

The Brains Have It!

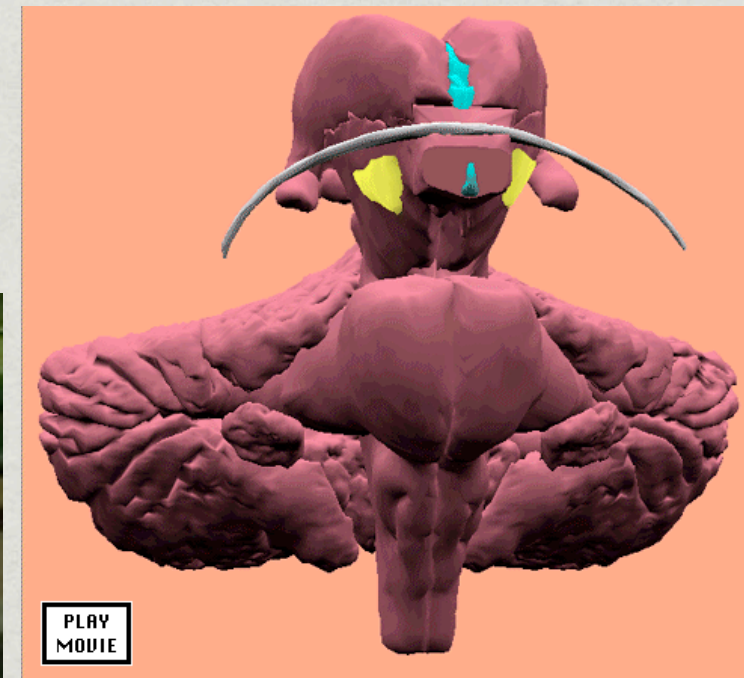
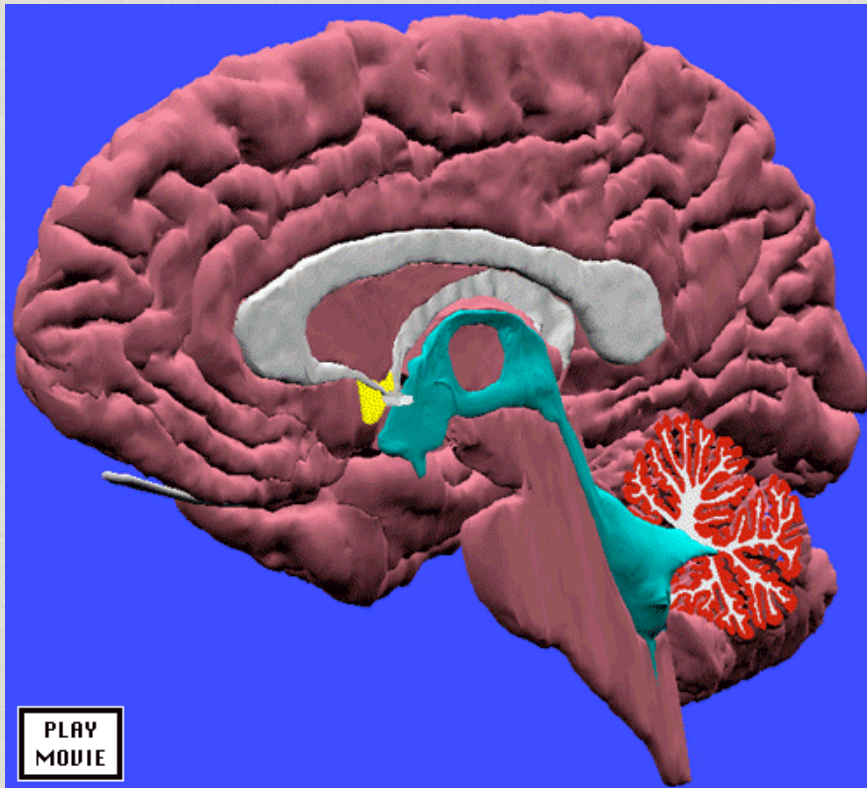
by Drina Madden M.A., C.A.S

