



Digital Diets and Screen Time: The impact on brain development and future academic success

Nurturing Developing Minds

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Disclosures

Financial –

- Author, *The Pirate Who Couldn't Say Arrr*
- Author, *Simply Social At School*
- Author, *TeachersPayTeachers*
- Author, *Spelling That Makes Sense*
- Presenter, *SpeechPathology.com*
- Presenter, *Bureau of Education Research (BER)*

Non-Financial – Nothing to disclose.



For every 30 minutes of screen time
there is a 49% increased risk of
expressive speech delay
(Birkin, 2017).

AAP Recommendations

Less than two hours per day for children ages 5-18

No more than one hour a day for children age 2-5

None for children younger than 18 months of age

Excessive screen time can impinge on children's ability to develop optimally; it is recommended that pediatricians and health care practitioners guide parents on appropriate amounts of screen exposure and discuss potential consequences of excessive screen use. (Madigan et al., JAMA Pediatrics, 2019)

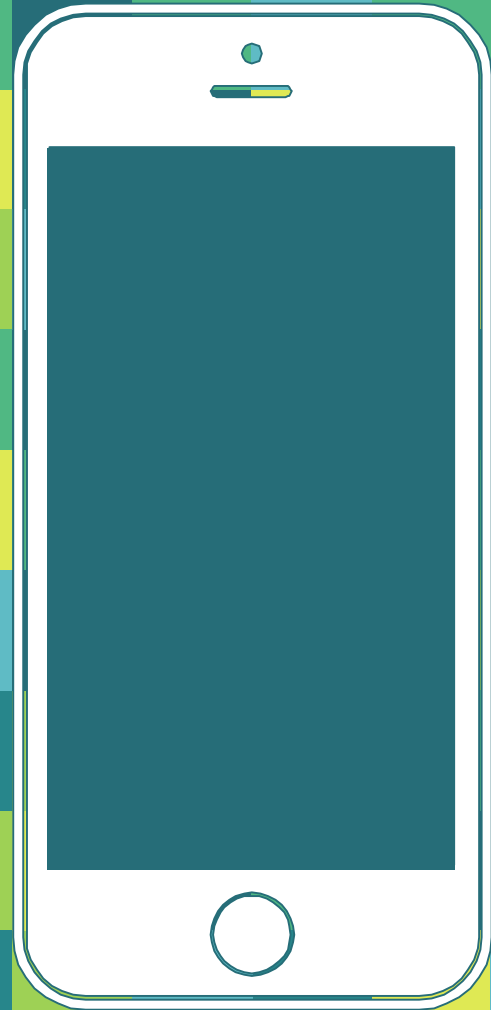
The use of mobile devices in children has risen from 5 minutes a day in 2011 ... to 48 minutes per day in 2017.



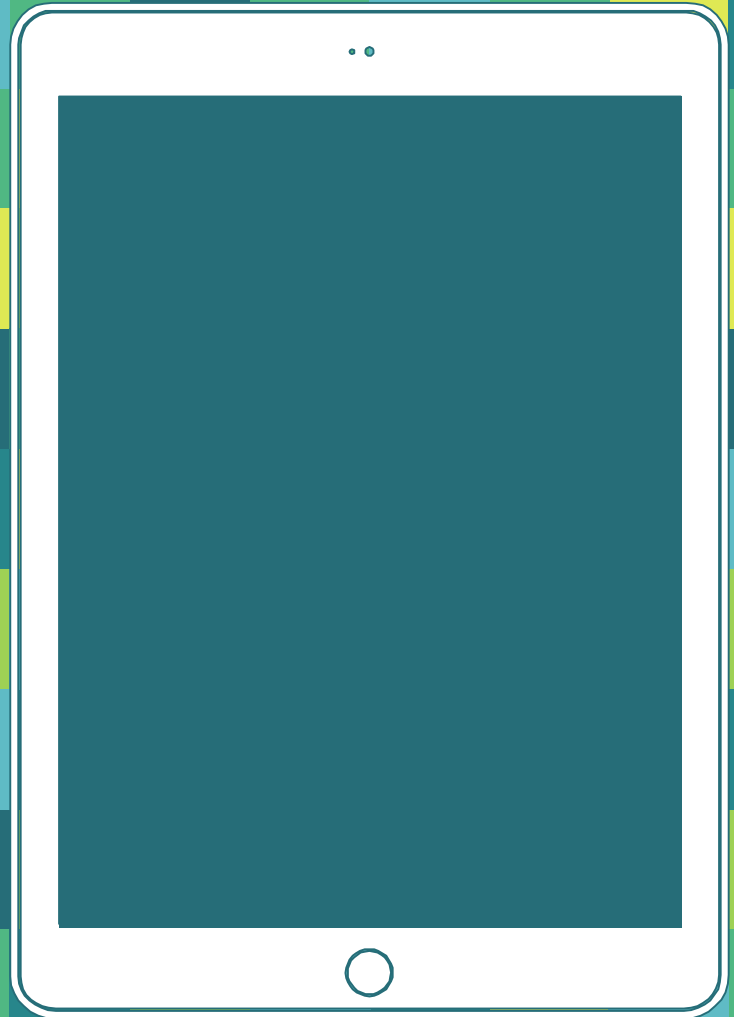
In 2017, 1 in 5 children
age three to four had
their own tablet.

In 2013, 72% of
children age eight and
under use tablets or
smartphones...

In 2011, it was 38%.



40% of children
under the age
of two were
using tablets or
smartphones
before they
could speak.



What this looks like...



