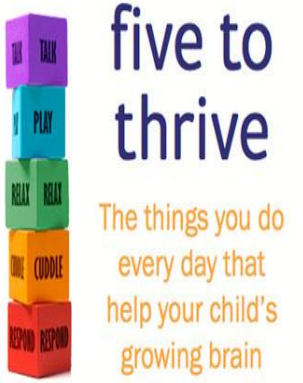
Building brains for better futures - the Five to thrive approach

The Hillingdon
Quality Improvement
Team



Where does Five to Thrive come from?

- London borough of Hillingdon has renewed its license with KCA from October 2021 to September 2024
- KCA (also known as Kate Cairns Associates) was established in 2011 registered as Knowledge Change Action Ltd.
- KCA is an evidence-based model, approach and framework
- It aims to promote connected relationships enabling people to connect with each other, and adults to connect with children.
- Connected relationships help us to withstand current stresses and heal past trauma and difficulties
- Together we are stronger – building a resilient Hillingdon

Five to Thrive is a model …

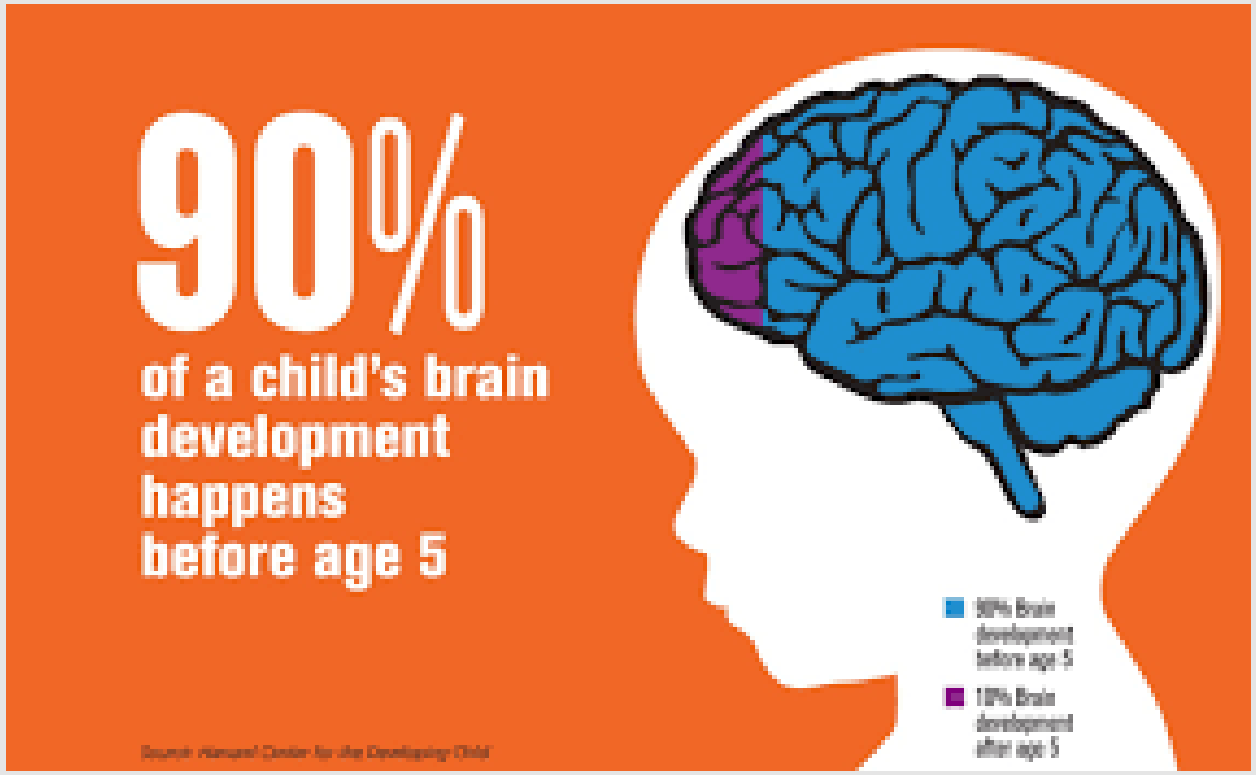
… for how connected relationships build brains

- Science-based
  - Drawing on current neuroscience
- Accessible
  - Simple but not simplistic
  - Can be understood at many levels
- Engaging
  - Parents and professionals alike recognise the model as valid in relation to their own life experience, not just in theory

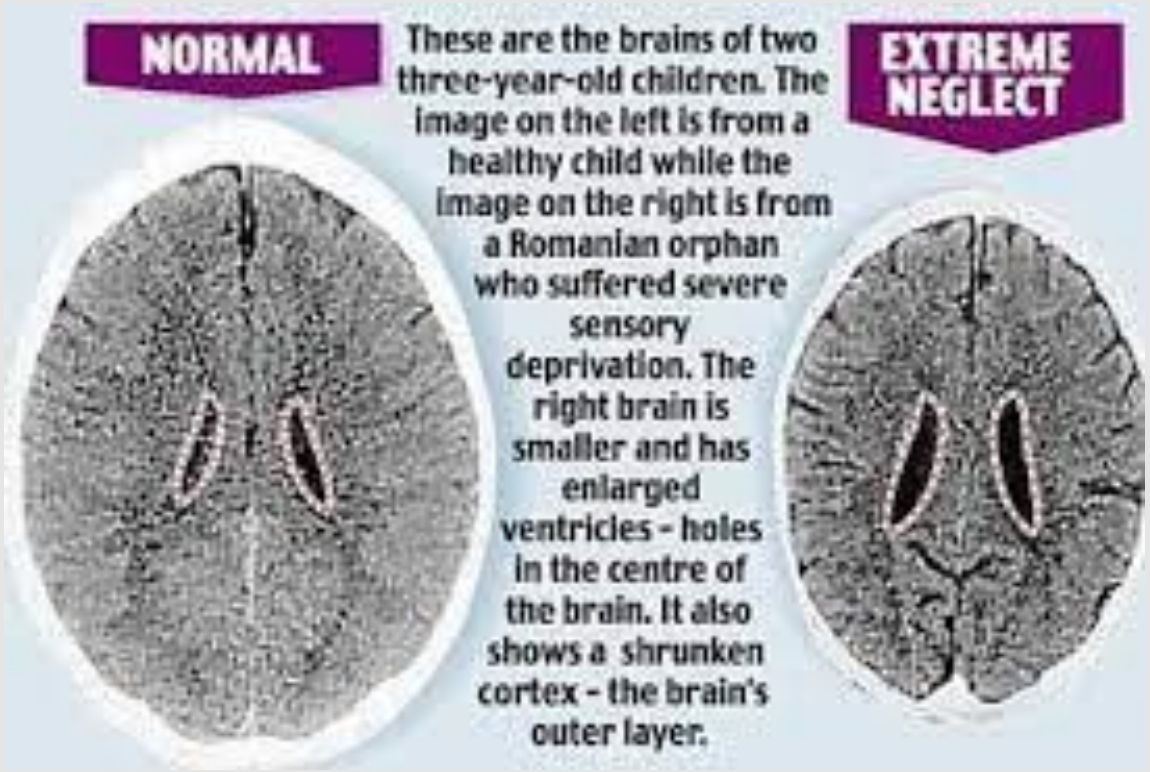
kca.
KATE CAIRNS ASSOCIATES

knowledge that changes lives

“Building brains for better futures.”



