NOTES ON THE BRAIN

- Infants do not make mistakes. Every action and interaction is a learning experience for infants and toddlers.
- Infants come “wired” to learn and it natural for them to seek out opportunities to learn about their world through their natural curiosity.
- Infants design their own individual curriculum. Teachers must strive to create relationships and environments so that their curriculum can be carried out in a positive manner.
- “Best Practice” has come to be known as what is accepted by noted authorities and research that relationships and environments must be optimum if the infants’ brain is to develop to its’ maximum potential.
- Remediation is possible, but more difficult and more costly.

Important points:

- Adults play an integral part in how the brain is developed.
- How we treat, infants cannot be simplified. Infants’ interest is key in what the child need’s to learn at that exact time. Child is master of his/her own learning.
- Brain is “prewired” but where and how the neurons connect is very much determined environmentally.
- Infants look to trusted adults to get the feedback they need, thus continually programming their brain in the first 5 years.
- Genes are what you get at birth. You start with the synapses.
- When most people think of brain development they reach to the “forebrain” and think only of cognitive development as brain development-----but all areas of the brain must be developed and no one part is less important than the other.
- Environment is the surroundings. Both have huge importance for the development of the total child.
- Experience will depend on how the inherited genes are structured.
- Technology has allowed us to look at the brain in many situations so that we have a clear understanding of what parts of the brain are responsible different domains.
- Stress, in any situation, can effect what parts of the brain will be used. Ones environment and experiences are what determine what of those synapses will be formed and used in later life. It is how the brain will become structure for life.
- Brain is not a single system. Different parts of the brain stores information that can be drawn upon for future needs.
- The brain is different from all other major organs in the body. A heart of an infant is just a smaller version of an adult heart. The brain is smaller, but grows and develops as the body gains and processes information.
- There are critical “windows” for learning ***** BUT the doors do not slam shut. Learning can continue throughout life, but life experiences may shape how this learning takes place.
- Play is GREAT. It is how infants are learning about their world.
- When daily routines focus changes, from care taking to learning, caregiving becomes more interesting, fun, and caregivers may invest more of themselves into the relationship. With this, both the infant and the caregiver benefit. When we turn on the light bulb for the caregiver, their jobs are no longer routine or mundane.
Three main areas of the brain REFER TO DIAGRAM

- Brain stem—lower part of the brain, we have less control over this, things such as heart beating, liver functioning
- Mid brain---Part of brain responsible for emotions, get integrated, attachment. In addition, where brain often goes back to in times of stress. Even to brain stem in which the body is in the survival mode
- Forebrain---Part of brain responsible for abstract logic and reasoning.

MORE - BASIC INFORMATION (just for your information)

- 100 billion brain cells at birth.
- Cells will migrate to where they will function
- Stress during pregnancy and the first 3 years of life may have lasting effect on life. (Use notes on Ghosts from the Nursery by Robin Karr-Morse and Meredith S. Wiley) May use some or all depending on individuals enrolled each semester.
- 1000 trillion connections are made by age 8 months.
- By age 12-13 about 500 trillion. (Others, that are no longer needed or were not developed become dormant)
- Perhaps, in the development of the human species, the human infant was born helpless so that there becomes a social survival. The brain is adaptable. It has 2x the possible brain cells that are needed so that it can adapt to its environment. The brain wires itself on experience.

Brain notes 9.24.03