Increases in Incidence and Prevalence of Autism Spectrum Disorders

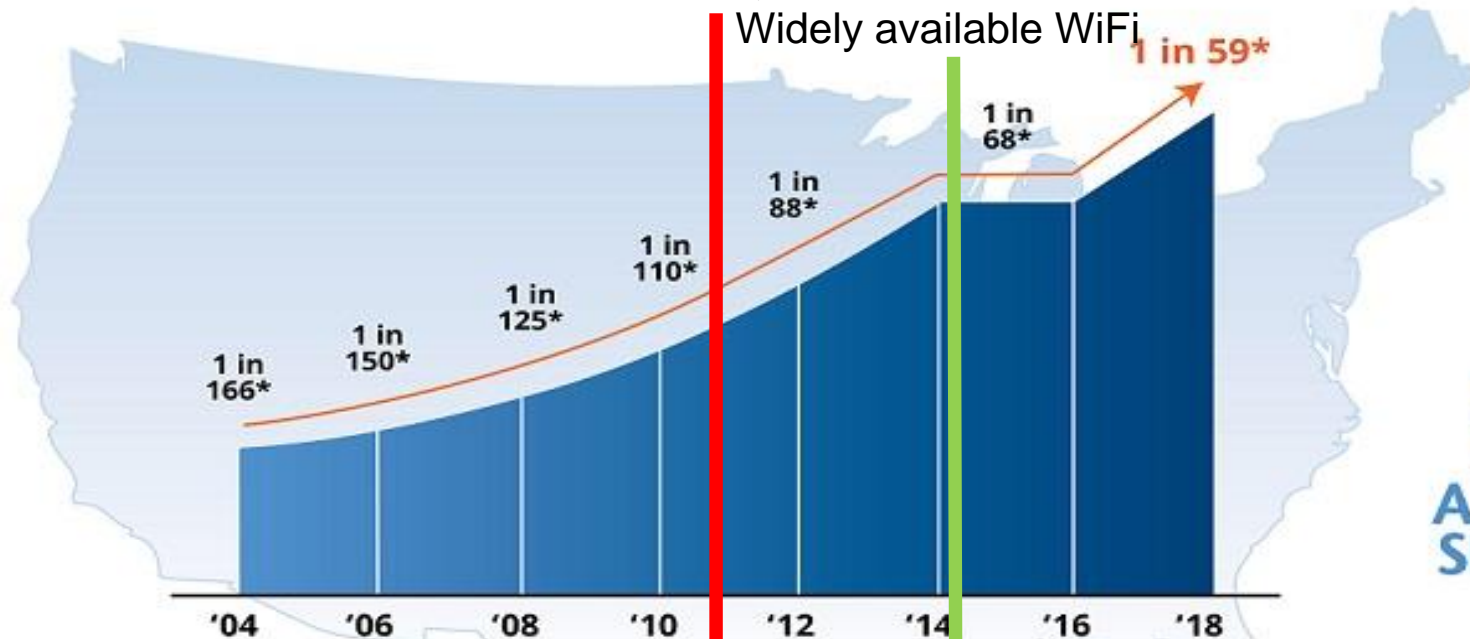
- Nationally, 1 in 59 children had a diagnosis of Autism Spectrum Disorder by the age of 8 (2014). This is a 15% increase over 2012.
- In the 2000-2001 school year, the number of children age 3-21 receiving SPED for Autism was 93,000. In 2014, it was 576,000.

Its **not** that technology causes ASD, but disproportionate exposure during critical periods can negatively impact the development of social communication, social-emotional skills and behavior.

Estimated Autism Prevalence 2018

iPad introduced 2010, Kindle Fire 2012

Widely available WiFi



* Centers for Disease Control and Prevention (CDC) prevalence estimates are for 4 years prior to the report date (e.g. 2018 figures are from 2014)



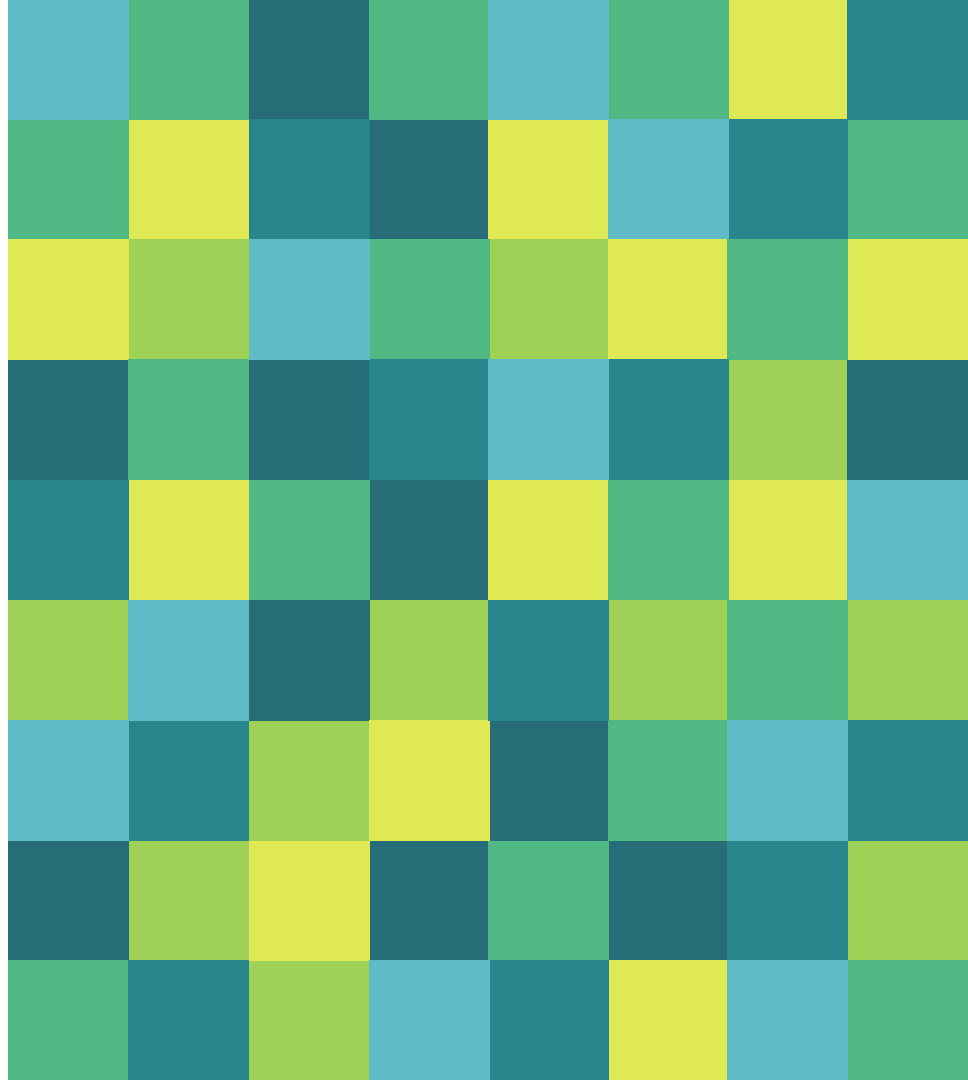
There are over 700,000
educational apps...