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

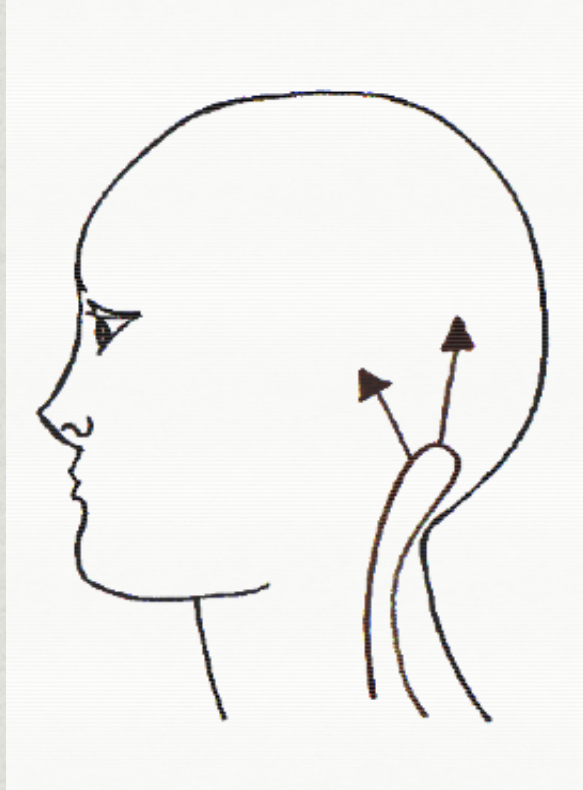
Human beings are “meaning making” organisms



The brain is our “meaning making” organ

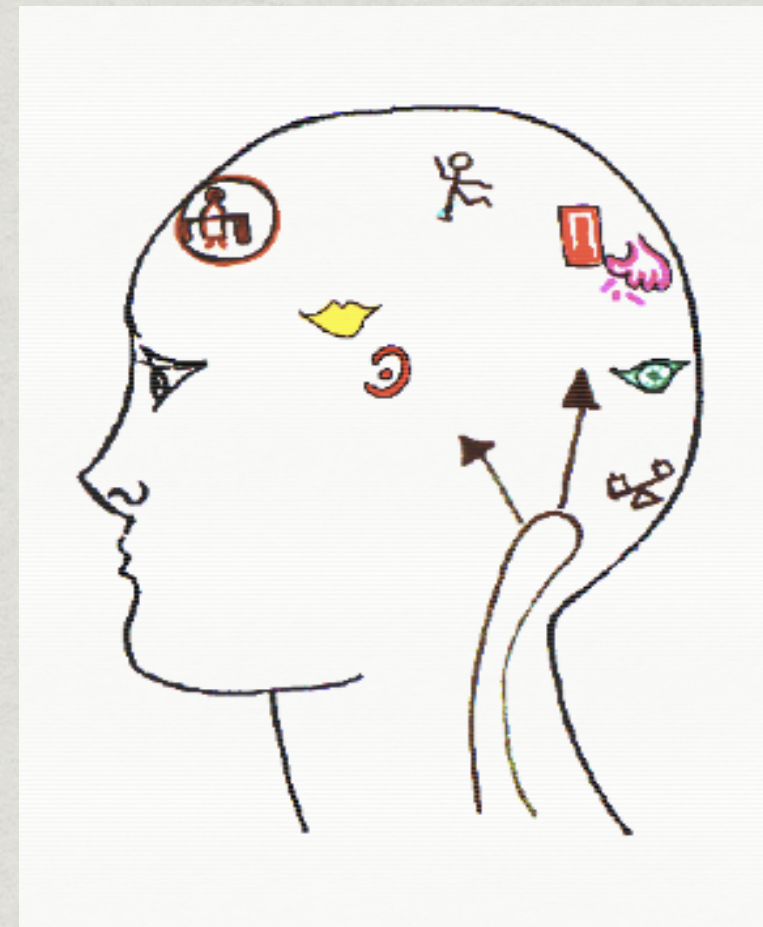
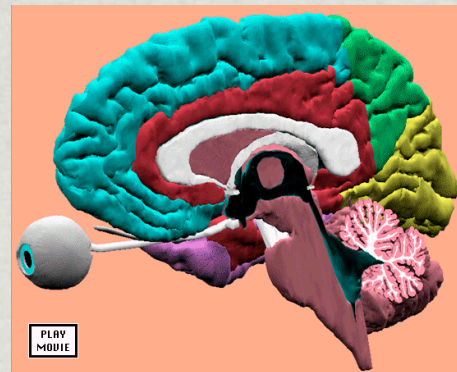