- The first experiences of our lives actually affect the physical architecture of the developing brain.
- This means brains are not just born, they are built over time based on our experiences.



The Developing Brain

- During early sensitive periods of development, the brain's circuitry is most open to the influence of external experiences, **for better or for worse.**
- During these sensitive periods, healthy emotional and cognitive development is shaped by responsive, dependable interaction with adults, while chronic or extreme adversity can interrupt normal brain development.

The experiences children have shape their brains!

- In the first three years of life the brain is growing faster than it ever will again.
- At times during the first year of life a million connections are forming every single second in a baby's brain.

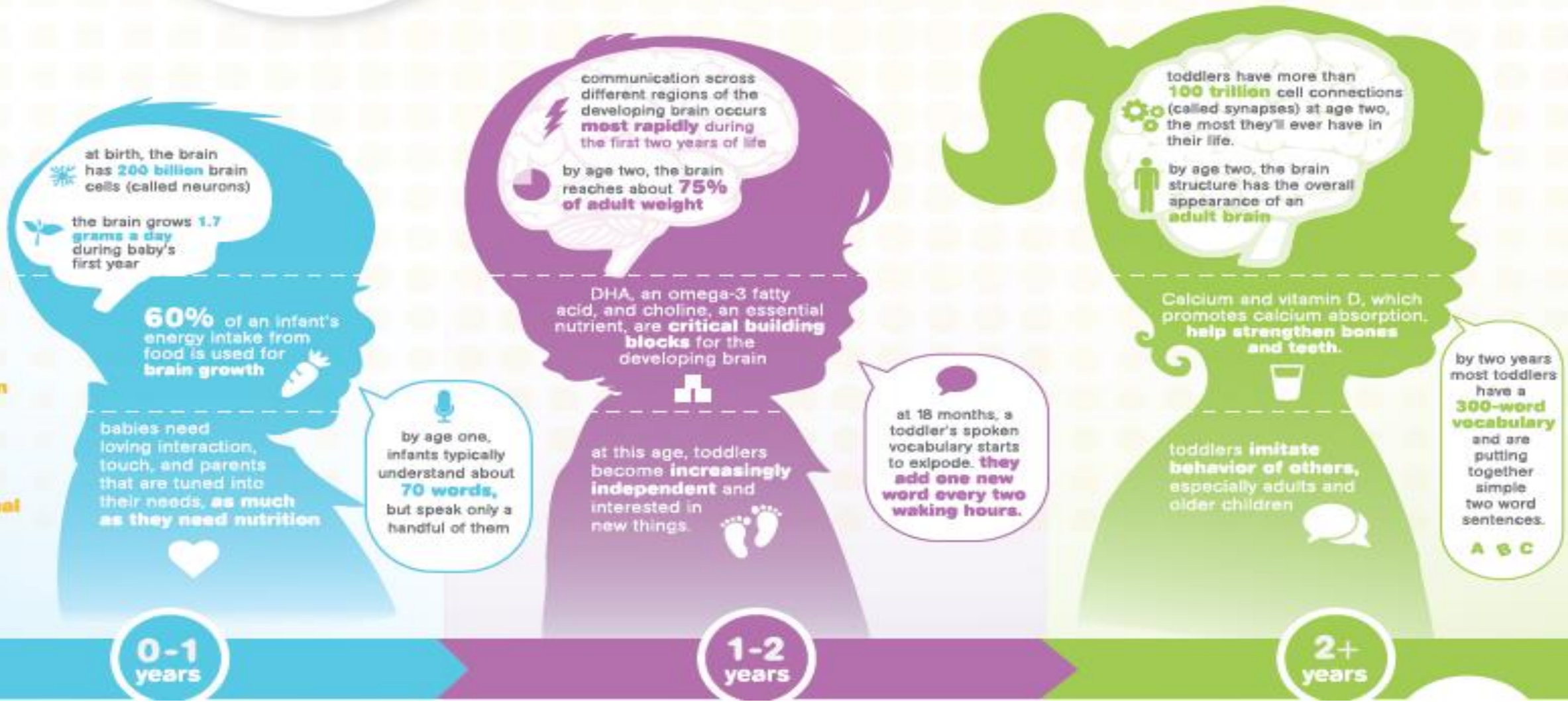
At full term birth the average baby brain weighs about 400-500 grams.

By one year old the average baby brain weighs 800- 1000 grams

Child Brain Development

GOOD NUTRITION LEADS TO MORE STABLE MOODS, INCREASES IN ABILITY TO PAY ATTENTION, AND IMPROVED MEMORY.

LOVING AND CONSISTENT CARE-GIVING LEADS TO A BRAIN THAT HAS AN ABILITY TO LEARN TO DELAY GRATIFICATION, PROBLEM SOLVE, AND HAVE EMPATHY FOR OTHERS.



Three Core Concepts in Early Development

1 Experiences Build Brain Architecture

NATIONAL SCIENTIFIC COUNCIL ON THE DEVELOPING CHILD
Center on the Developing Child HARVARD UNIVERSITY

Context of the Global pandemic and the world we currently live in

- Neuroscience gives evidence that human relationships/interaction are fundamental to our wellbeing, health and happiness.
- Restrictions imposed by the global pandemic limited human contact, socialisation and support.
- Kate Cairns explains - "Human wellbeing is founded on connectedness to other humans. We discovered this in a period of time when suddenly humans are starting to disconnect from other humans, and connect with a virtual world.”

Brains and relationships

Humans have evolved to be social beings

Humans have evolved to have big, complex brains

- Professor Robin Dunbar suggests these two facts are linked
- Brain size and complexity increase with the number of stable, meaningful social relationships maintained
- ‘Friends: Understanding the power of our most important relationships’, Dunbar, 2021

Community resilience provides the network of stable relationships that support healthy brain development throughout life

Brains and language

- Humans have evolved big complex brains and big complex social groups
- Bonding is an important part of establishing and maintaining social relationships in humans as well as in primates, our nearest evolutionary relatives
  - Shared bonding activity creates groups with stability
- Language allows bonding at a distance, and therefore makes larger stable groups possible
  - *'Grooming, Gossip, and the Evolution of Language', Robin Dunbar, 1996*

Survival from the start: attachment behaviours

Living things want to go on living and are born with survival behaviours

Human babies cannot survive without adult care

They are born with behaviours that grab the attention of adults to make sure the baby survives

Aversive behaviours – adult acts in order to get the baby to stop it

- At first only aversive behaviours are available to the baby
- We never lose our capacity to produce aversive behaviours

Attractive behaviours – adult acts in order to get the baby to do it more

- Babies begin to experiment with different ways to get a response
- Attractive behaviours are readily extinguished if no response

How the adult responds to these behaviours will pattern the baby brain, producing patterns that may persist lifelong (but can change!)

