

Welcome!

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Module 1
The Human Brain & How It Learns
Essential Pedagogy 1

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What can you see?

“The real voyage of discovery consists not in seeking new landscapes, but in having new eyes.”
Marcel Proust

@ManjitSpeaks

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10 Learning Essentials

- A learner's potential is unknowable
- Each learner is unique
- A curious mindset allows learners to achieve more
- Learning is active
- The best learning environments are high in challenge and low in threat
- Emotions are central to the learning process
- Each one teach one
- Learning is social
- Unconditional respect is part of building learning relationships
- Reviewing and reflecting with purpose, secures the learning

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YOUR BRAIN AND MY BRAIN UNCOVERED


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Getting to know you all...

“I am not what you see. I am what time and effort and interaction slowly unveil.”
Richelle E. Goodrich

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Amygdala



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Make mistakes
Ask questions
Share ideas
Have fun



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BREAKOUT 1
20 MINS

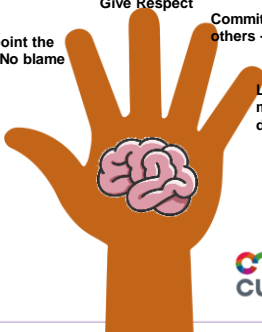


What do we know?
What do we think we know?
What do we know, that we don't know?


EEO powered by BCLAB / SIFT

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HAND RULES



- Give Respect
- Commitment to others - team
- Little things make big differences
- DON'T point the finger - No blame
- Positive attitude



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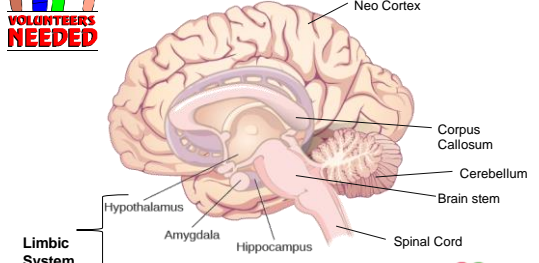
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Let's Make a brain!

VOLUNTEERS NEEDED



- Neo Cortex
- Corpus Callosum
- Cerebellum
- Brain stem
- Spinal Cord
- Hypothalamus
- Amygdala
- Hippocampus
- Limbic System



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Hand Model of the Brain (Dr Daniel Siegel)

Handy Model of the Brain

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STEP BY STEP

Language
Logic
Analysis

BIG PICTURE

Visual/Spatial
Musical
Creativity

1

The Brain is a Parallel Processor

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Simple brain friendly strategies

- Combine music, words and physical actions**
- Use stories, metaphors and images**
- Games & playfulness**
- Talk & Explain**

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Our brain and visuals

Using the visual space in the classroom

- Cognitive waiting room
- Uses brains ability to make patterns
- Content of whole curriculum not hidden
- Works at conscious and sub conscious level
- Brain - 90% info visual sources
- Positive affirmations

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Our brain and music

'Millions of neurons can be activated in a single musical experience. Music has an uncanny manner of activating neurons for purposes of relaxing muscle tension, changing pulse, and producing long range memories which are directly related to the number of neurons activated in the experience.'

Don Campbell 1983

Why not try...

- ✓ Start of the training music to get into a positive frame of mind – energizer.
- ✓ Music for down time – for adding to memory maps, explaining work to each other, jotting down thoughts
- ✓ Music for clearing up time
- ✓ Music to accompany timed activity
- ✓ Music for relaxation
- ✓ Music for celebration

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2 STRESS inhibits learning

Scan of a brain showing the closing down effect of the neo cortex

Scan of a brain in normal activity

From: Accelerated Learning in the classroom by Alistair Smith

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3 Brain is NOT fully wired until mid twenties

CAUTION

TEENAGER
IN THE HOUSE
Brain under construction

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MIRROR NEURONS

4 **LEARNING IS SOCIAL**
We learn through imitation and observing those around us

“Don’t worry that your children don’t listen to you. Worry that they are watching everything you do”
Weatherley
cited in Corrie: Becoming Emotionally Intelligent

WE ARE WIRED FOR RELATIONSHIPS

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The science...

VERBALISING
Cements
MEMORY

WE ARE WIRED FOR RELATIONSHIPS

The best way to **LEARN** is to **TEACH**

More Learning in Less Time
Make the Student the Teacher
TEACH

curious minds

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HOW LEARNING HAPPENS
The Power of Relationships in School

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WE ARE WIRED FOR RELATIONSHIPS

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STRONG RELATIONSHIPS
Are central to the learning process.

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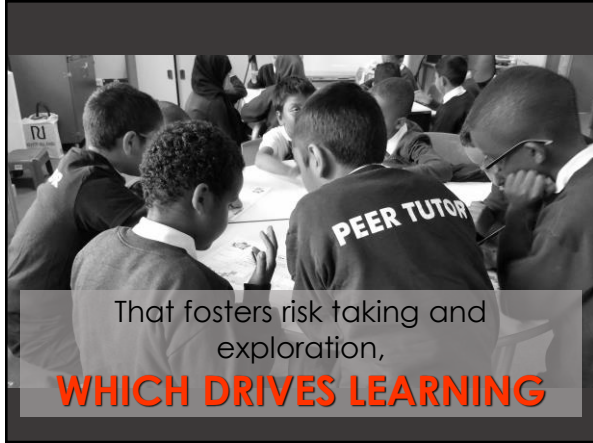
HEALTHY ATTACHMENT
Helps build a safe environment.

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Positive relationships create,
OPTIMAL CONDITIONS
for learning.

