

# PAMELA CANTOR, M.D.



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@DrPamelaCantor

# CONNECTION *is* FUEL



The science of learning  
and development paints  
**an optimistic picture**  
about what is possible.





There are  
**20,000 genes**  
in the  
human genome —

**fewer than 10%**  
get expressed.

# CONTEXT



There is no separation of  
nature and nurture,  
biology and environment,  
or brain and behavior—  
only a collaboration  
between them.

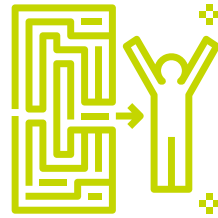


# 3

## THINGS TO REMEMBER ABOUT BRAIN DEVELOPMENT



**MALLEABILITY**



**EXPERIENCE-  
DEPENDENT  
GROWTH**



**CONTEXT**

## PREFRONTAL CORTEX

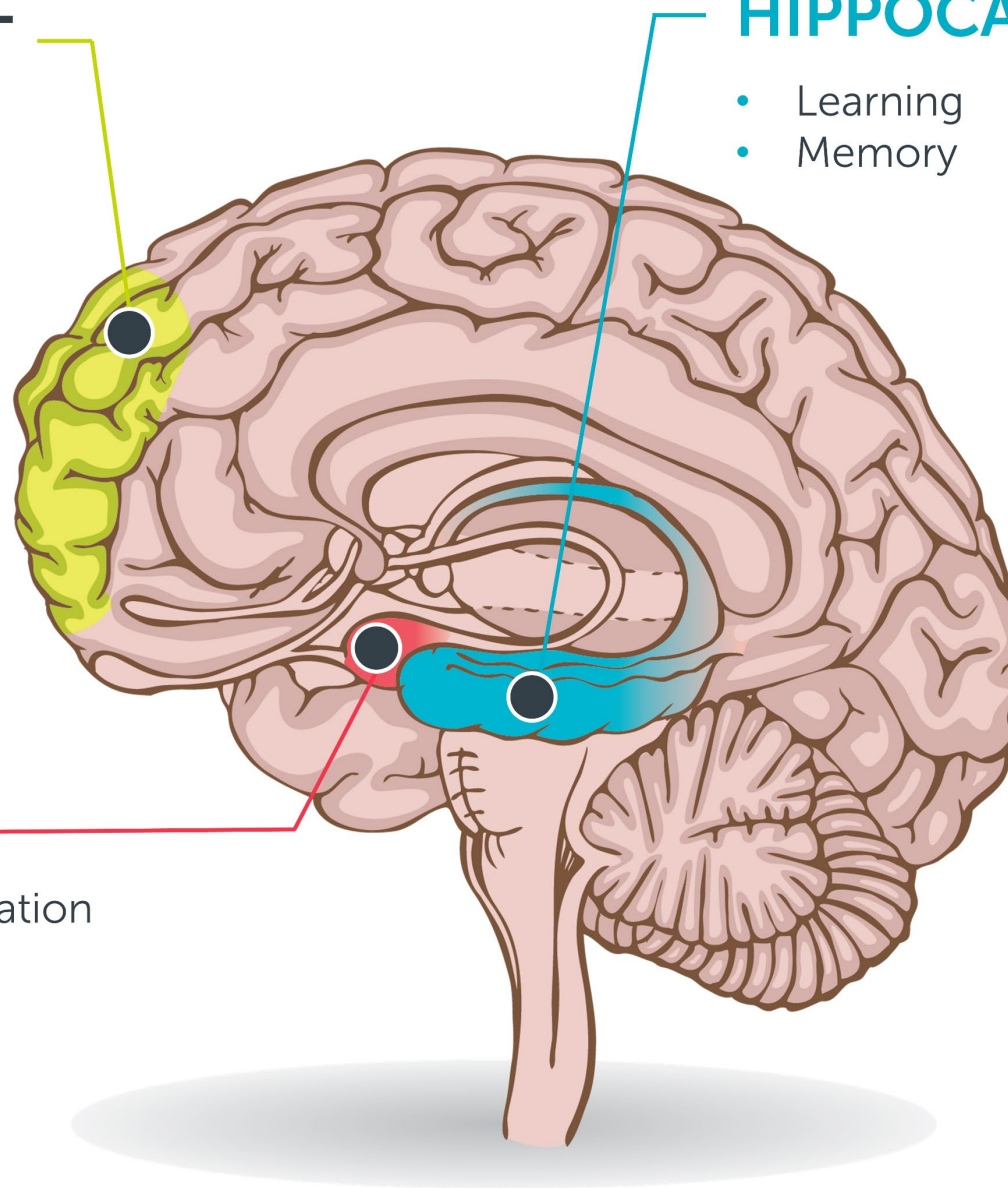
- Attention
- Concentration
- Focus

## HIPPOCAMPUS

- Learning
- Memory

