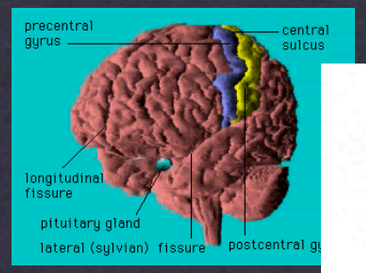
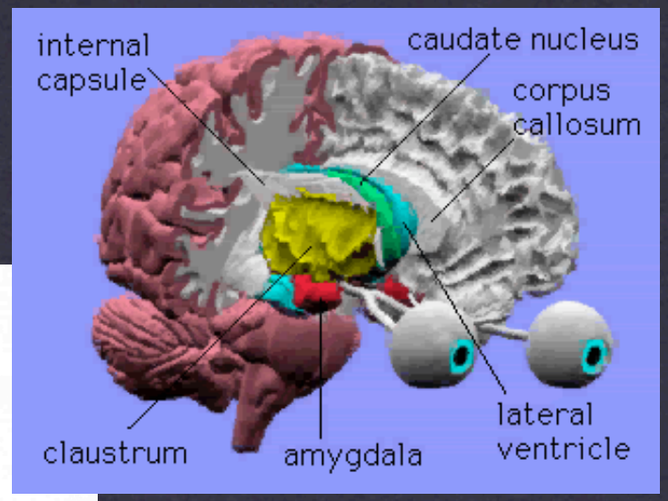
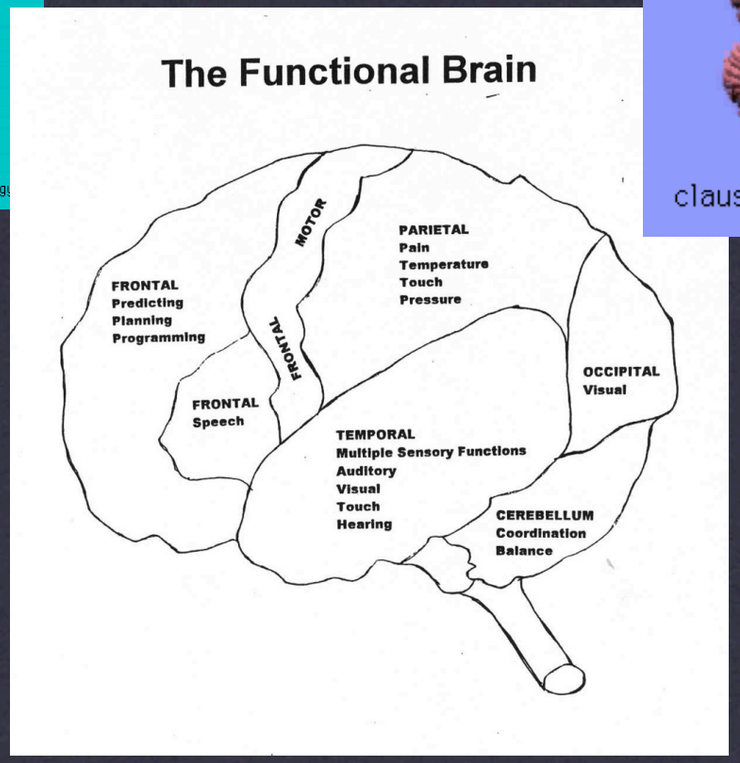
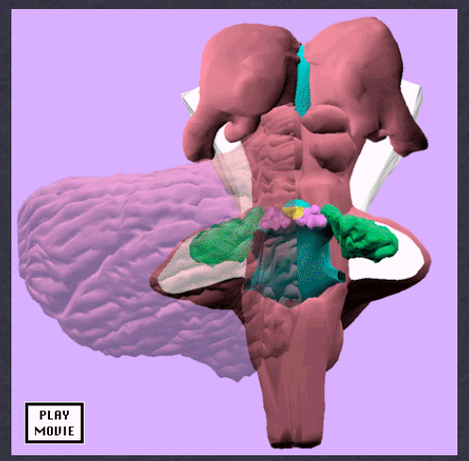








The Brains Have It!

by Drina Madden 708-403-9000

Montessori the Wise

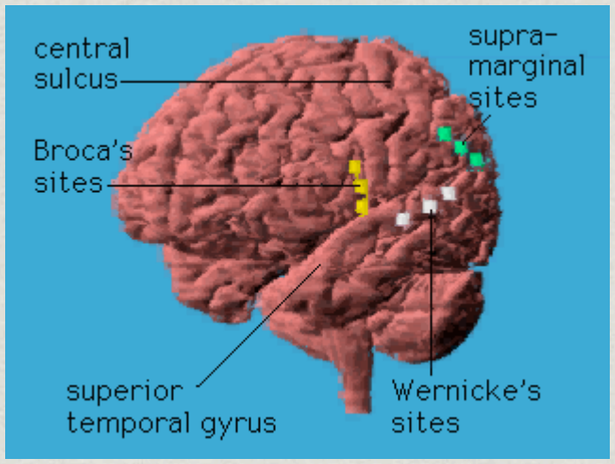
- Many of our concepts for assisting the learning of children
- born through the scientific
- wisdom of Maria Montessori.
- Her awareness of children and their learning
- built upon solid observations
- proven to be “brain-based”

Montessori the Wise

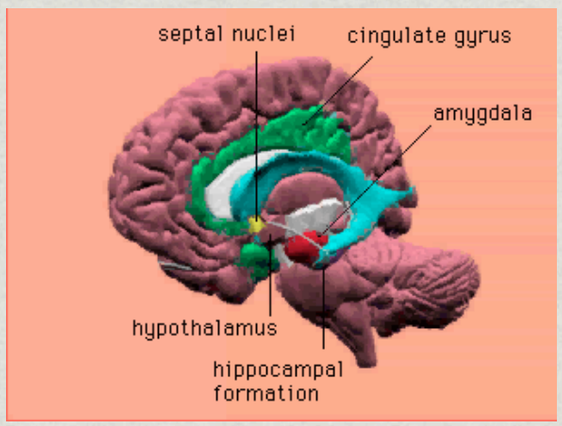
1. Sensitive periods of development
2. A consistent environment
3. Aesthetic appeal that fosters attention
4. One concept presented at a time

