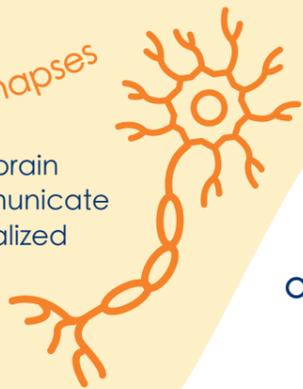


HOW DOES THE BRAIN DEVELOP?

BRAIN CELLS COMMUNICATE:

Neurons and Synapses

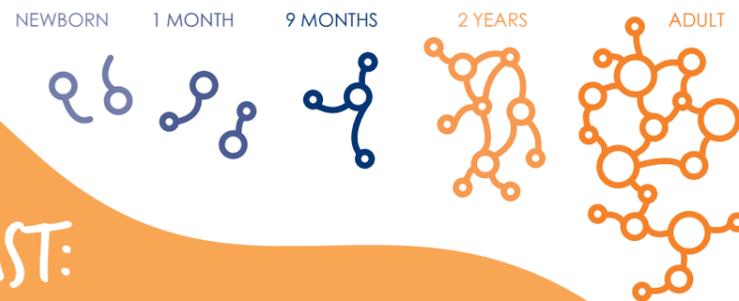
The brain is made of billions of brain cells called neurons that communicate with each other through specialized connections called synapses. A single neuron may contain thousands of synapses. The connections are not static and change over time. The more neurons connect with each other, the stronger the connection grows.



LEARNING AND PRACTICE

Connections develop over time

- Learning changes the physical structure of the brain. Learning reinforces the connections between neurons.
- Recurring experiences also strengthen the connections in the brain.
- Like a muscle, brain can grow stronger and connections can disappear if unused.



THE BRAIN GROWS FAST:

The formation of new neurons and synapses is fastest at birth and throughout childhood as the brain learns to understand the world around.

- A 4-week-old foetus forms new neurons at a rate of 250,000 every minute.
- From birth to the age of 3 a child sees the fastest rate of brain development of his entire life span.
- At age 3 the brain has reached 80% of its adult size.



BRAIN FUNCTIONS

Different areas of the brain are associated with specific functions.

FRONTAL LOBE

Problem-solving, abstract thinking, logical reasoning, organizing, coordinating, integrating different information, emotional regulation, planning of tasks, language comprehension and expression



PARIETAL LOBE

Sensory information, spatial understanding, visual perception, pain, touch, temperature

TEMPORAL LOBE

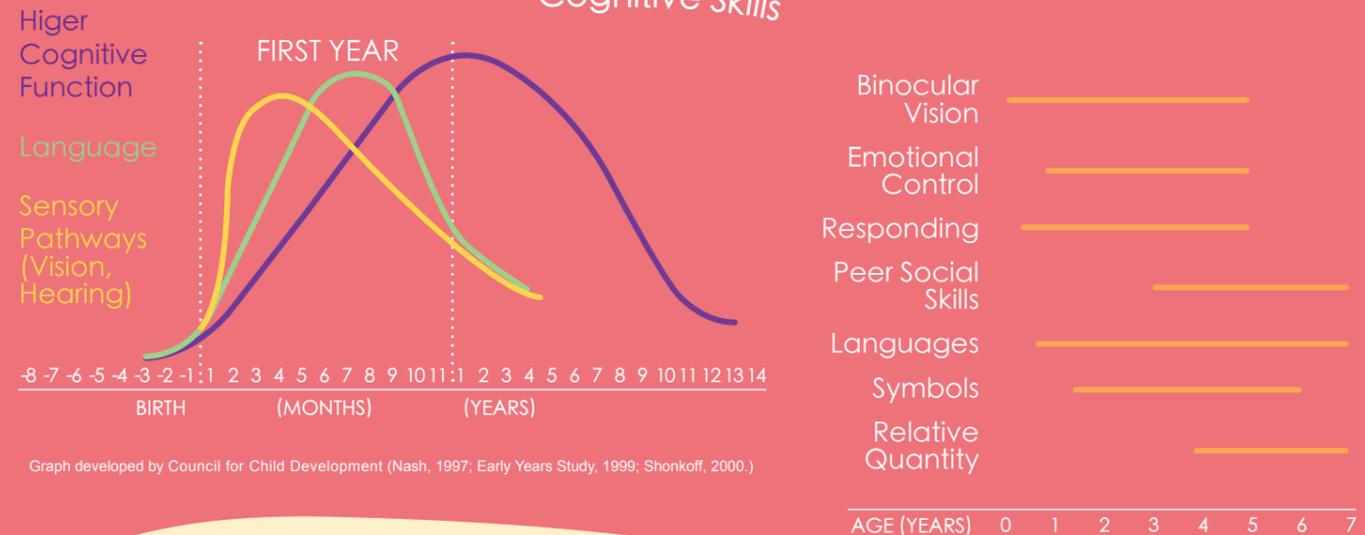
Auditory processing, verbal memory, sensory processing, emotional regulation, long-term memory, language comprehension, behaviour

OCCIPITAL LOBE

Visual information, perceptual understanding, recognition of shapes, sizes, letters

LEARNINGS & AGES:

Cognitive Skills



BRAIN FACTS AND FIGURES

80-100 MILLIONS
of neurons (100,000,000,000)
= number of stars in the galaxy!

180,000 KM
myelinated axons

BRAIN REPRESENTS 2%
of total body weight but
CONSUMES 20%
of total body energy

40 QUADRILLIONS SYNAPSES
(40,000,000,000,000,000)

160,000 KM
blood vessels

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