What do these behaviours look like in older children?
In the children in your care? In adults?

What triggers attachment behaviours?

The earliest (aversive) attachment behaviours occur when babies feel unsafe

- Scared, hungry, tired, uncomfortable, …

Feeling unsafe generates stress

- Babies are not born able to regulate stress

Unregulated stress is toxic to the human brain-and-nervous-system

- It puts us into survival mode, changing the way the brain-and-nervous-system works

All through life humans produce attachment behaviours when feeling critically unsafe

Stress regulation is an attachment need

Building brains
Humans are born to connect, mirror and match

- If attachment needs are met babies, feel safe and secure
  - The brain and nervous system of the baby mirrors the state of the brain and nervous system in the adult (attunement)
  - This attunement patterns the baby brain to develop self-regulation
- It takes twenty-five years for the human brain to reach maturity
  - Attachment needs are lifelong to keep brains working well

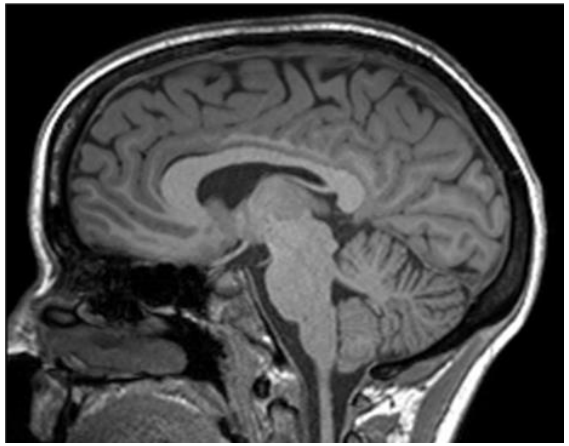
Three Core Concepts in Early Development

2 Serve & Return Interaction Shapes Brain Circuitry

NATIONAL SCIENTIFIC COUNCIL ON THE DEVELOPING CHILD
Center on the Developing Child HARVARD UNIVERSITY

The neuroscience of human development:

the brain develops from the bottom up and the inside out

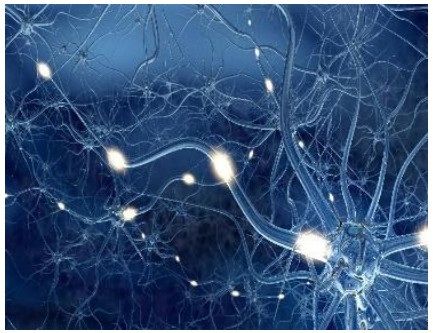


Behaviour is the evidence that a brain is working

Understanding how brains develop helps us to understand behaviour

The brain is made up of cells called neurons

The brain grows as neurons connect, and neurons connect based on what we experience



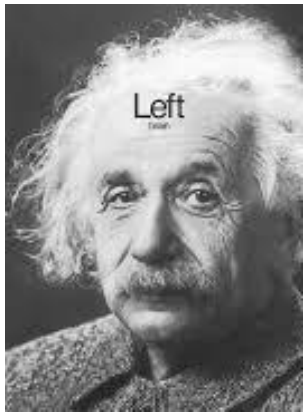
Brains are always changing and adapting

The brain develops from the bottom up and from the inside out.

- Reptilian – basic life-support functions
- Mammalian – motor functions, impulses, strong emotions
- Higher brain (human)- social, emotional and cognitive functions.
- Right hemisphere: social and emotional
- Left hemisphere: cognitive and rational

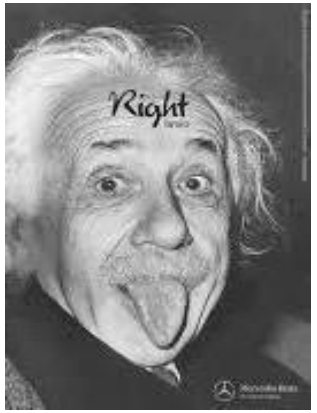
Left brain

- Turns information into words
- Gets rid of unwanted information
- Logical
- Rational and practical
- Analytic
- Conscious



Right brain

- Processes experience as images
- Stores memories
- Intuitive
- Emotional
- Creative
- Subconscious



Social brain, connected minds

The human brain-and-nervous-system exchanges information with other human brain-and-nervous-systems:

- **Sensory information** – what we see, hear, taste, smell and touch
- **Chemical information** – pheromones
- **Electrical information** – from the heart and other organs
- **Mirror neurons** – cells that replicate inside us what is happening inside another person

- All these form the organic basis for **empathy**, which is a higher brain function

The two sides of the nervous system and self-regulation

The nervous system has two distinct, though intricately linked, divisions

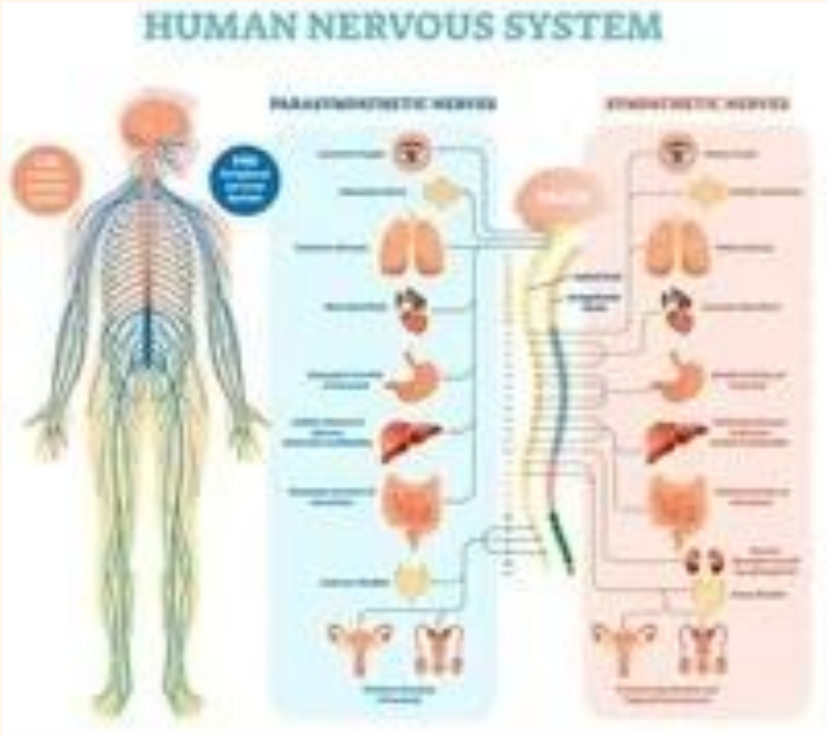
1. Arousal

- Turns on active, energy-using functions
- Turns off internal build-and-repair functions such as digestion

