



Parents



Little Sparks  
Big Starts



# Brain development in the early years

For more information visit: [www.littlesparks.org.uk](http://www.littlesparks.org.uk)

# How young brains grow

Your child's brain is growing faster than at any other time in life! Inside, billions of brain cells (called neurons) form connections every time your child has a new experience—like hearing your voice, playing with blocks, or being cuddled. These connections build neural circuits that support learning, movement, feelings, and behaviour.



Scan to watch a video:  
Early experiences build brain architecture.



## Nature and nurture: working together

Every child is born with a set of genes that provide a basic “blueprint” for how their brain will grow.

But how the brain develops also depends on what your child experiences, and their environment. This includes love, play, conversation, routines, and the world around them.

Epigenetics is the name for how experiences can affect how genes work. That means your care and attention help unlock your child's full potential.

# How the brain changes over time

## Birth to age 2

Rapid growth



The brain creates more connections than it will ever need

The most growth happens between 3 to 6 months.

**Example:** Your baby begins smiling, babbling and reaching for toys. These are signs their brain is connecting learning, feeling and movement.

## Ages 2 to 6

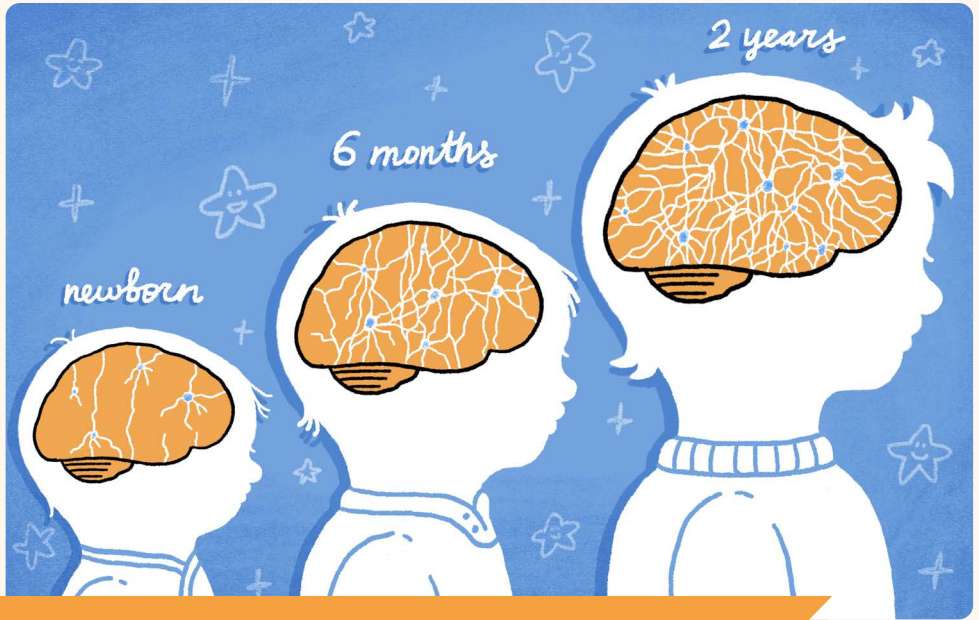
Trimming and strengthening  
(Pruning)

The brain removes connections it doesn't use often—this is called pruning.

This helps the brain work more efficiently.

**Example:** A child who hears lots of conversation will build strong language circuits. Without that interaction, those connections may fade.





## Building blocks for big skills

The early years lay the foundation for everything that follows. Early experiences build circuits that support:

**Emotional bonding**  
through cuddles and responsive care



**Movement and coordination**  
from crawling, walking, and climbing



**Language and thinking**  
from stories, songs, and conversations



**Behaviour and self-control**  
from consistent routines and learning how to wait, share, and take turns



# Brains can change! (Neuroplasticity)

Even though some parts of development are influenced by genetics, the brain stays flexible. This is called neuroplasticity. It means:

**New connections can be formed with practice and support.**

**Positive experiences strengthen essential skills.**

**Example:** A shy child can become more outgoing through gentle encouragement and safe opportunities to interact with others.



Scan to watch a video:  
Neuroplasticity

## What you can do at home



You are your child's first and most important teacher. You can help their brain grow by:

Talking and listening to them throughout the day

Playing, reading stories, and singing songs

Giving cuddles, praise, and calm routines

Letting them explore safely and try things themselves

**Example:** Singing the same song daily helps build memory, rhythm, and language—plus, it's a lovely way to bond!



## How early years settings support brain development

Early years settings help your child grow by providing:

### Language-rich environments

with songs, stories, and conversations

### Opportunities to explore

with toys and play that build thinking and movement

### Emotional support

with consistent routines and caring adults

### Individual attention

from practitioners who notice what your child enjoys and help them build on it

**Example:** If your child enjoys stacking blocks, a nursery practitioner might offer more challenging building toys to encourage thinking and creativity.



## Final thought...

Every cuddle, every chat, and every moment of play helps shape your child's brain.

Genes may set the stage, but your love and care write the story.

Together, families and early years professionals build the strong foundation children need to grow into happy, capable learners.

## Helpful terms

**Neuron:** A brain cell that sends messages.

**Circuit :** A group of brain cells that work together.

**Proliferation:** The brain's big growth spurt (birth to age 2).

**Pruning:** The brain's way of letting go of unused connections.

**Neuroplasticity:** The brain's ability to change and adapt.

**Nature:** The things your child is born with.

**Nurture:** The things your child learns from the world around them.

**Epigenetics:** How experiences can affect how genes work.

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