But do they actually help
children educationally?

1.

Dopamine

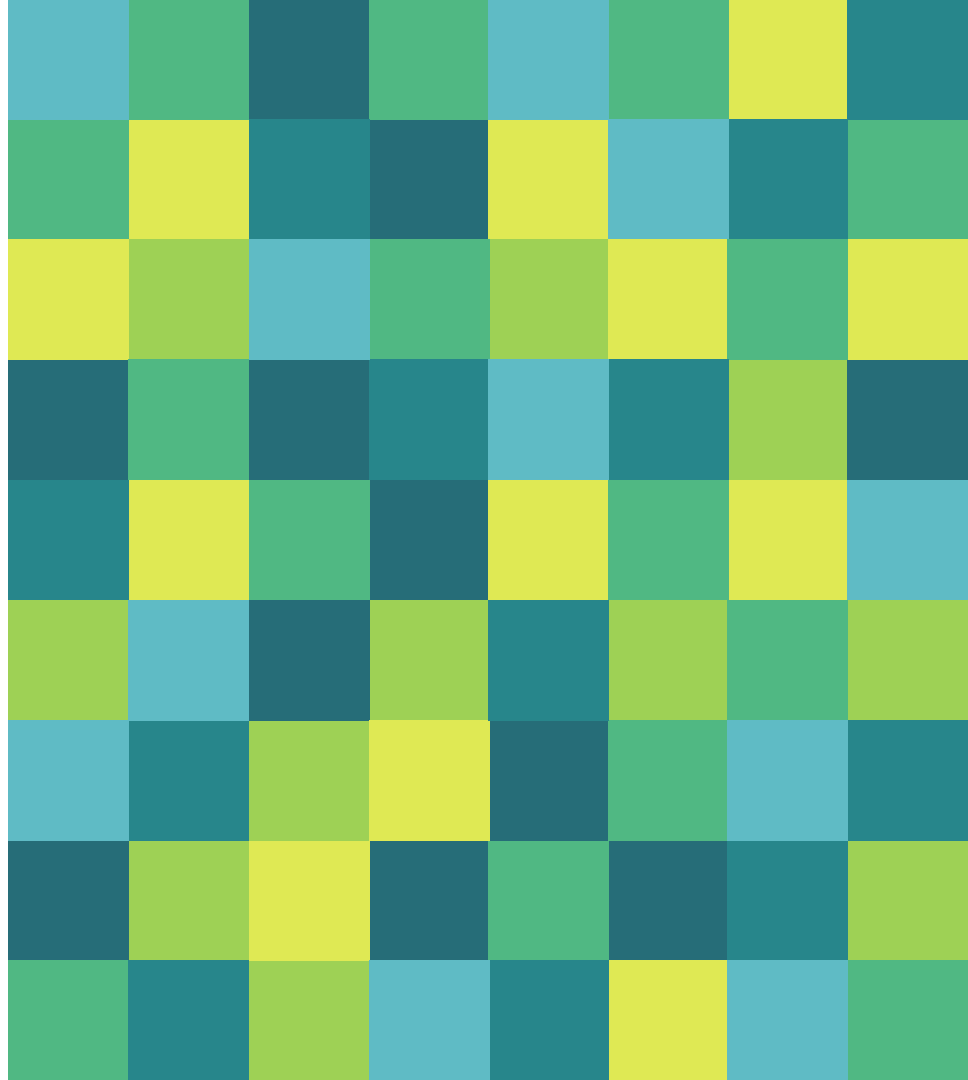
Motivation and reward



2.