Escalation

- HPA (stress) axis
  - adrenaline, cortisol, etc.
  - rising blood pressure
  - shallow breathing
  - increased muscle tension

The limbic brain is in charge



2. Calming

Turns on internal build-and-repair functions

Turns off active, externally focused use of energy

De-escalation

- Vagus nerve
  - oxytocin, dopamine, etc.
  - lowering blood pressure
  - deeper breathing
  - reduced muscle tension

The cerebral cortex is back in action

These two need to be in **balance** to enable brain function

both conscious and automatic self-regulation

If unable to self-regulate, we need someone to co-regulate

We help each other to maintain **optimal brain function**

Self-regulation and co-regulation

- Young children need some regulation by others, or ***'co-regulation'.***
- An example of this is when an adult and child adapt to each other's emotions. This happens when the adult tunes in to the child's emotions.
- Tuning in can help children to manage their impulses, anger or distress.
- Emotional self-regulation means experiencing, and also managing your feelings.

Three key processes

- There are three processes contributing to baby brain development
  - Soothing
  - Stimulation
  - Mindfulness
- **Mindfulness** enables the parent to choose whether to **soothe** or **stimulate**, creating patterns which shape the growing brain

What do we need from other brains?

Building and maintaining healthy brains

- lifelong development

Co-regulation

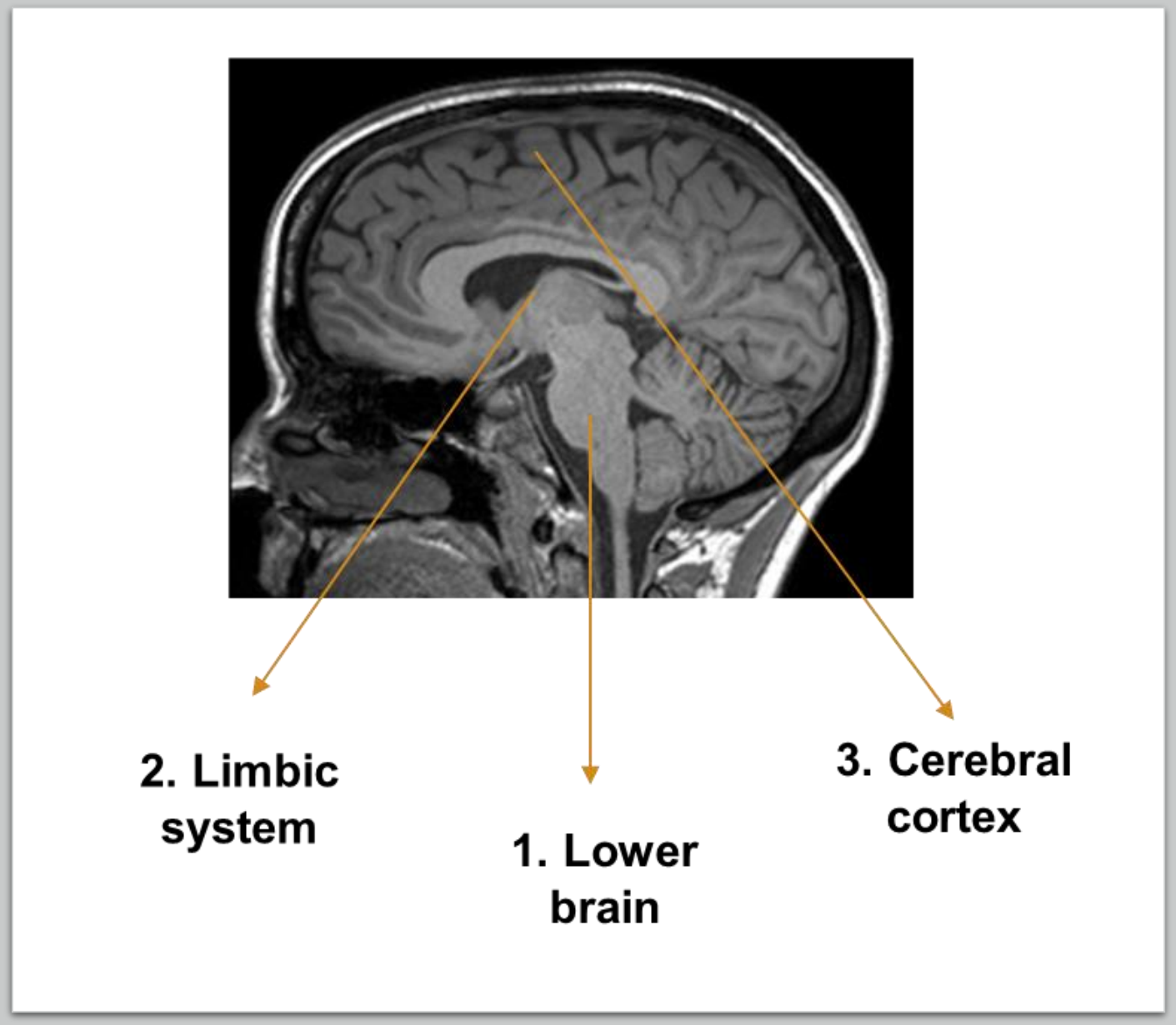
- Connecting and settling the nervous system

Guidance

- Activating the brain through non-verbal and verbal communication

Support

- Enabling social connection with the relationship network



Self Regulation

- *Self-regulation is the ability to self-monitor and exercise control over one's behaviour, thoughts and emotions and change them according to the demands of a situation.*
- *The cognitive elements of self-regulation are a range of skills known as executive function, while metacognition is considered to be responsible for the behavioural output of self-regulation.*

Self-regulation is a strong predictor of socio-emotional well-being, school readiness (Williams et al., 2016), academic performance and healthy socialising among peers (Blair et al., 2002).