Attention



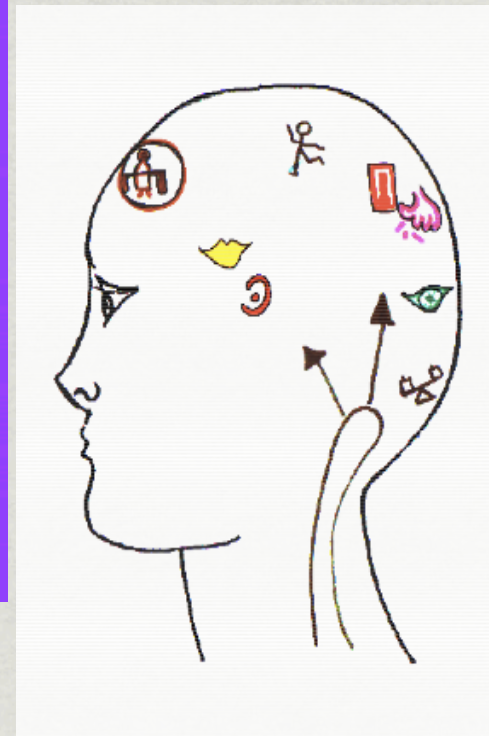
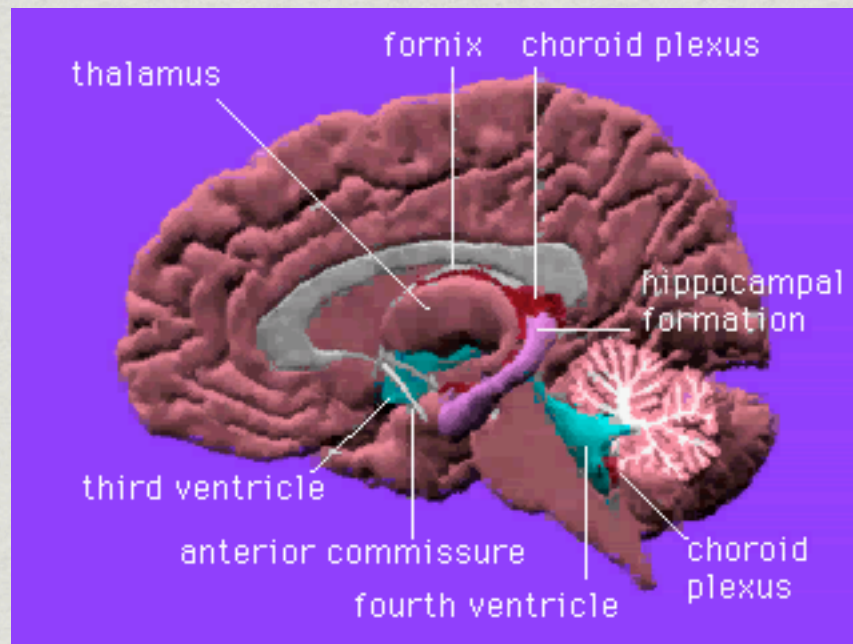
- The "switch" of the brain (brain stem), wakes the brain up each morning.
- Regulates the tone and mobility of the nervous system. We must pay attention to learn