Frontal Lobe

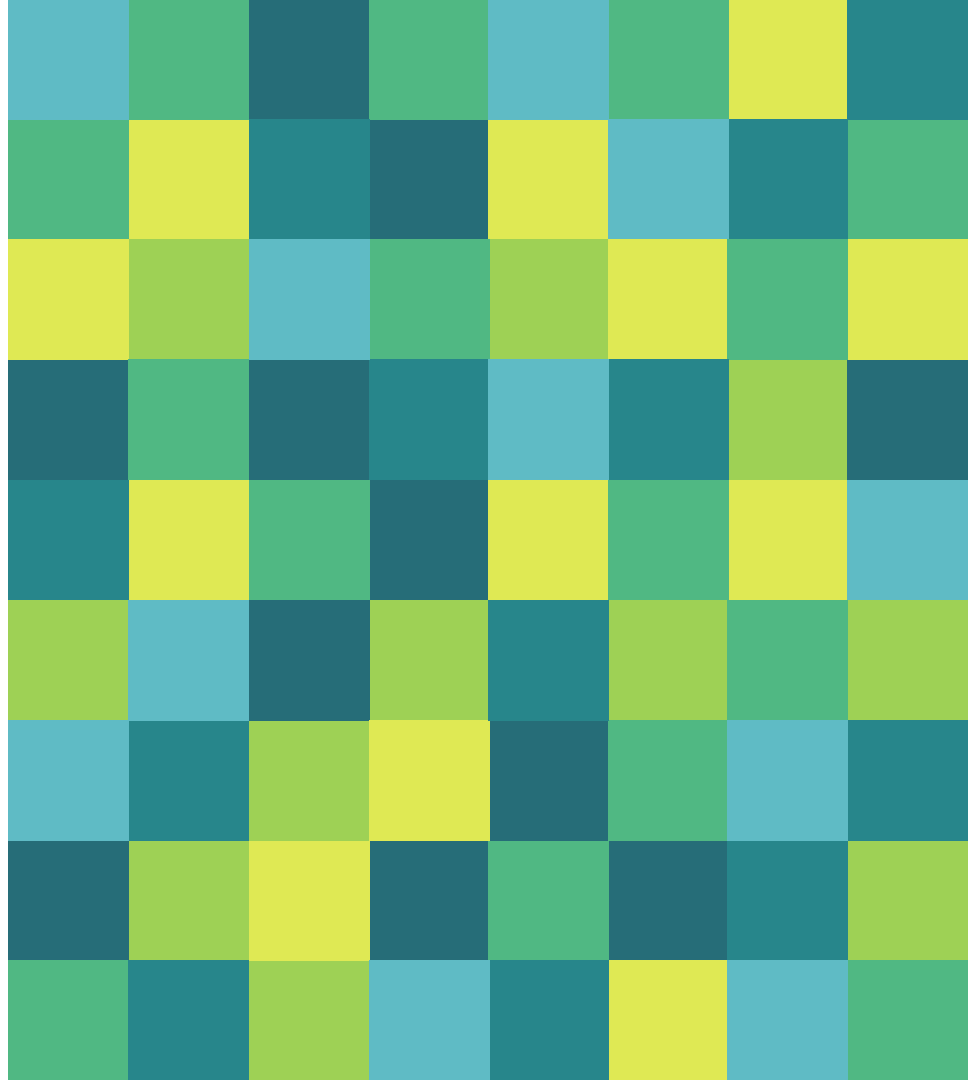
Modification of emotions to fit socially acceptable norms



3.