5. Emphasis on concrete to abstract
6. Opportunity to repeat, repeat, repeat

7. Build on sequential success
8. Multisensory, concrete
9. Multiage grouping

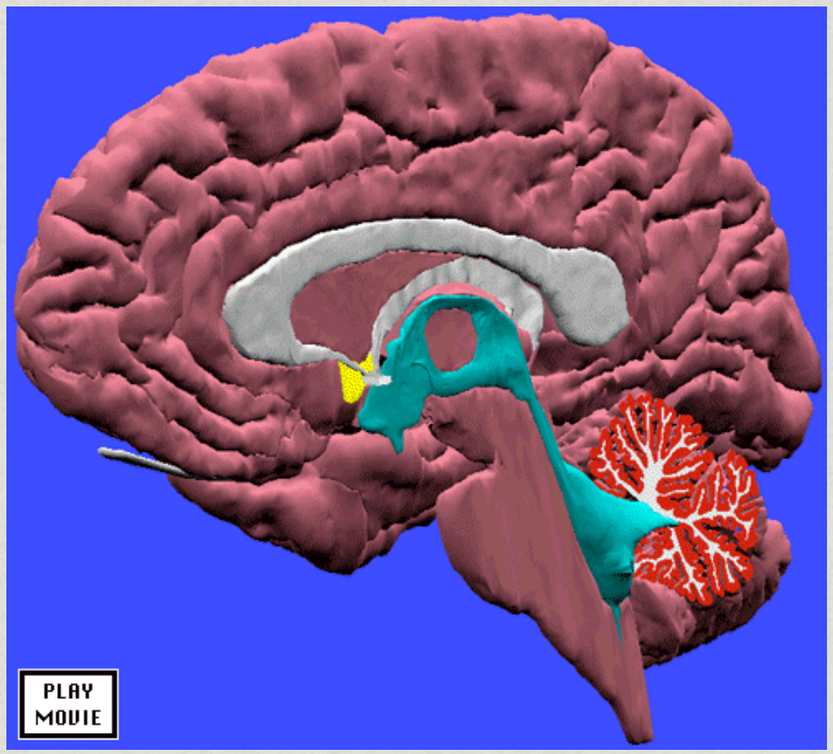


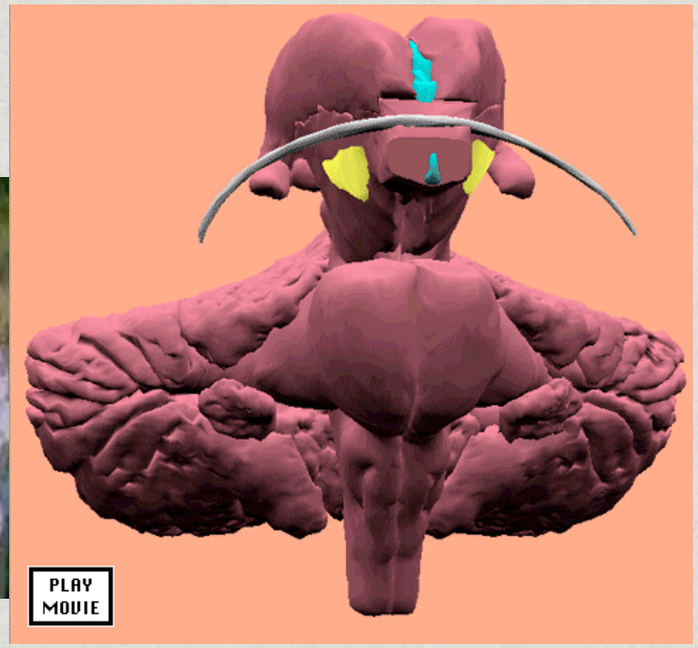
The Brain is the only organ in the human body that learns



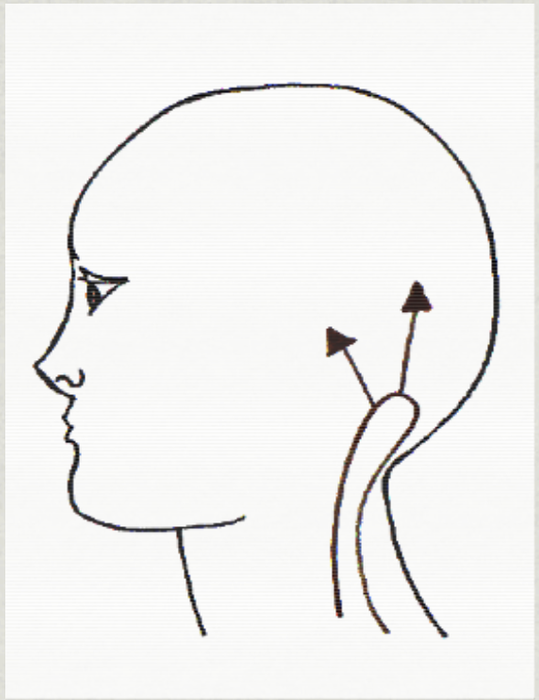
Human beings are “meaning making” organisms