Effective pedagogy for self-regulation and metacognition

- *Providing the children with emotional warmth & security;*
- *Giving children a sense of autonomy and feelings of control;*
- *Providing cognitive challenge;*
- *Supporting children to talk about their learning so that they become more aware of their own mental processes of thinking and learning.*

(Whitebread & Coltman, 2011, Siraj et al., 2015)

Self-regulation and metacognition

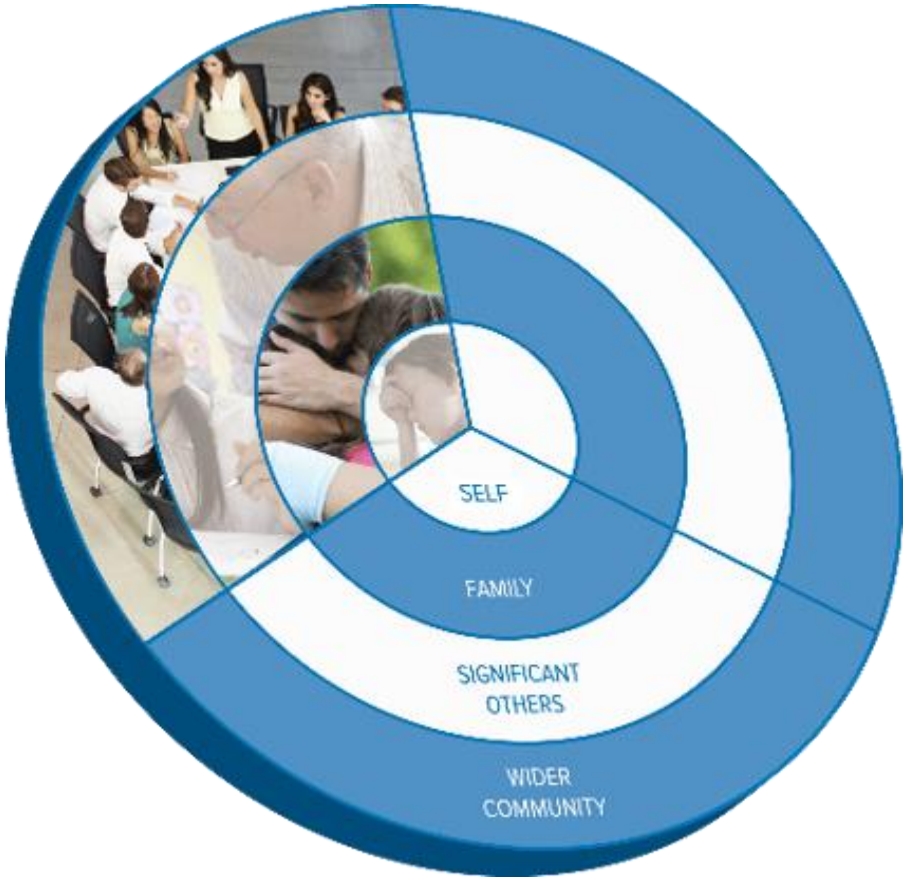
- There is still a lot for us to learn about how to support children's self-regulation, however, we do know that it is critically important for children's early learning. It is also vital for their lifelong mental health and well-being.
- Self-regulation depends on both nature and nurture. As the brain and nervous system develop, children need positive experiences of care, communication and play.




Early Brain Development

The Window of Tolerance Animation by Beacon House

So children need their parents, and their parents need …?



… a supportive community around them if they are to manage the challenges of parenthood and be able to appreciate the joyful moments.

And the more vulnerable the family, the greater the need for that resilient supportive community.

All parents are vulnerable some of the time, and some parents are vulnerable most, or even all, of the time.

As the African proverb says, "it takes a village to raise a child."

Five to Thrive is a neurological sequence …

… of five activities that can be observed **every time** someone connects with another person to meet an attachment need

- Responding and assessing needs
  - Five to Thrive key word: **RESPOND**
- Connecting and engaging
  - Five to Thrive key word: **ENGAGE**
- Self-regulating stress
  - Five to Thrive key word: **RELAX**
- Being playful: activating the right brain
  - Five to Thrive key word: **PLAY**
- Creating a narrative: activating the left brain
  - Five to Thrive key word: **TALK**

But it can also be useful to think about each of the five activities separately

It helps to identify sticking points in providing emotional nurture

- If one block is missing the whole tower falls

It enables exploration and practice of specific activities

- Each activity has value in its own right

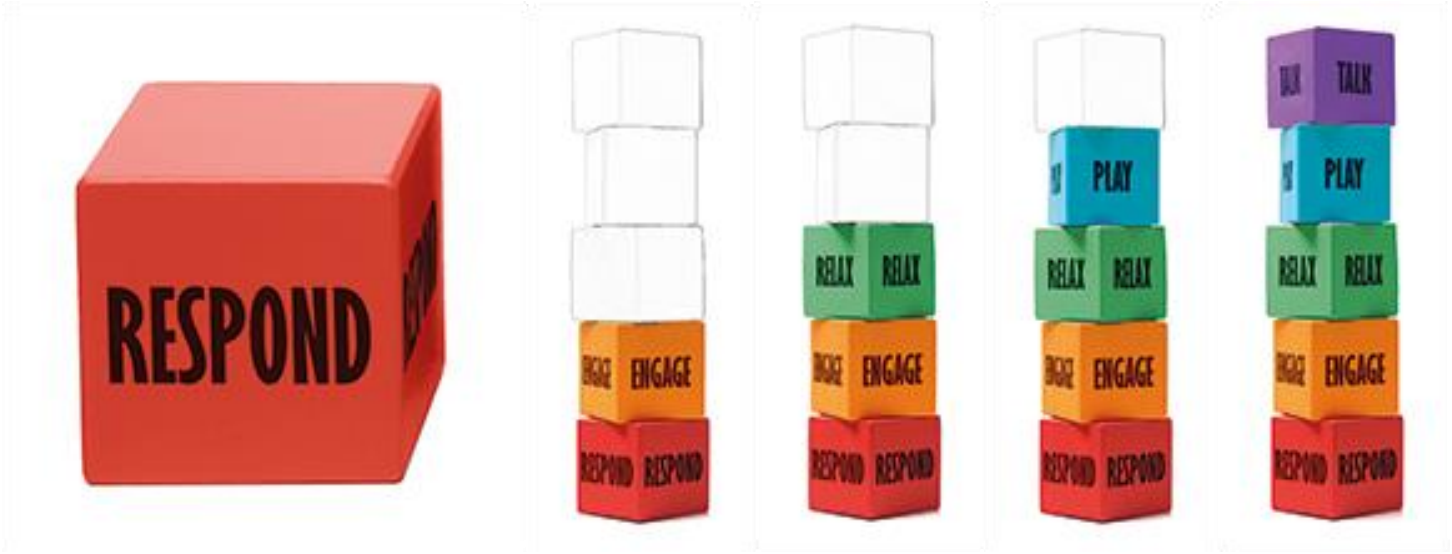
Five to Thrive is …

... a **model** which enables us to **notice** what goes on in interactions between people

... an **approach** which enables us to **be** a meeter-of-needs in our interactions with other people

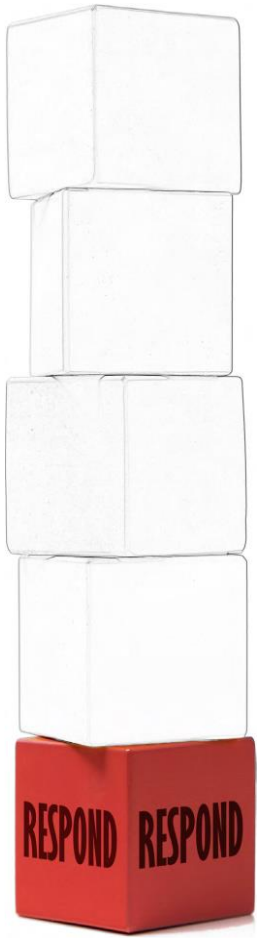
... a **framework** which enables us to **teach** others about the part they play in brain development.