Executive Function

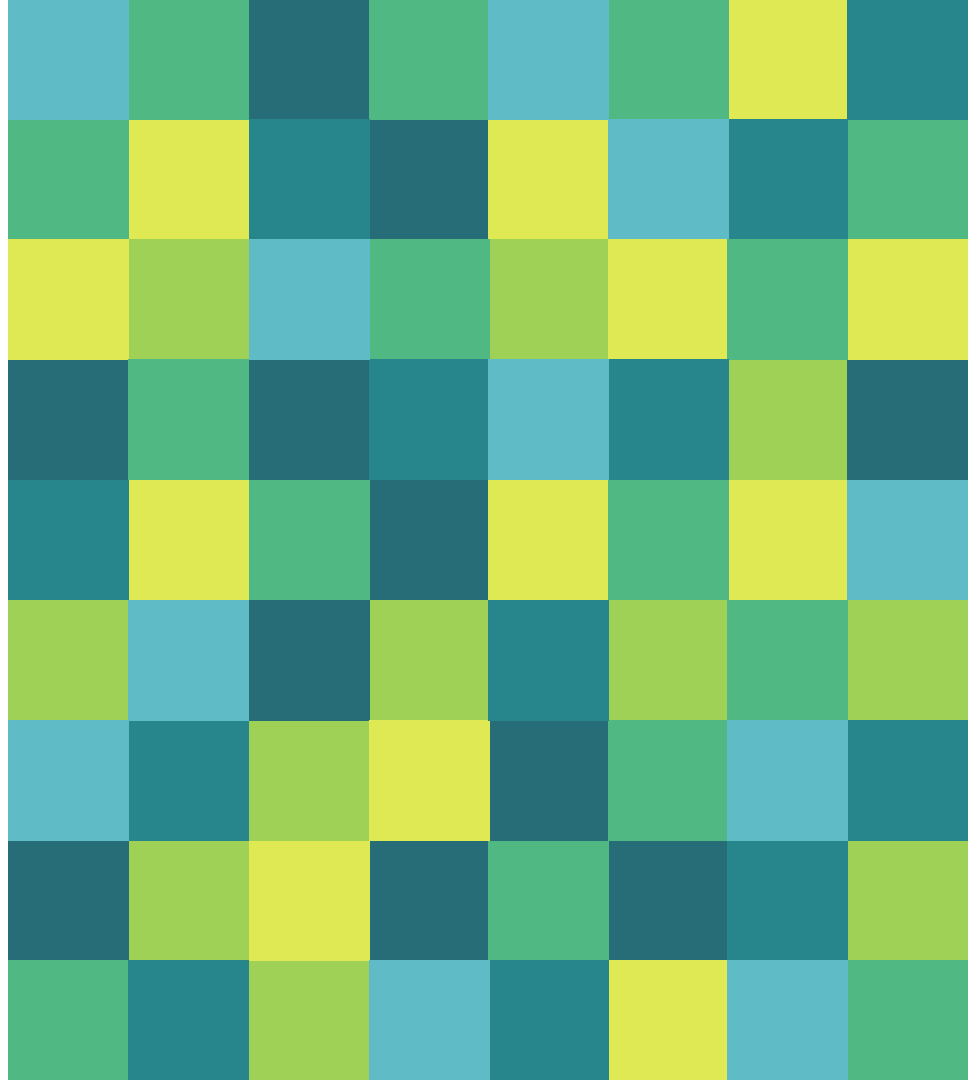
The “CEO” of the brain



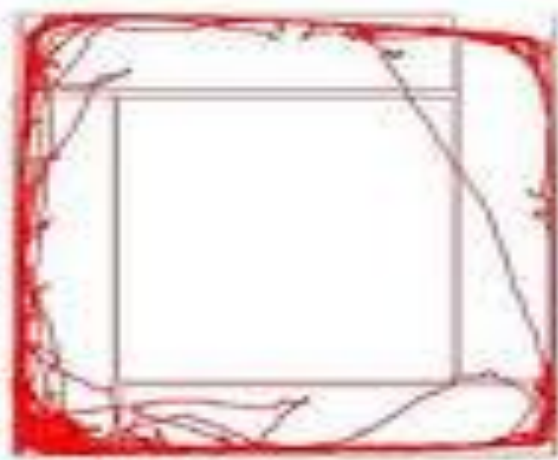
4.

Hypothalamic Pituitary Adrenal Axis

“Fight or Flight”



Open Field: Travel Pathway



NORMAL

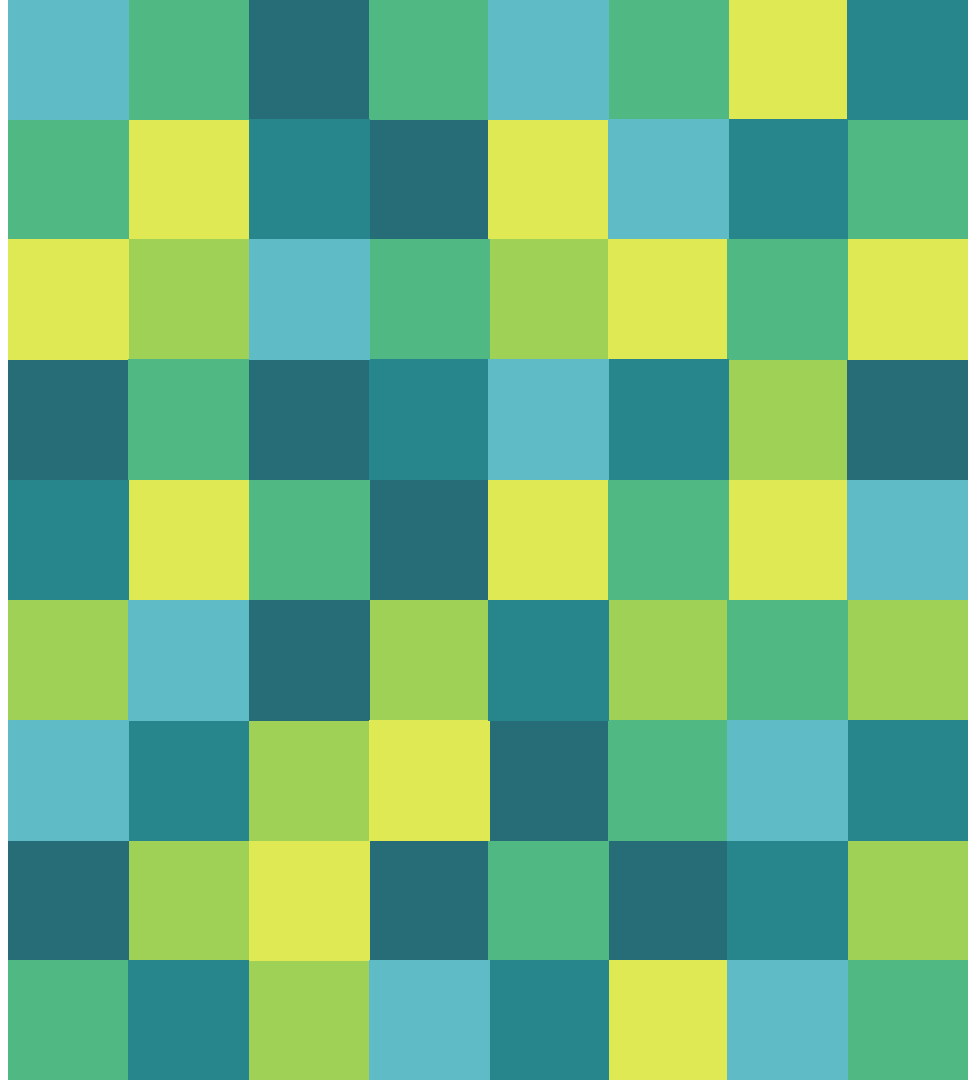


HYPERACTIVE/RISK TAKING

5.