Bottom up Attention



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

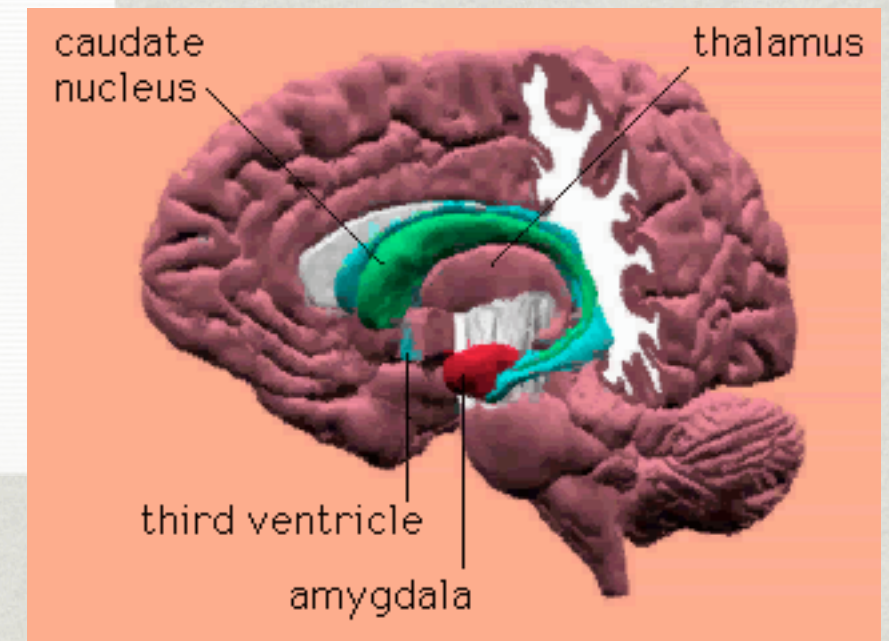
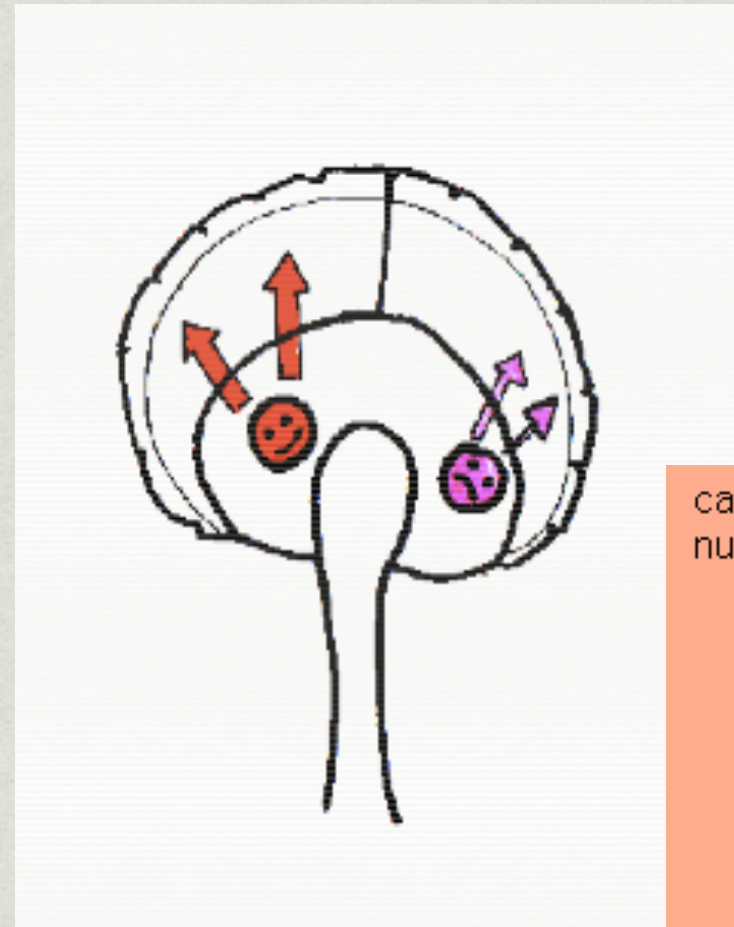
Top down attention



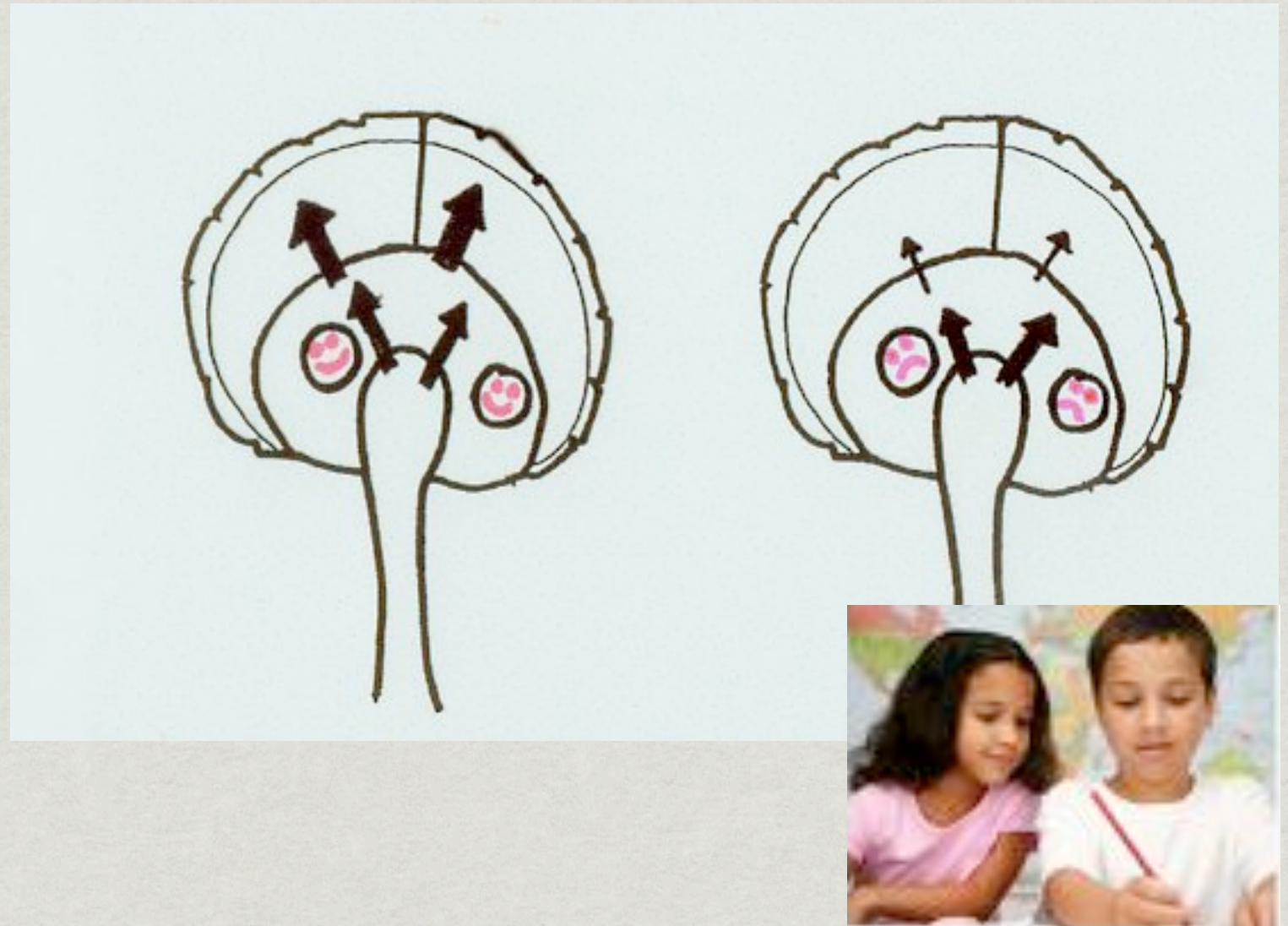
- ✱ From the TOP (frontal lobe) this executive attention brings control to lower areas of the brain. Makes most complex forms of conscious activity possible