Respond: accepting the emotional dysregulation



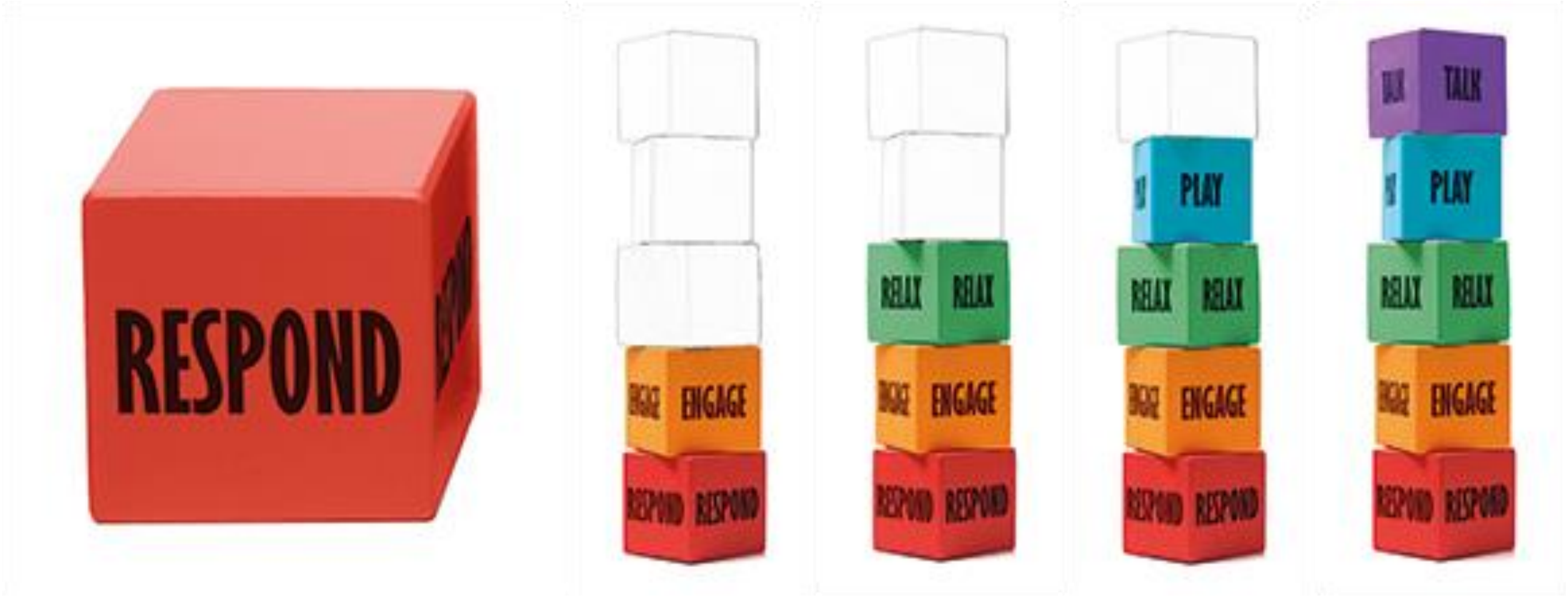
- When we respond to another person who is overwhelmed we accept the dysregulation of stress and emotions into ourselves so that we can transform it through our capacity to self-regulate
- So first we **receive** information and energy from them and then we switch ourselves on to **transmit** vital information and energy to them. Responding is this switching on to the internal world of the other person

“I feel very scared if I get no response from you. When you look at me with love in your eyes I feel safe. Your voice helps me to feel safe. Being close to you helps me to feel safe.”



Noticing, being, teaching

- Think about:
  - Noticing responsiveness
  - Being responsive
  - Teaching others about the importance of responsiveness



Engage: making the link

- It is the co-regulating person who does the engaging, ensuring that connection can be made within the particular zone of tolerance on that day at that time
  - Physical proximity, eye contact, touch (effective, may overwhelm)
  - Position, posture, voice tone
  - And so on

“When I am close to you my body begins to work in tune with yours. Connections are building in my brain that will make it possible for me to control my body one day.”

Noticing, being, teaching

Think about:

- Noticing engagement
- Being engaging
- Teaching others about the importance of engagement

Relax: transforming the emotional dysregulation

- All day every day our brain-and-nervous system is keeping us in balance physically, emotionally and socially. This balance is essential for our brains to function well
- Yet none of us is born with the ability to self-regulate. At the start of life we need our attachment figures to regulate our internal state with us because we can't do it on our own. All through our life we will need other people who care about us enough to co-regulate with us when we become overwhelmed.

“I know that having a child is stressful. But if you can find ways to relax when you are with me, you can make a big difference to the way my brain works.”

Noticing, being, teaching

Think about:

- Noticing self-regulation and co-regulation
- Being self-regulating and able to co-regulate
- Teaching others about the importance of co-regulation

Play: activating the social and emotional brain through non-verbal communication

- The whole give-and-take of respond-engage-relax is received and processed by the social and emotional brain of the co-regulator
- This brain activity is transmitted by changes in the face and body – non-verbal communication
- Which switches on social and emotional brain activity in the other person, so that they too become able to make sense of what is happening

“I need you to soothe me when I’m upset, but I also need you to make life interesting for me. Toys are great, but the best toy in the world for me is… you!”