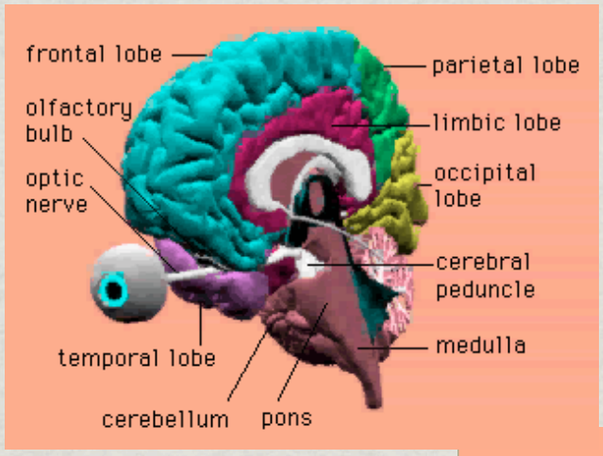
The brain is our “meaning making” organ

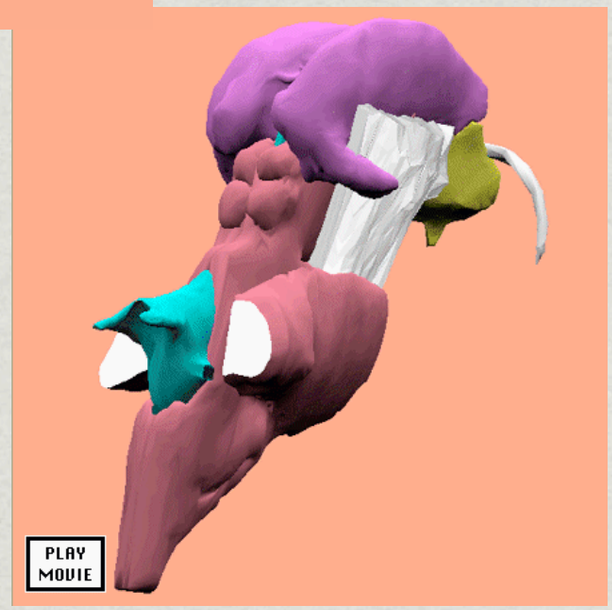




Attention

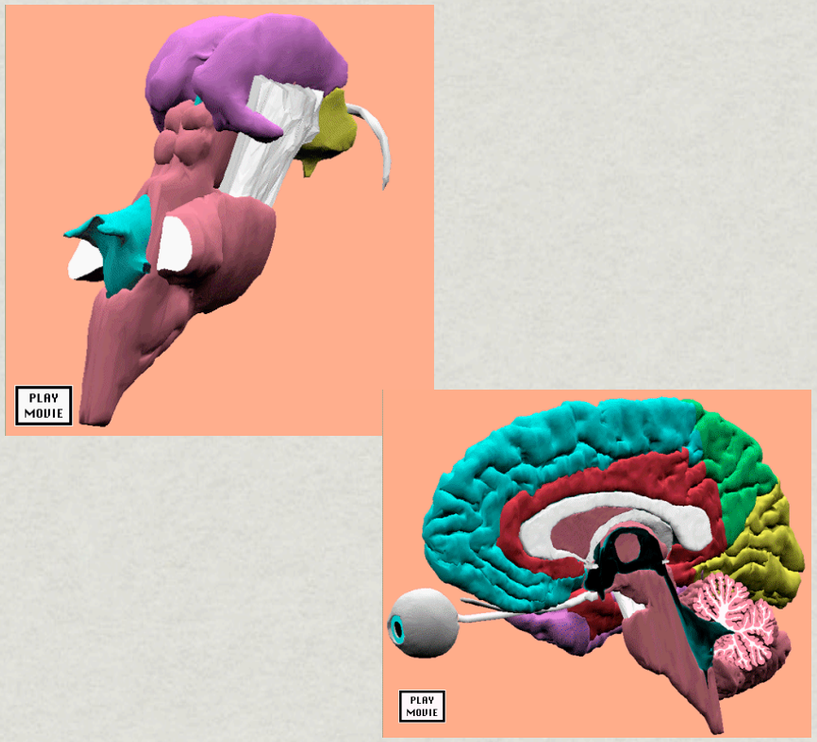






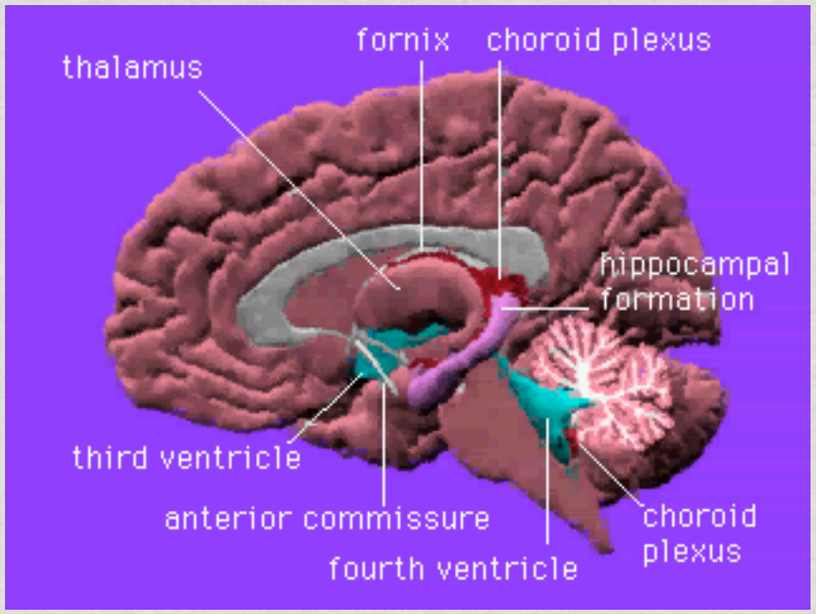
- The "switch"of the brain (brain stem), wakes the brain up each morning.
- Regulates the tone and mobility of the nervous system. We must pay attention to learn