Myelin

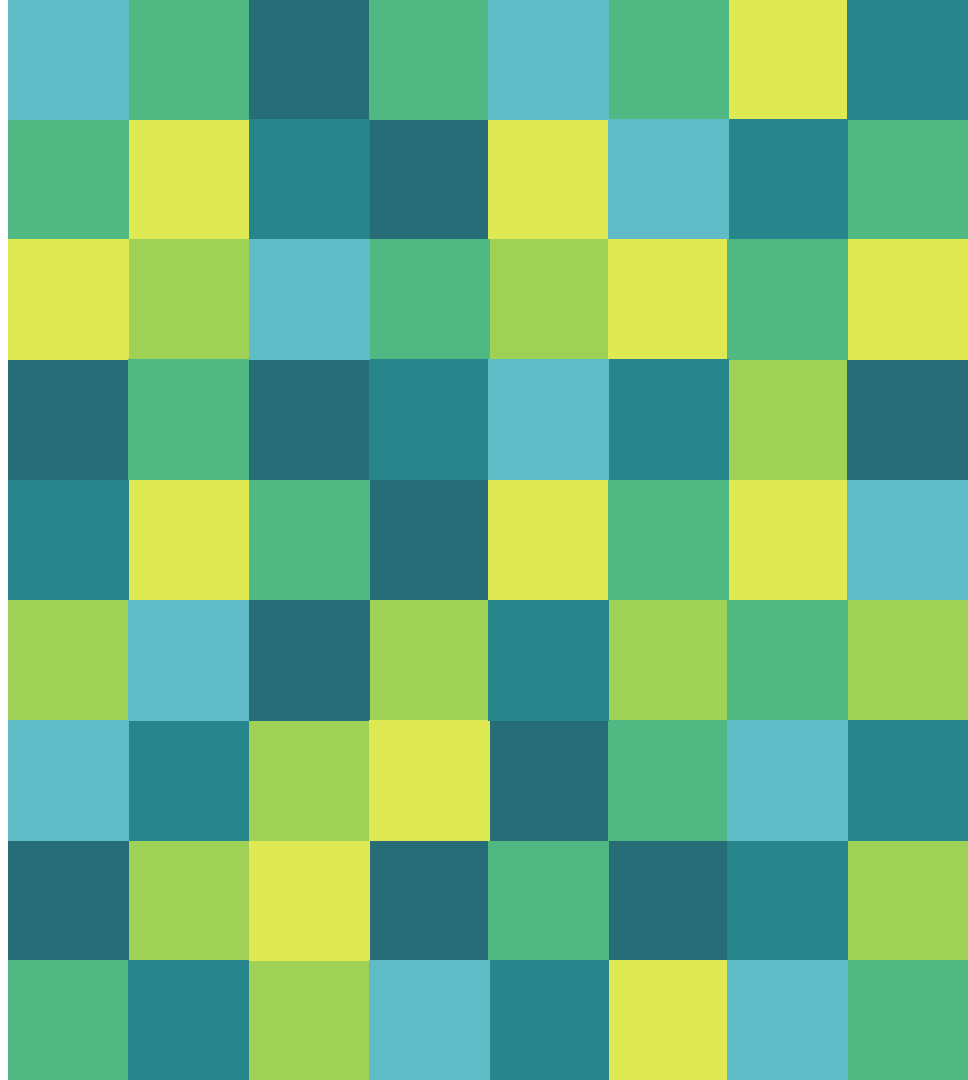
Hard wiring the brain for learning



6.

Play Skills

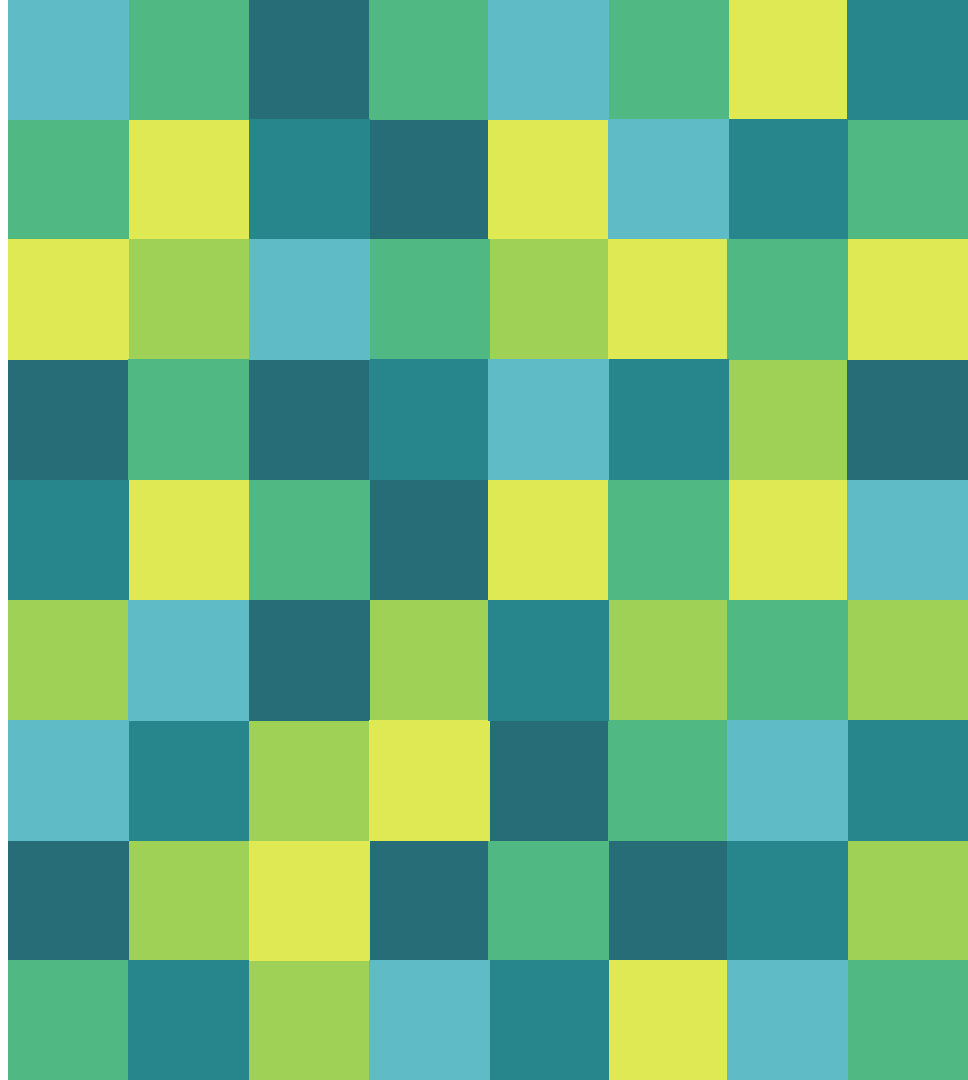
The foundation for social-emotional learning.



