Jean Piaget proposed that children go through four major stages of development. While each stage represents a different cognitive development, it is during the first stage, the sensorimotor stage, in which infants gather information and express their knowledge about the world through their senses and through movement. This stage lasts from birth, to about age 2.
- Parents can cultivate natural investigations with very young children by offering infants objects they can explore and investigate.
- Reading aloud informational books help children learn about things that they might not otherwise notice.
- The illustrations of informational books provide strong support for meaning of new vocabulary.
- Hearing informational books read aloud provides children familiarity with nonfiction text structure.