Bottom-up Attention



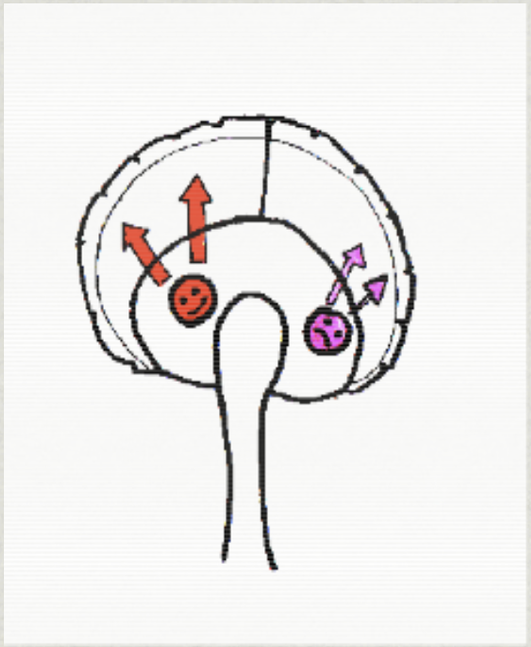
Brain chemicals send electrical "wakeup" messages UP to the brain's many receiving, gathering, and holding locations

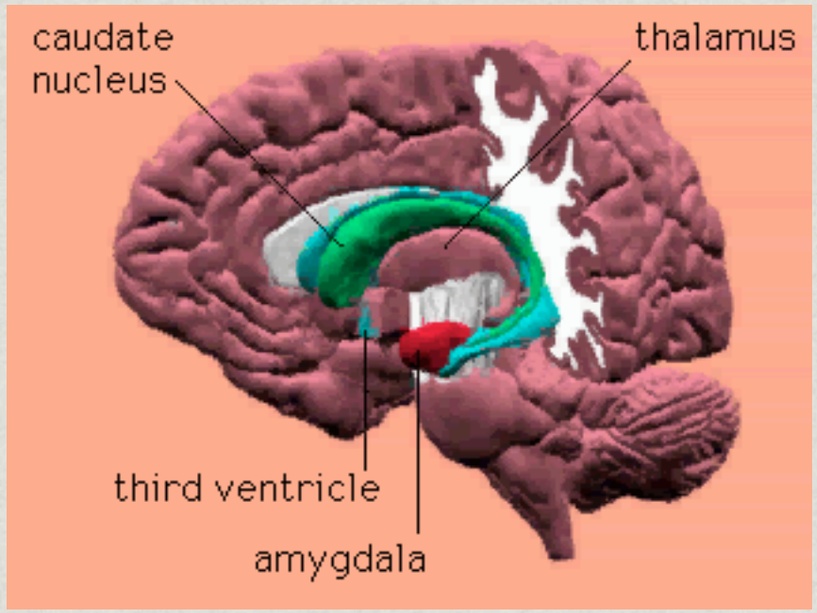
Top-down attention



- From the TOP (frontal lobe) this executive attention brings control to lower areas of the brain.
- Makes most complex forms of conscious activity possible

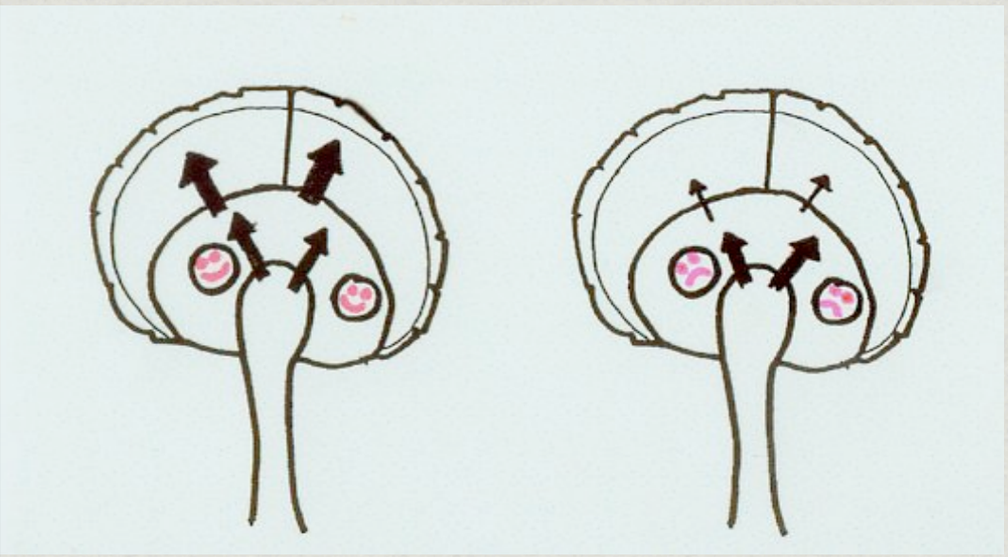
Mood must be open





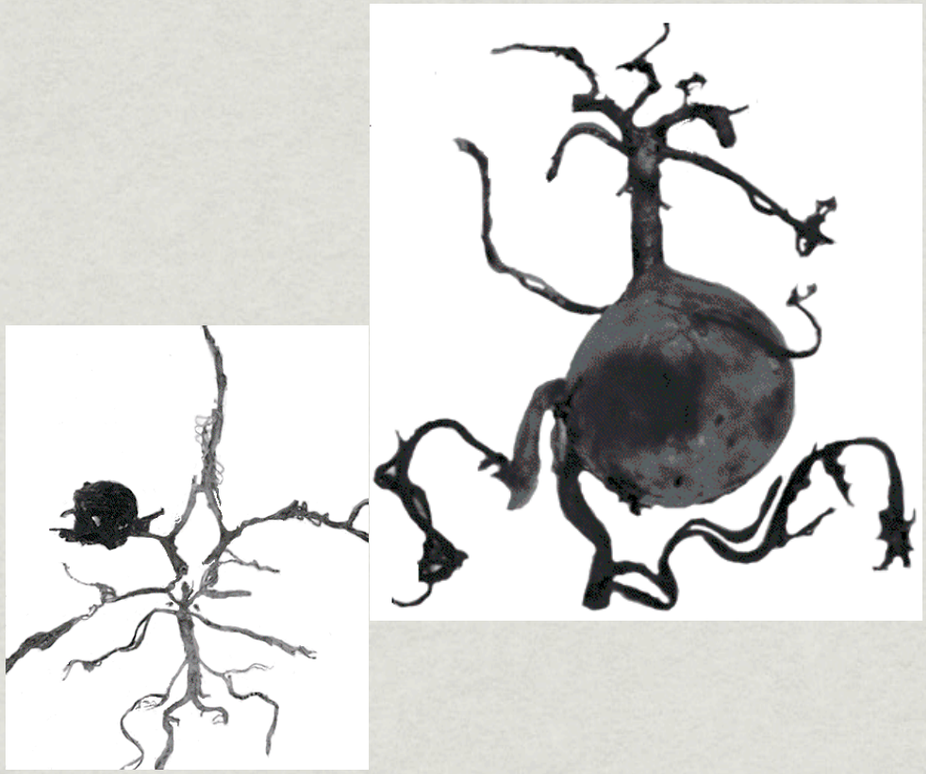
- **Activation must go through the mood part of the brain before thoughts and actions can occur.**