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That fosters risk taking and
exploration,
WHICH DRIVES LEARNING

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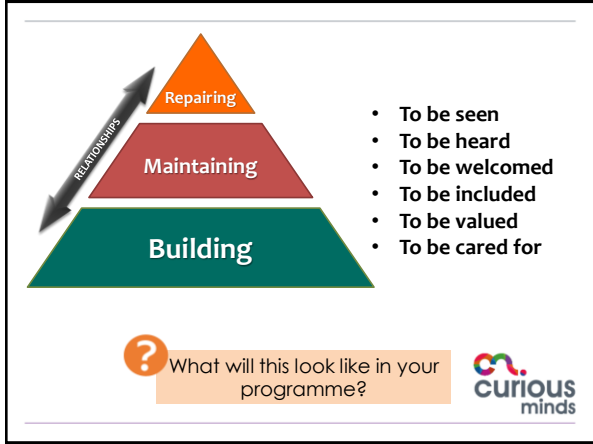
Being vulnerable and showing
YOUR AUTHENTIC SELF
Strengthens bonds with students.

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Students who feel
SAFE AND SUPPORTED
Are more likely to perform
better academically.

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MISTAKES
are just proof that you are
TRYING

WHAT HAVE YOU LEARNED ?

DON'T FORGET....
70 % of what you learn is forgotten in 24 hours, about 40 % is forgotten immediately!
YOU MUST REVIEW REGULARLY

5 We Learn through trial & error
Our brain pays more attention when we get things wrong – making mistakes is part of learning!
Reviewing & Reflecting on learning secures it.

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Take a
15 minute break



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You can only grow if you are willing to feel awkward and uncomfortable when you try something new.
Brian Tracy


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Exploring our
comfort zones

comfort zone

panic zone


challenge zone



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Exploring our comfort zones

<p>COMFORT ZONE</p> <p>Nothing new Boredom What I do all the time</p> <p style="color: red;">No learning</p> <p style="color: white; border: 1px solid white; border-radius: 50%; padding: 5px; display: inline-block;">This is OK</p>	<p>CHALLENGE ZONE</p> <ul style="list-style-type: none"> • Overcome fears • Learn about yourself • Belief in own ability • Chance to change your beliefs • You believe in others to support you <p style="color: white;">New Learning</p> <p style="color: white; border: 1px solid white; border-radius: 50%; padding: 5px; display: inline-block;">I am not comfortable but I am willing.</p>	<p>PANIC ZONE</p> <ul style="list-style-type: none"> • No belief in your ability • Little trust in others to support • Flight, Freeze, Flock, Fight <p style="color: white;">No learning</p> <p style="color: red; border: 1px solid red; border-radius: 50%; padding: 5px; display: inline-block;">I am not willing!</p>
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The relationship between challenge & feedback

“A teachers’ job is not to make work easy. It is to make it difficult”.

“If you are not challenged, you do not make mistakes. If you do not make mistakes, feedback is useless.”

John Hattie




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Mirror Neurones

“Don’t worry that your children don’t listen to you. Worry that they are watching everything you do”

*Weatherley
cited in Corrie: Becoming Emotionally Intelligent*



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Why are they so weird?

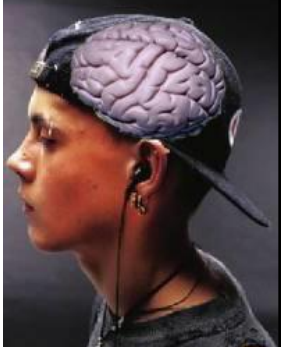


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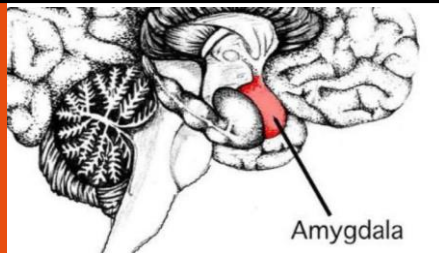
Why can't they act like adults?

They can't act like adults because **they don't think like adults**. The adolescent brain is still under construction.

Teenager's brains are growing and changing by adding gray matter and pruning synapses.



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TEENAGERS

Rely more on Amygdala than Frontal Cortex

- Likely to misread & confuse feelings
- Likely to over react
- Feel more intensely
- Amplify negative emotions
- Remember feelings above all else

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Waiting for the Frontal Lobes

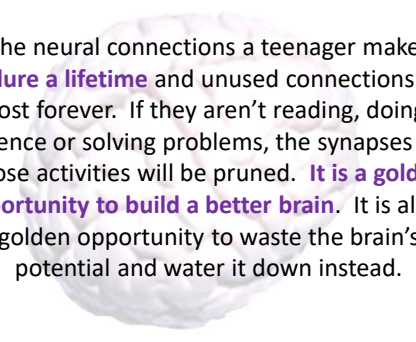


- **Frontal Lobes are the last part of the brain to mature** (mid 20's)
- Frontal lobes are in charge of higher level thinking. Adults rely more on the frontal lobes of their brain and less on the amygdala, and therefore respond more logically to situations.
Teenagers can't think like adults
- The frontal lobes also influence language.
Teenagers struggle to express themselves

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Really IMPORTANT!

The neural connections a teenager makes **endure a lifetime** and unused connections are lost forever. If they aren't reading, doing science or solving problems, the synapses for those activities will be pruned. **It is a golden opportunity to build a better brain.** It is also a golden opportunity to waste the brain's potential and water it down instead.



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Teenage years: An Opportunity!

More passionate
More empathetic
More creative & courageous
More flexible



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Implications for your work...

Using the learning from the brain, what will you....


STOP (Red light)

CONTINUE (Yellow light)

START DOING (Green light)


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See you next time!

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Module 2
Building a mindset for LEARNING



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