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 insulation 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



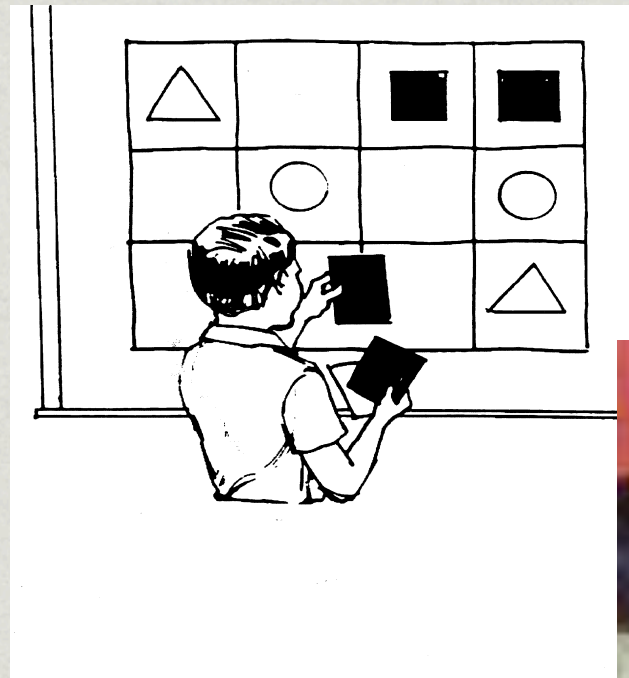
- * Children under 5 have less effective message chemicals (esp. dopamine) than adults. The levels increase and signal basic brain formation