Mood



- **A happy person can learn, play, interact.....better than a sad person-**

Myelin covers the nerve fibers



- **Myelin - the insolation around nerve fibers - begins to form before birth until age 14**

Connecting fibers

- **Association fibers increase during infancy. Information processing increases dramatically.**

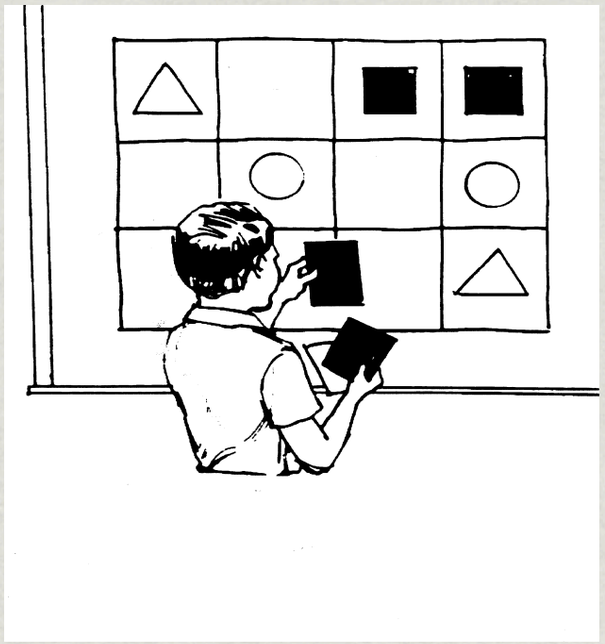
Dopamine is lower in early childhood

- **Children under 5 have less effective message chemicals (esp. dopamine) than adults. The levels increase and signal basic brain formation**

Early brains are more general than adults

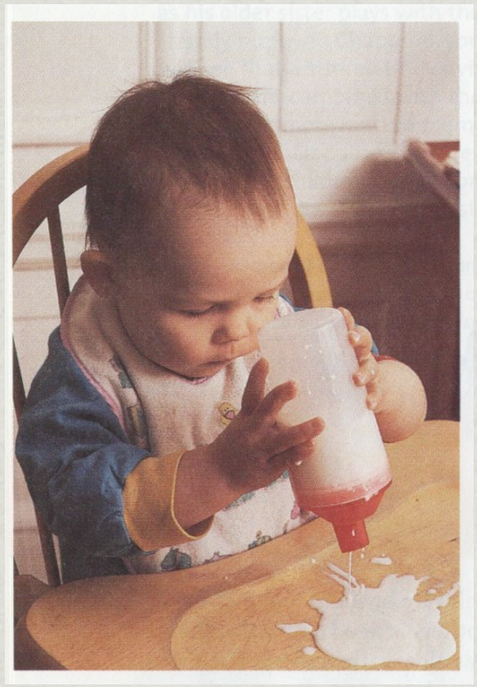
- **They need many varied experiences so visual, auditory, speech...areas may develop.**

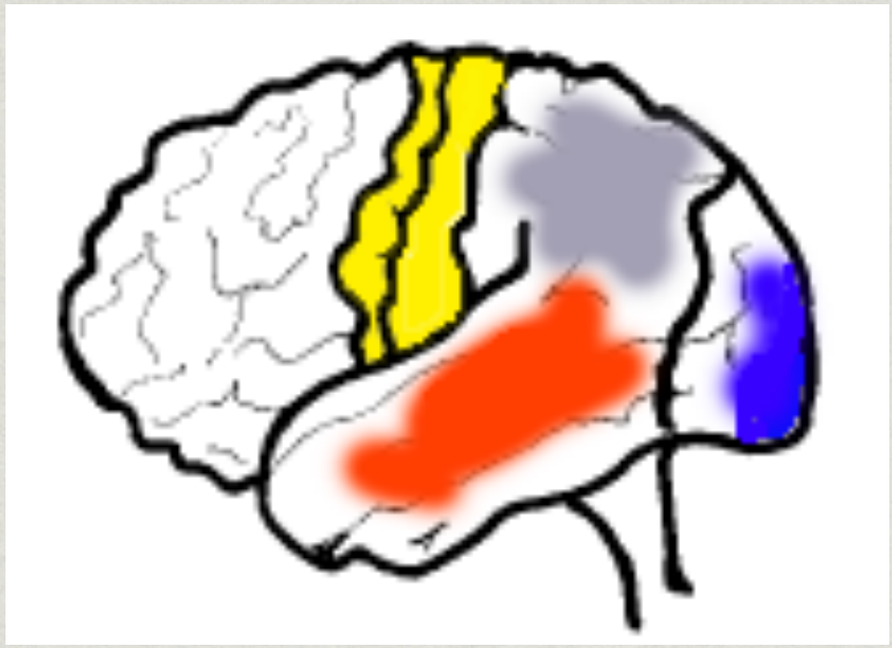
Children need clear repetition



- **With strong messages, a child can hear “square", and say “square” when shown it tomorrow.**