7.

Theory of Mind

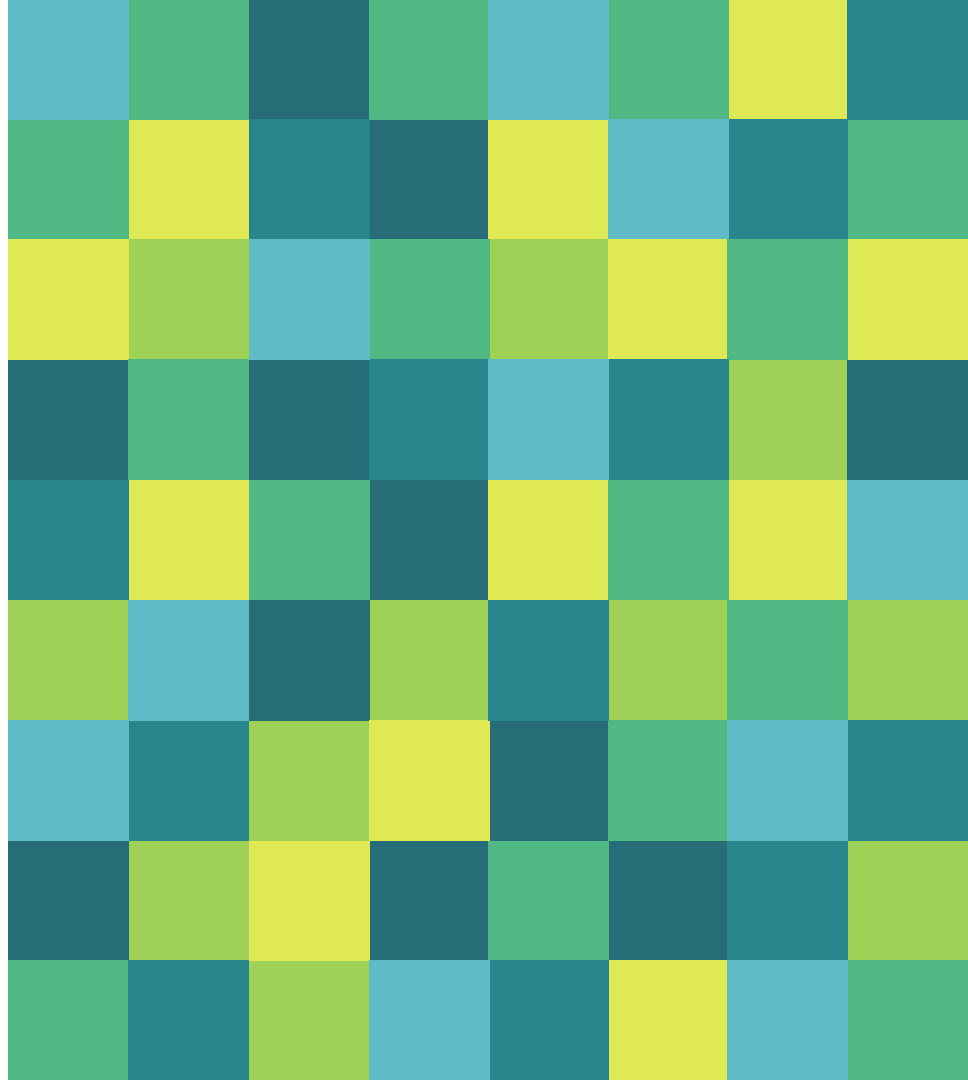
Understanding that other
people have perspectives
different from my own



8.