Early brains are more general than adults



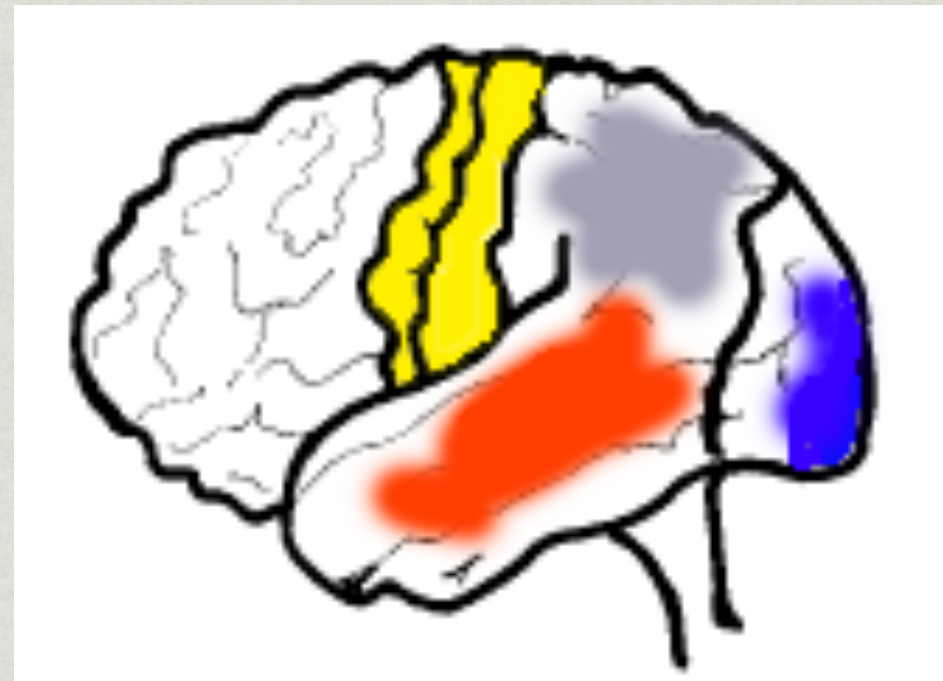
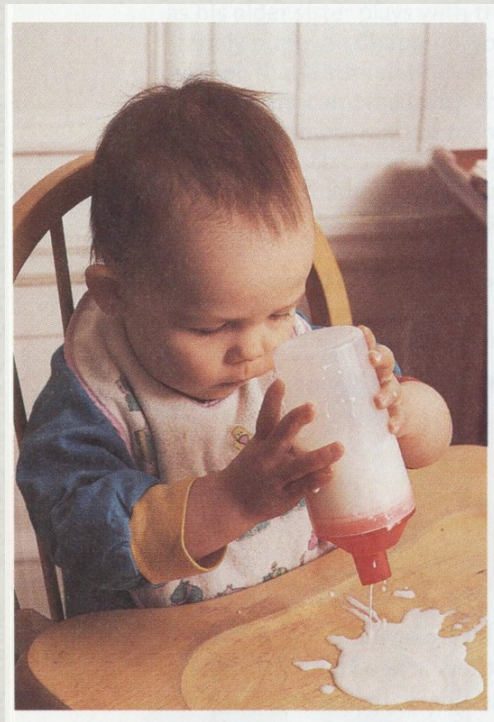
- * They need many varied experiences so visual, auditory, speech...areas may develop.