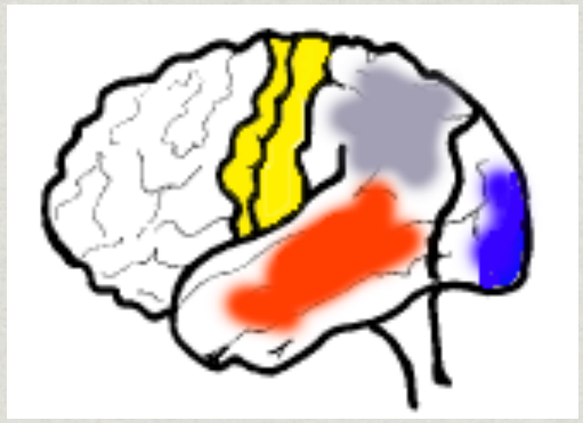
Primary areas develop



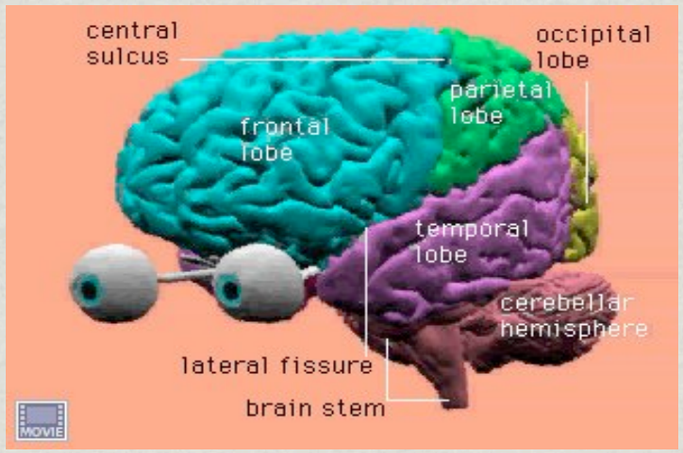


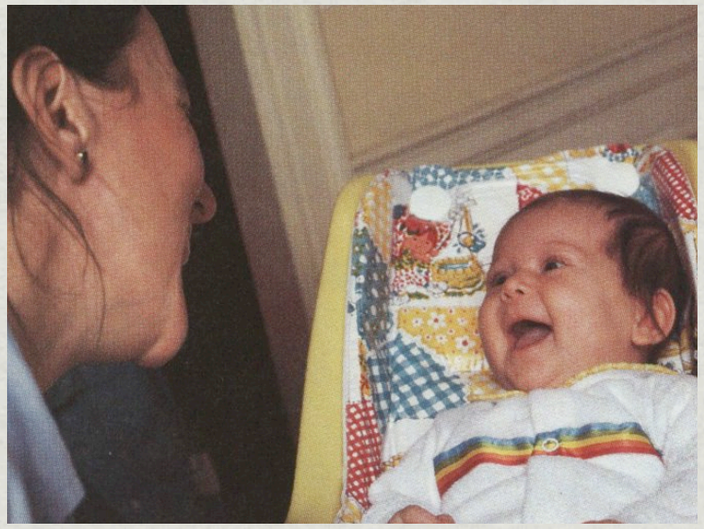
- **Clear, repeated experiences help young children build their first memories.**

Primary areas

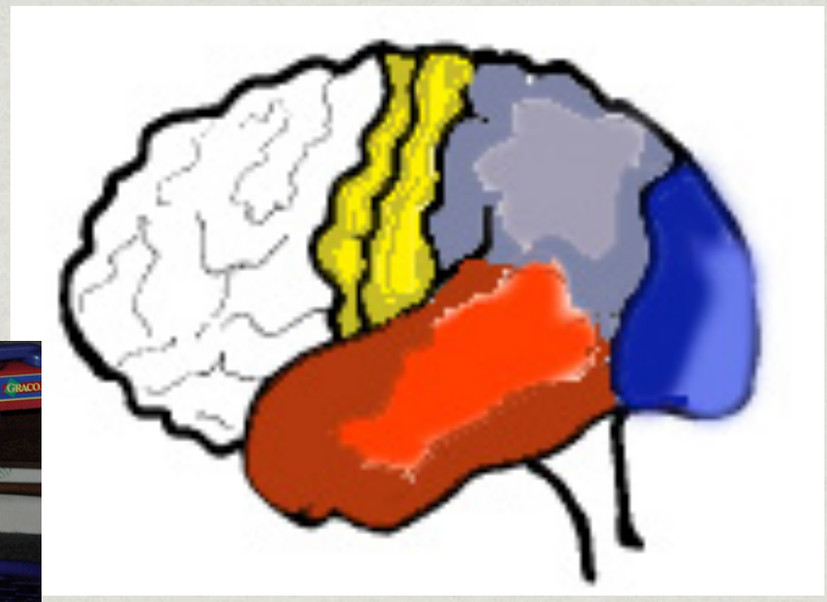


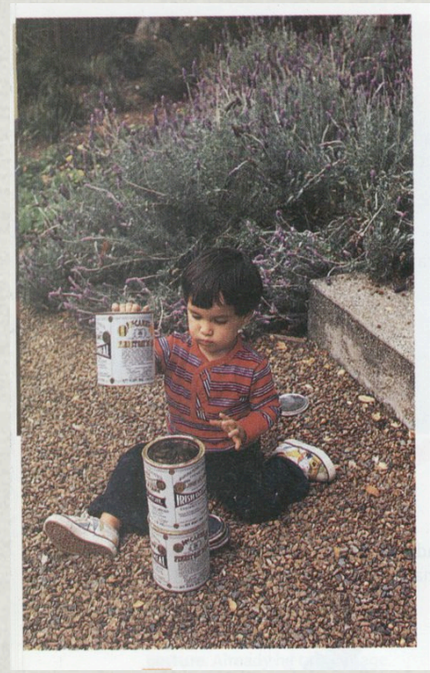
Motor, speech, touch, pressure, temperature, and taste develop separately