Emotional and Self Regulation

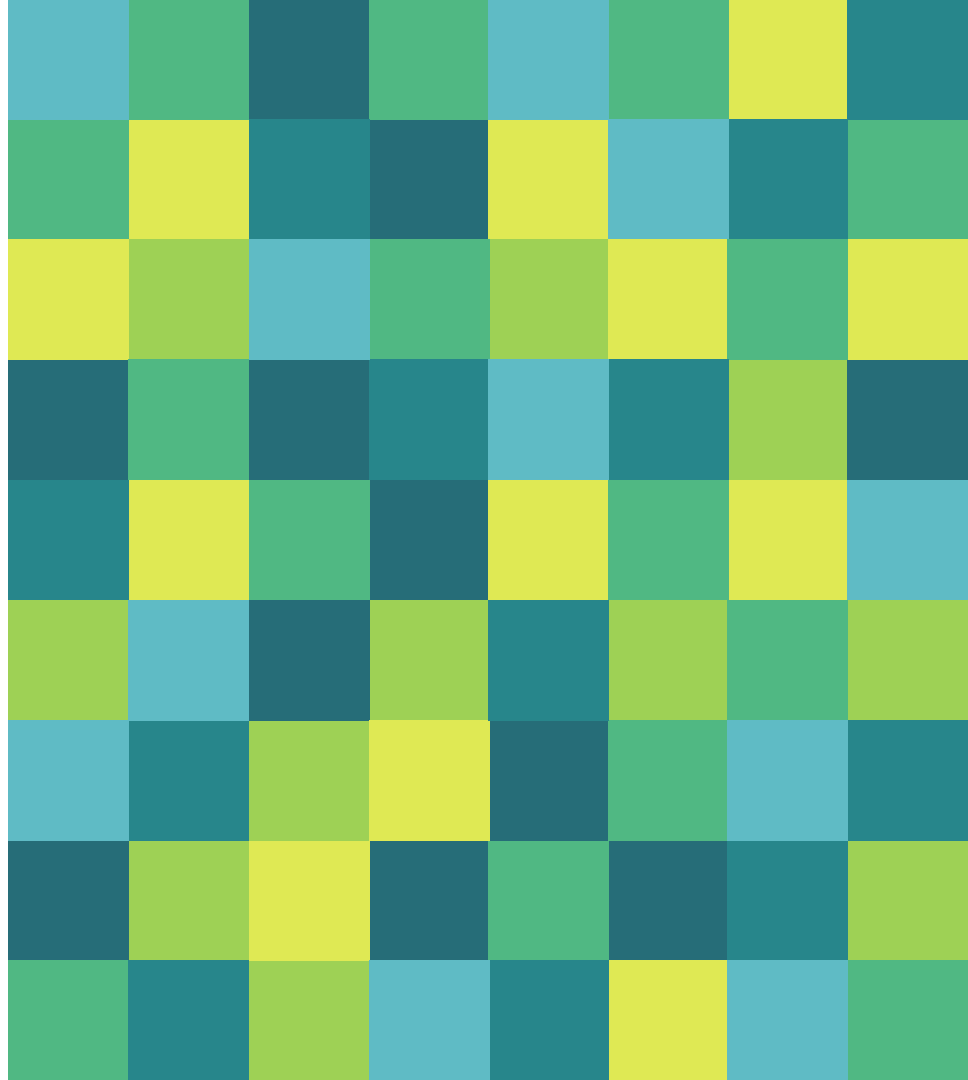
Readiness for learning



9.

Speech and Language

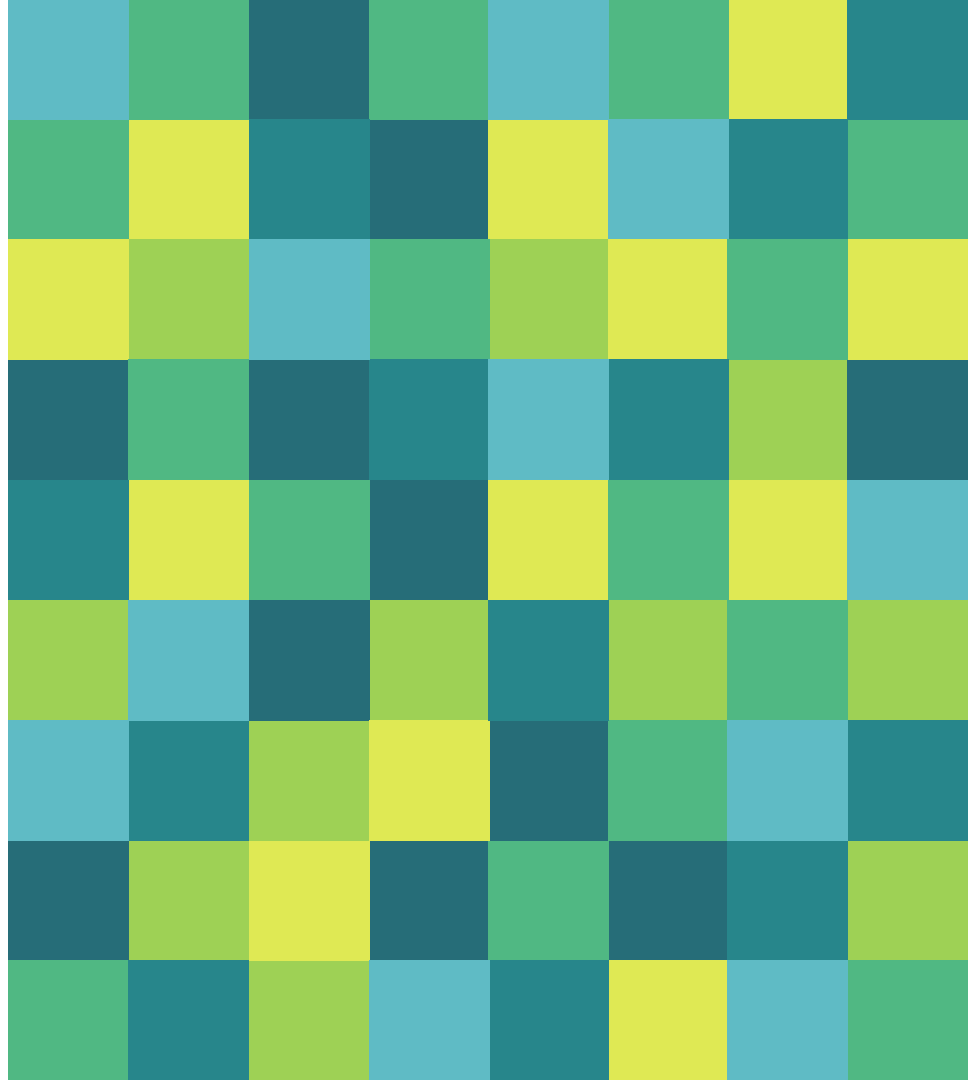
Spoken language is the
foundation for written language
(reading and writing)



10.

Literacy

Is all this tech “good” for literacy development?



Digital Diets

- Use apps that monitor and restrict the amount of time technology is used
- Change phone settings to grayscale
- Watch videos or play games TOGETHER.
- Replace screen time with play or book time.
- Establish “technology free” times and locations.
- Follow the recommended time from the AAP ...
- Train and practice delayed gratification
- Teach them to be coachable
- The 4 T’s

Thank You!

Any questions?

You can find me at...

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