Children need clear repetition



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

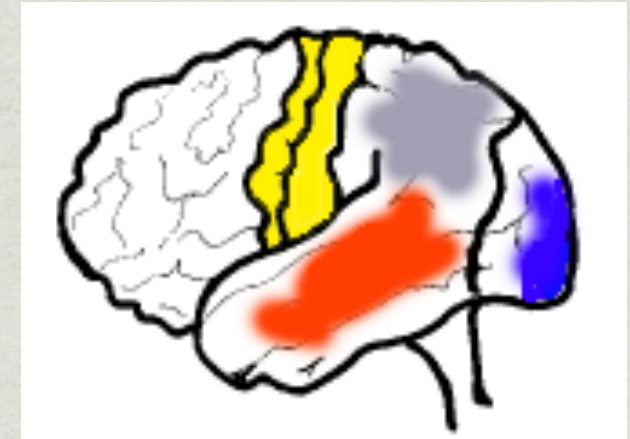
Primary areas



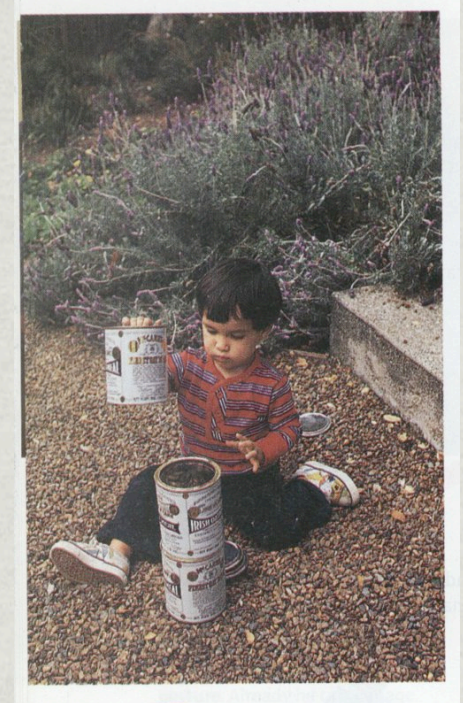
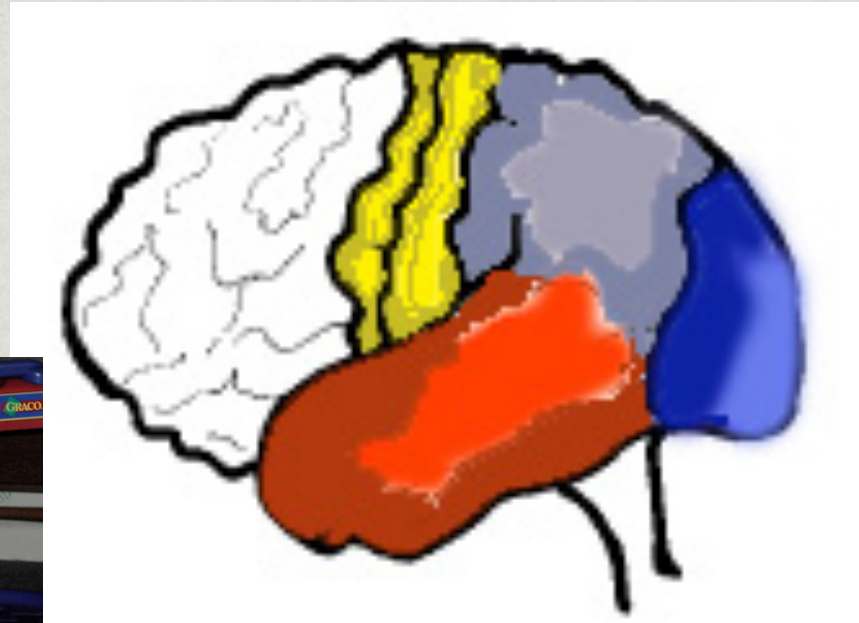
- * **The first, or PRIMARY AREAS develop. Clear, repeated experiences help young children build memories.**

Primary areas

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

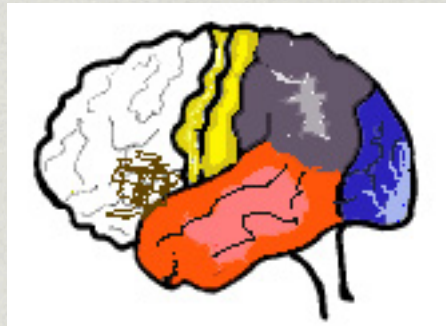


Secondary areas

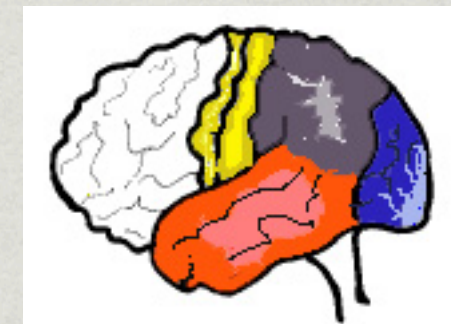


- ✱ **Visual, auditory, touch, smell, speech, pressure, taste, and mood experiences all begin sharing with each other.**