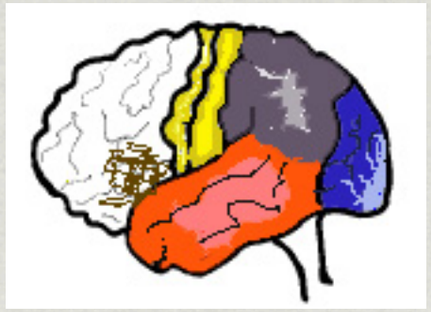
Secondary areas



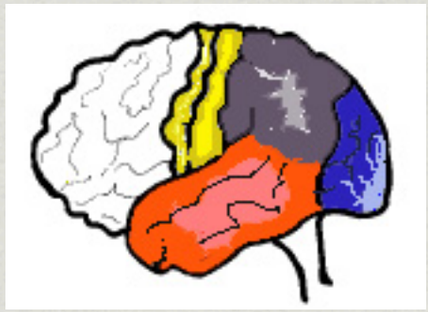


- **Visual, auditory, touch, smell, speech, pressure, taste, and mood experiences all begin sharing with each other.**

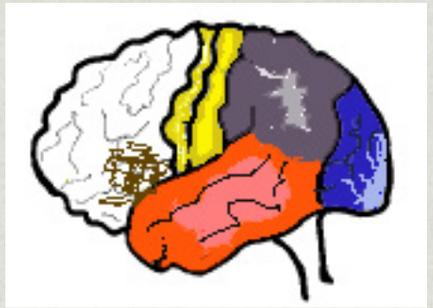
Secondary areas



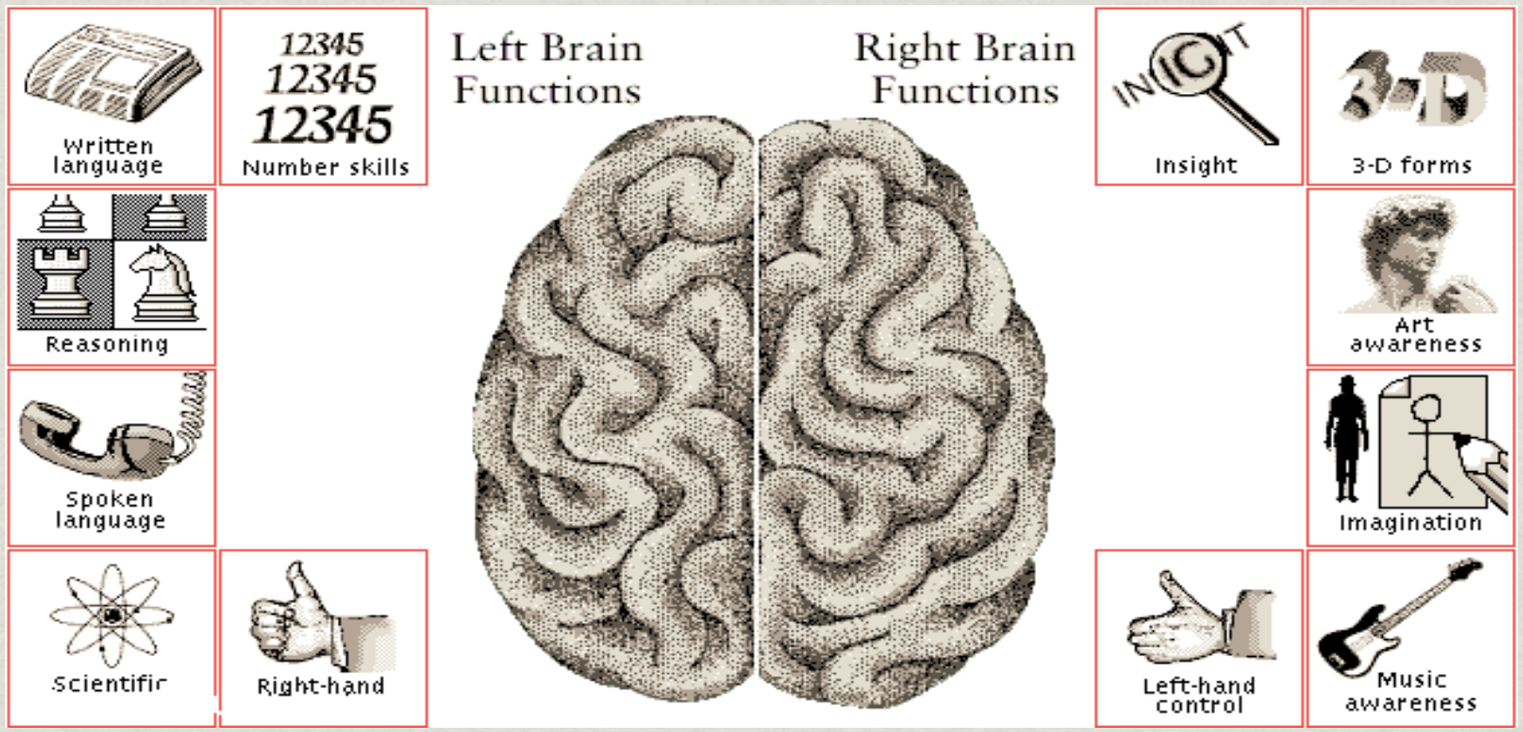
Receive, analyze and plan - mostly using the same sense