Noticing, being, teaching

Think about:

- Noticing playfulness (authentic non-verbal communication)
- Being playful – your own non-verbal communication
- Teaching others about the importance of playfulness

Talk: activating the cognitive rational brain through verbal communication

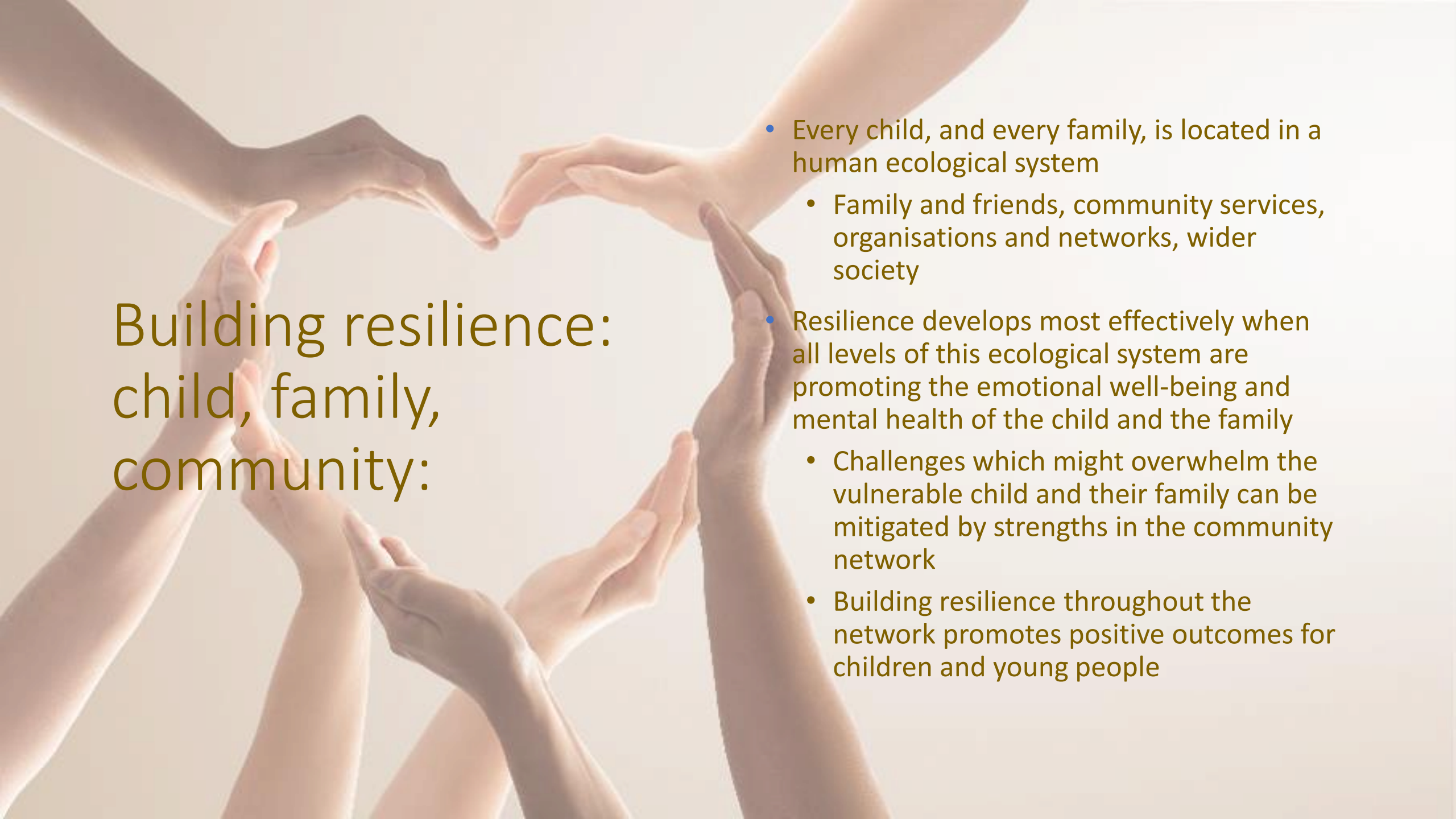
- Long before children can talk, the words adults use while responding, engaging, relaxing and playing are helping to build and shape the brain
- People often report the great power – for good or ill – of things said to them by other people when they were overwhelmed
- So in these interactions we need to:
    - listen carefully and with empathy
    - talk honestly and sensitively
    - be undeterred if the other person seems switched off, unresponsive or ungrateful!

“The more you talk to me the more I can make sounds into words… Everything I learn in my life will be built on what you are teaching me now.”

Noticing, being, teaching

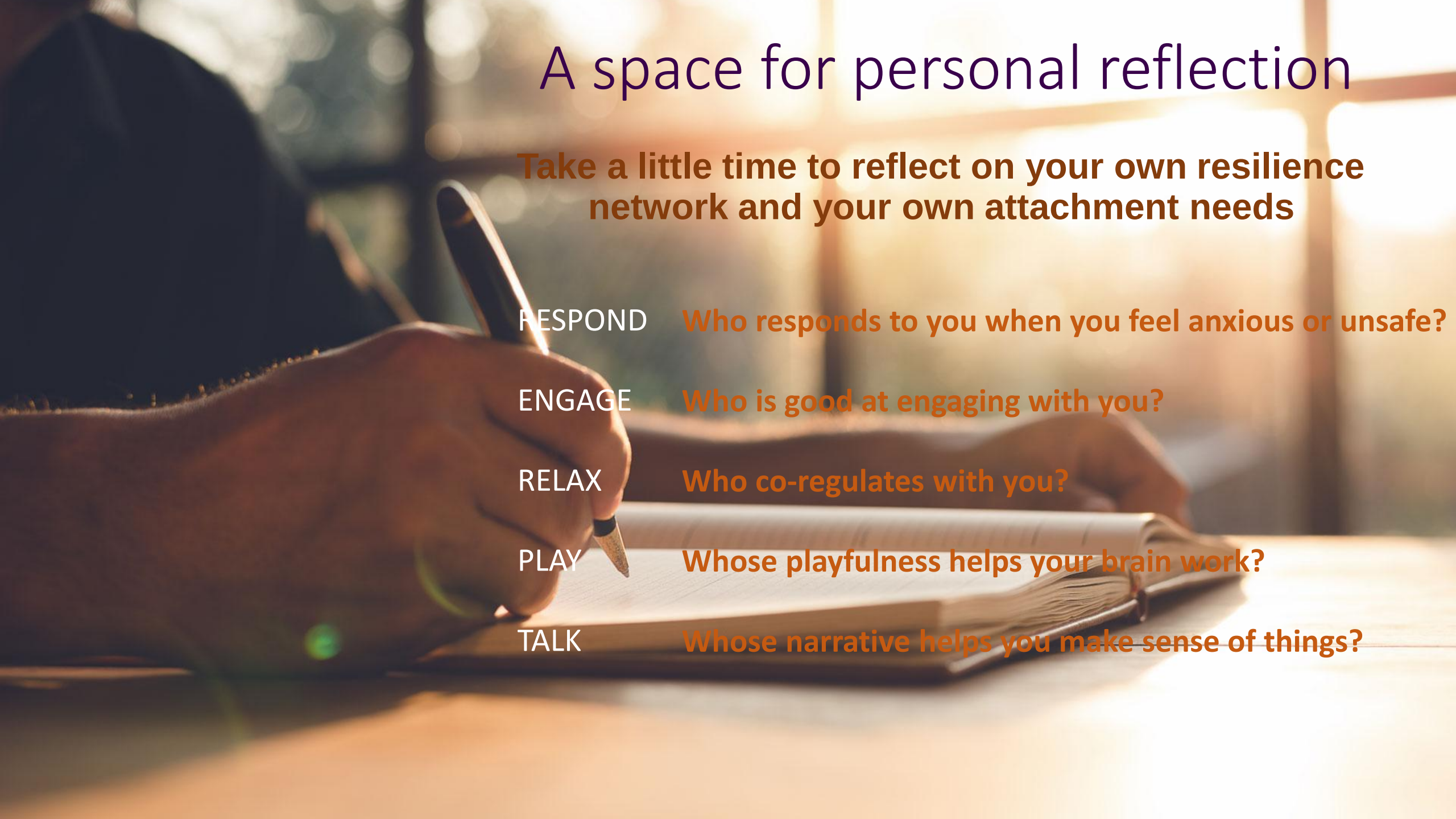
Think about:

- Noticing verbal communication
- Being a good verbal communicator
- Teaching others about the importance of verbal communication



Building resilience: child, family, community:

- Every child, and every family, is located in a human ecological system
  - Family and friends, community services, organisations and networks, wider society
- Resilience develops most effectively when all levels of this ecological system are promoting the emotional well-being and mental health of the child and the family
  - Challenges which might overwhelm the vulnerable child and their family can be mitigated by strengths in the community network
  - Building resilience throughout the network promotes positive outcomes for children and young people



A space for personal reflection

Take a little time to reflect on your own resilience network and your own attachment needs

RESPOND	**Who responds to you when you feel anxious or unsafe?**
ENGAGE	**Who is good at engaging with you?**
RELAX	**Who co-regulates with you?**
PLAY	**Whose playfulness helps your brain work?**
TALK	**Whose narrative helps you make sense of things?**

What does this mean for you and your team?

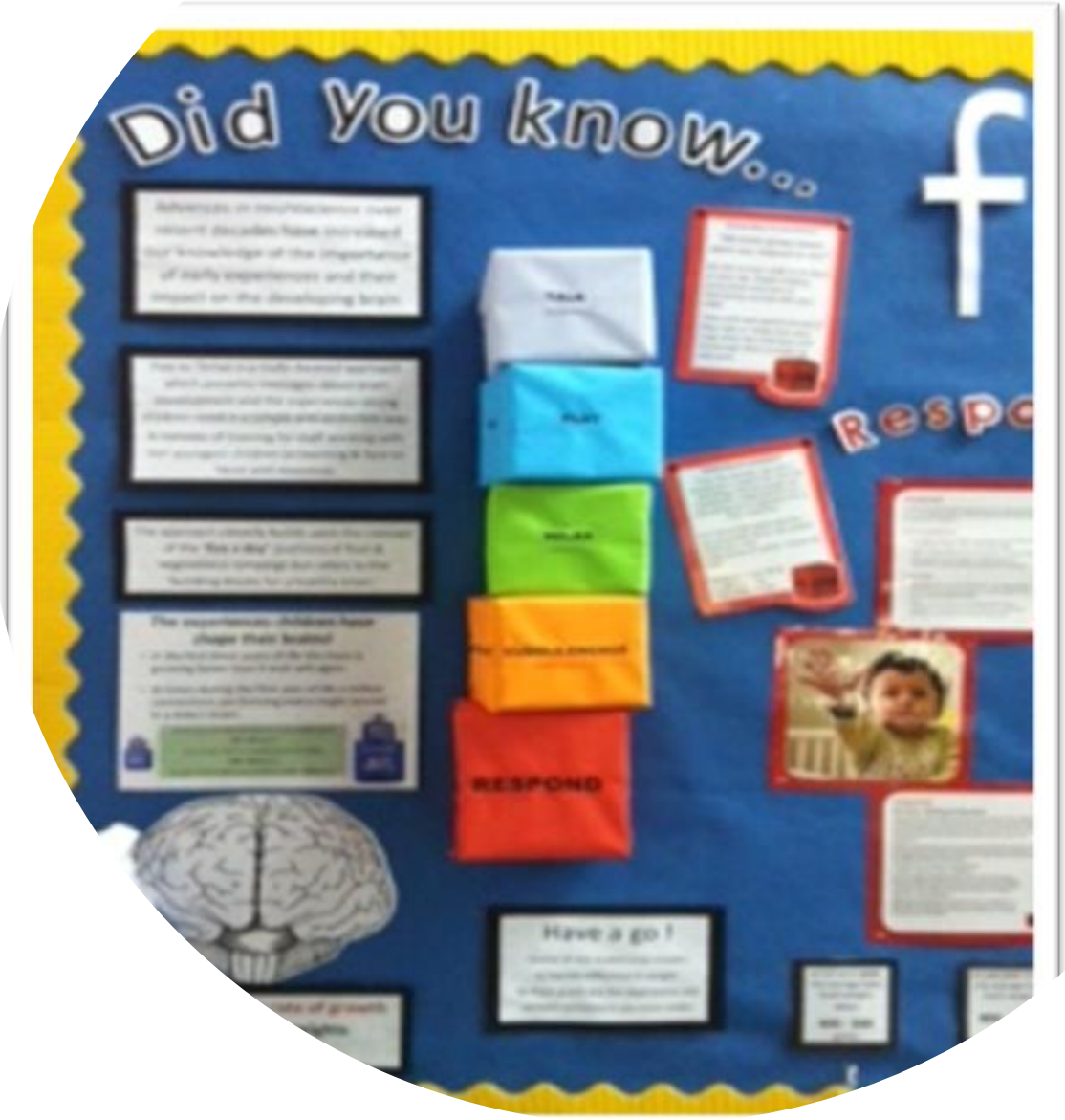
- This is not addition to your everyday work – it is just a way of recognising and reinforcing best practice
- How will you embed the **Five to thrive** ethos within your practice?

✓Staff – knowledge and implementation (**modelling**)

✓Parents – delivering key messages by supporting, acknowledging and reinforcing the sequence.

✓Environment – raising awareness through display board etc.

✓Over time: note changes and celebrate the impact the strategy is having with children and families



Evaluation

Considerations:

- We are all the product of this process and have our own attachment histories, experiences and neural pathways that have conditioned the way we live our lives today.
- **Impact:** Self-evaluation and analysis of our own attachments and relationships (for practitioners – and parents)
- Sensitivity to material and exemplification of where positive parenting has not occurred.
- Awareness of our role in being uniquely placed to promote best practice and key messages.

To finish –

When the sequence really works.