Secondary areas



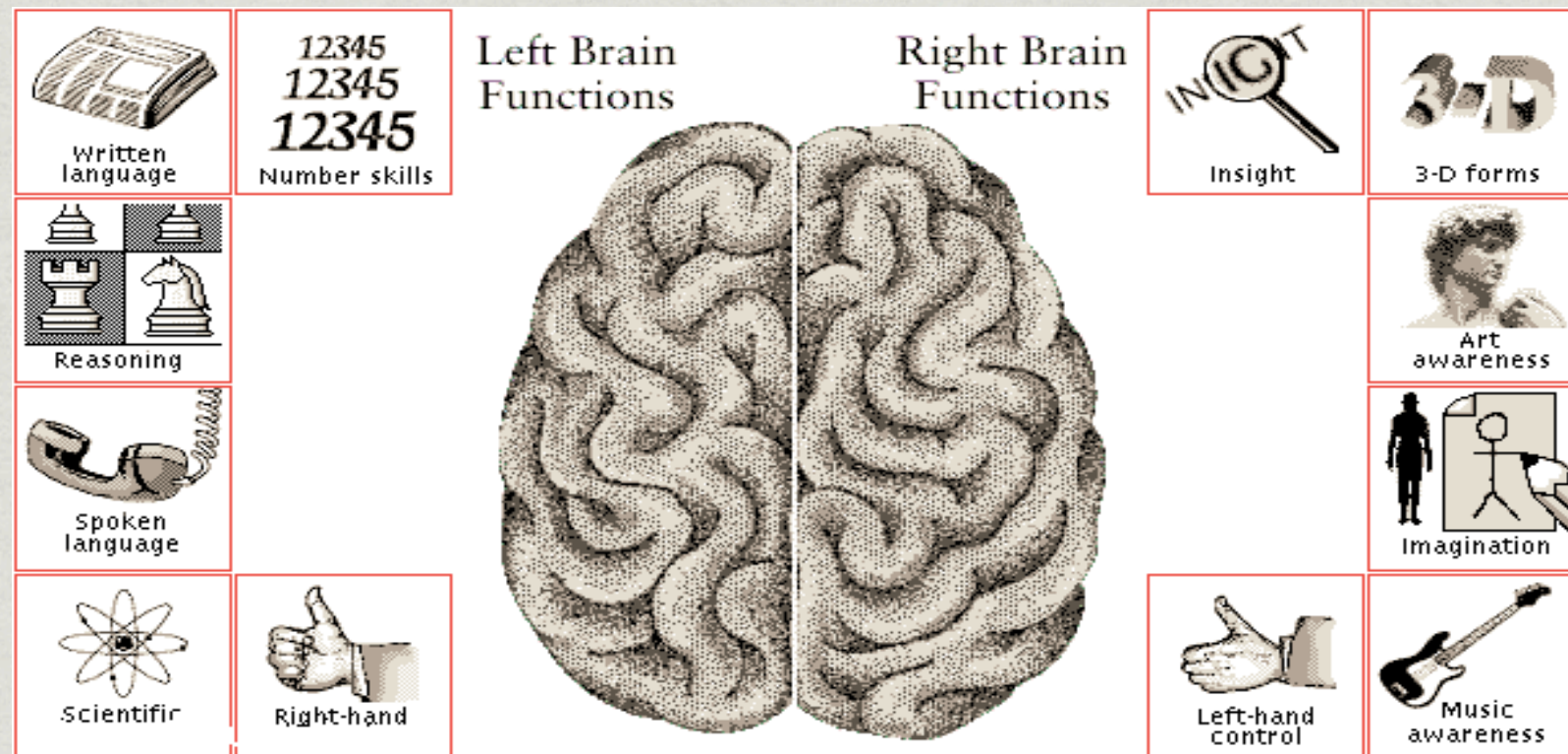
- ✱ Receive, analyze and plan



Secondary areas

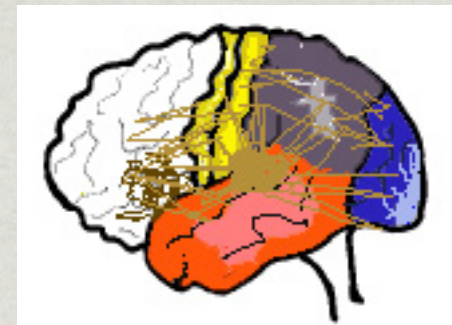


- * The hemispheres and “gate” (thalamus) begin to form in the 7th week of gestation. The two sides of the brain begin sharing more during toddler years. Frontal lobe increases development.

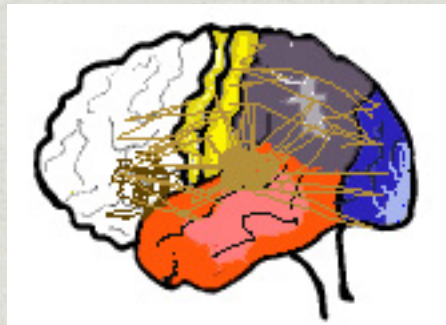


Tertiary areas

TERTIARY AREAS – Visual, auditory, touch, smell, speech, pressure, taste, and mood interconnect.



Tertiary areas

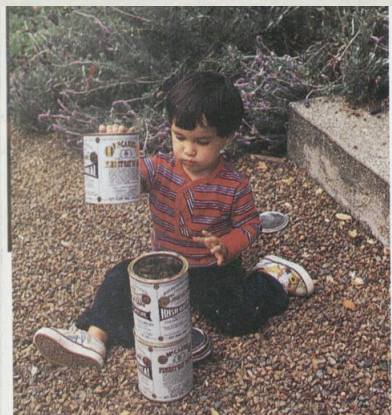


- ✱ Are specific to humans.
- ✱ Responsible for combining experiences - sensory integration

Learning



- ✦ Most important factor is what the learner already knows. Even babies have prior knowledge



Learning



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



Learning



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



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



Montessori the Wise

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



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 other
 - 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