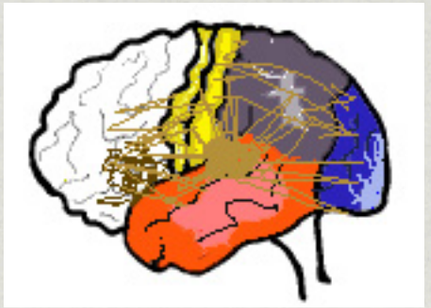
Secondary areas



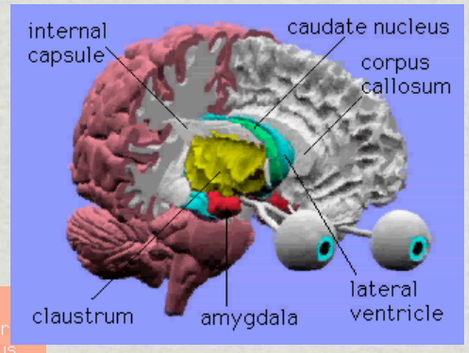
- **The hemispheres and “gate” (thalamus) begin to form in the 7th week of gestation. The two sides of the brain begin sharing more during toddler years. Frontal lobe increases development.**

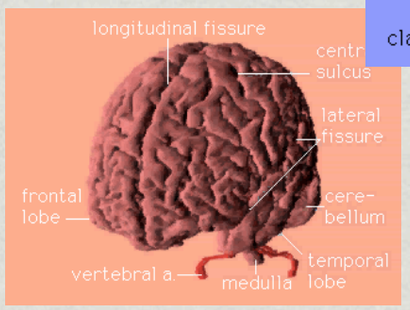


Tertiary areas

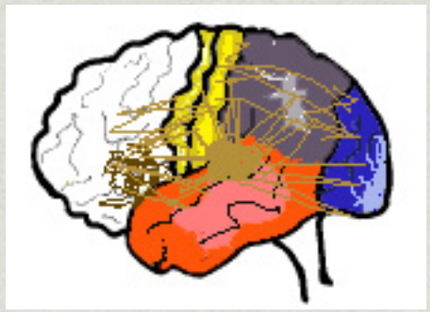


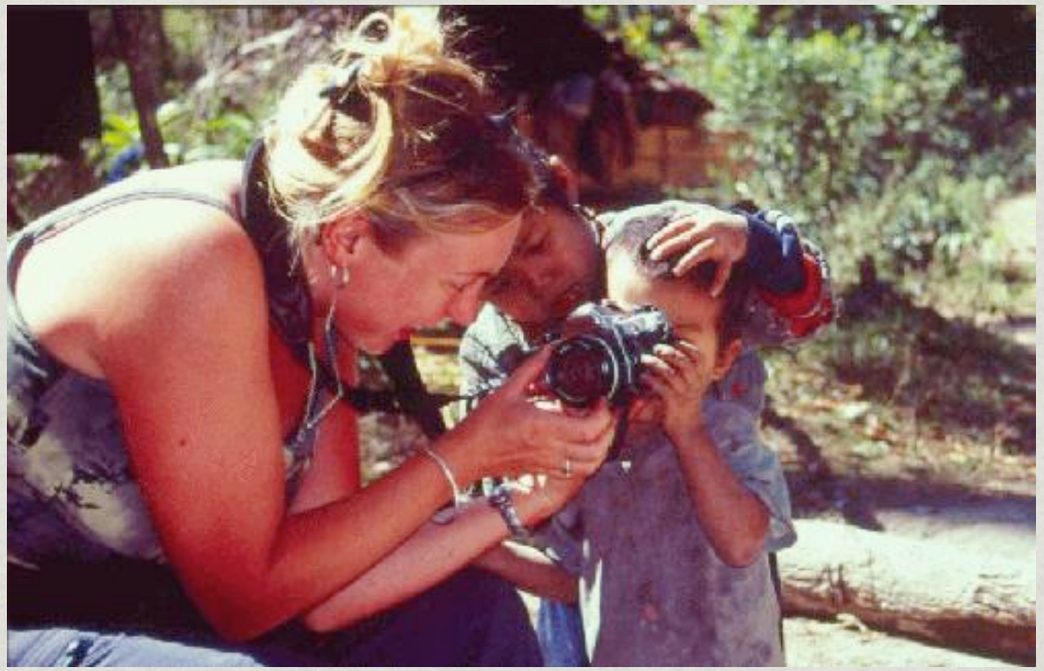
Visual, auditory, touch, smell, speech, pressure, taste, and mood connect with each other





Tertiary areas

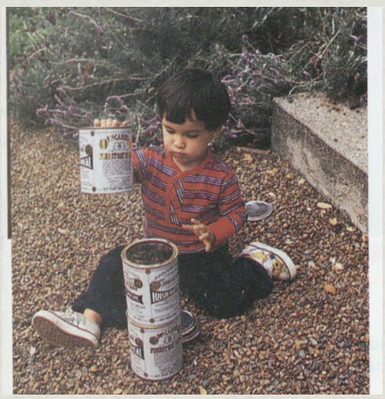




- **Are specific to humans.**
- **Responsible for combining experiences - sensory integration**

Learning

- Most important - **what the learner already knows**.
- Even babies have prior knowledge



Learning

- **Prior knowledge is persistent**
- **Prior knowledge is the beginning of new knowledge**

Learning

- **2 influences on connection building**
  - **How often connections are used**
  - **How important signals are**

Learning

- **Sensory experience changes neuronal networks**

Assist Learning

- Help the learner feel in control
- Help them see how learning matters

Assist Learning

- No need to motivate or reward
  - Rewards actually reduce learning
  - Can help some people get started on something and move into internal rewards
- Success is the best reward

Assist Learning

- **Begin with concrete examples**
- **Build on previous**
- **Repeat, repeat, repeat**

Learning at home & school

- **1. Keep the child's mood open**
  - **Laughter and mistakes**
- **2. Allow for attention without distraction**
- **3. get the parts of the brain talking to each othe**
- **4. Encourage movement and "doing"**

Learning at home & school

5. work on memory activities

6. play listening games

7. encourage decision making and discovery

8. plan for social moments

9. minimize passive electronics

Learning at home & school

- TIME TO REFLECT

- TIME TO PROCESS
- TIME TO REPEAT

- **TIME TO BE**