## AMYGDALA


- Emotional Regulation
- Reactivity







The most powerful example  
of positive context  
is the **human relationship.**



# OXYTOCIN



OXYTOCIN

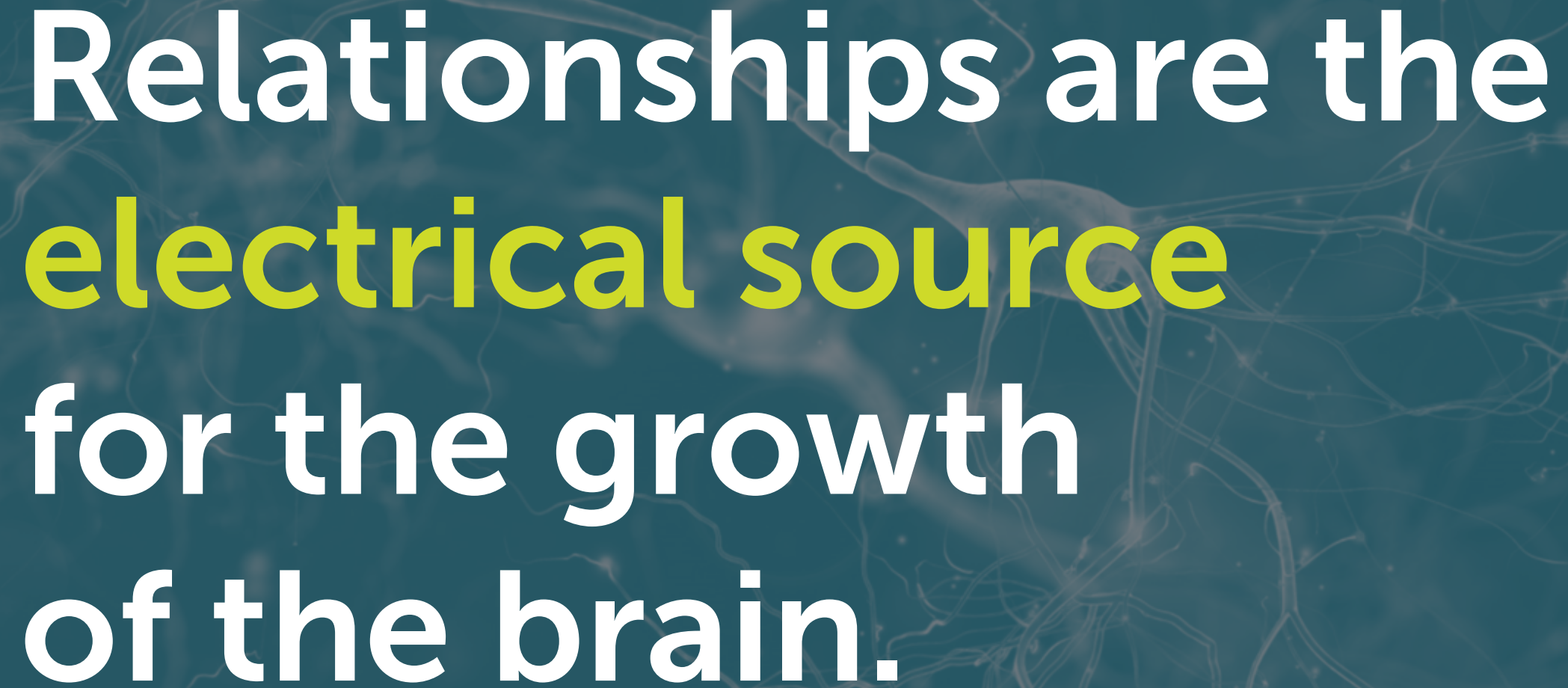


CORTISOL



# TRAUMA IS NOT DESTINY





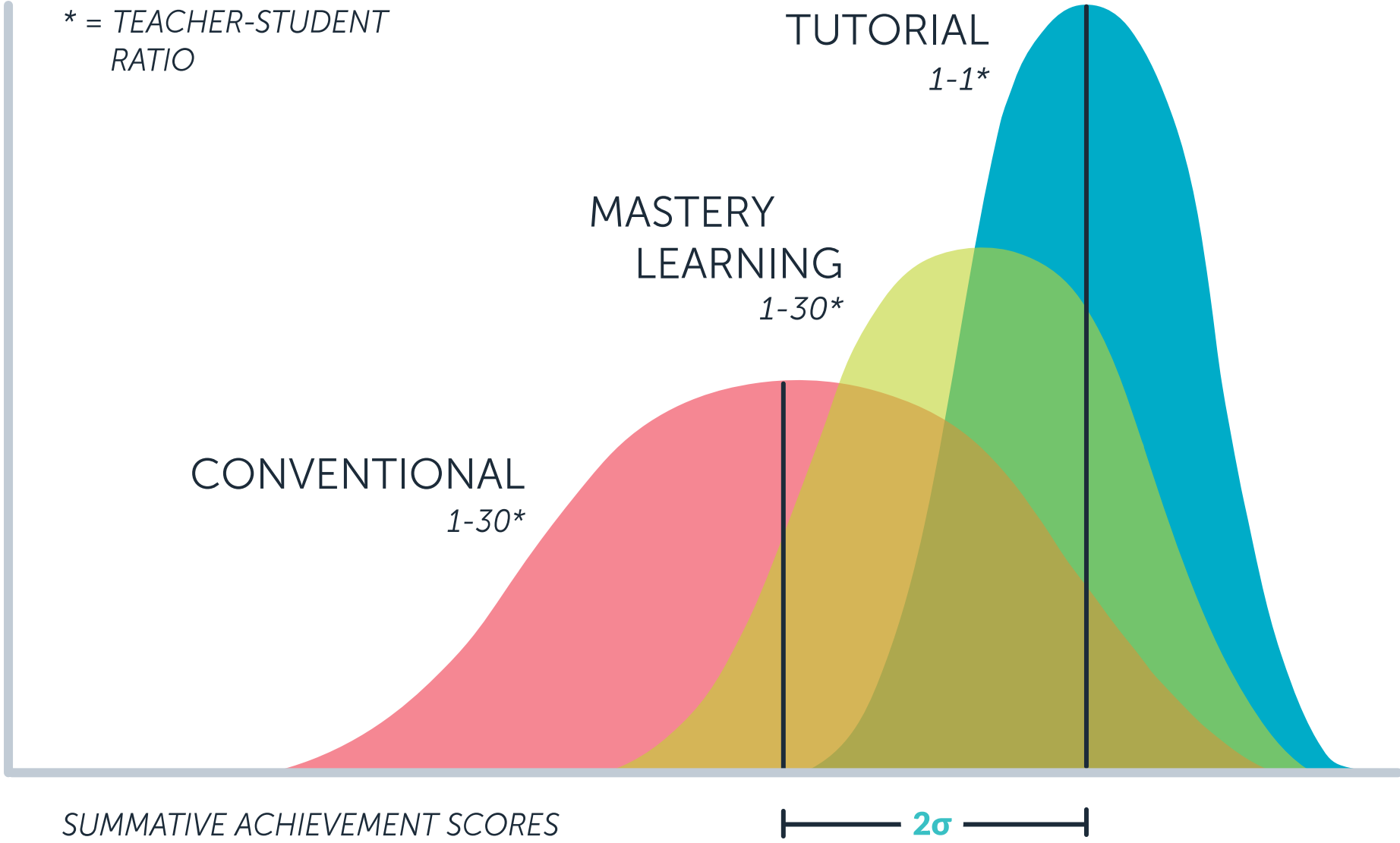
**Relationships are the  
electrical source  
for the growth  
of the brain.**



## HEBB'S LAW

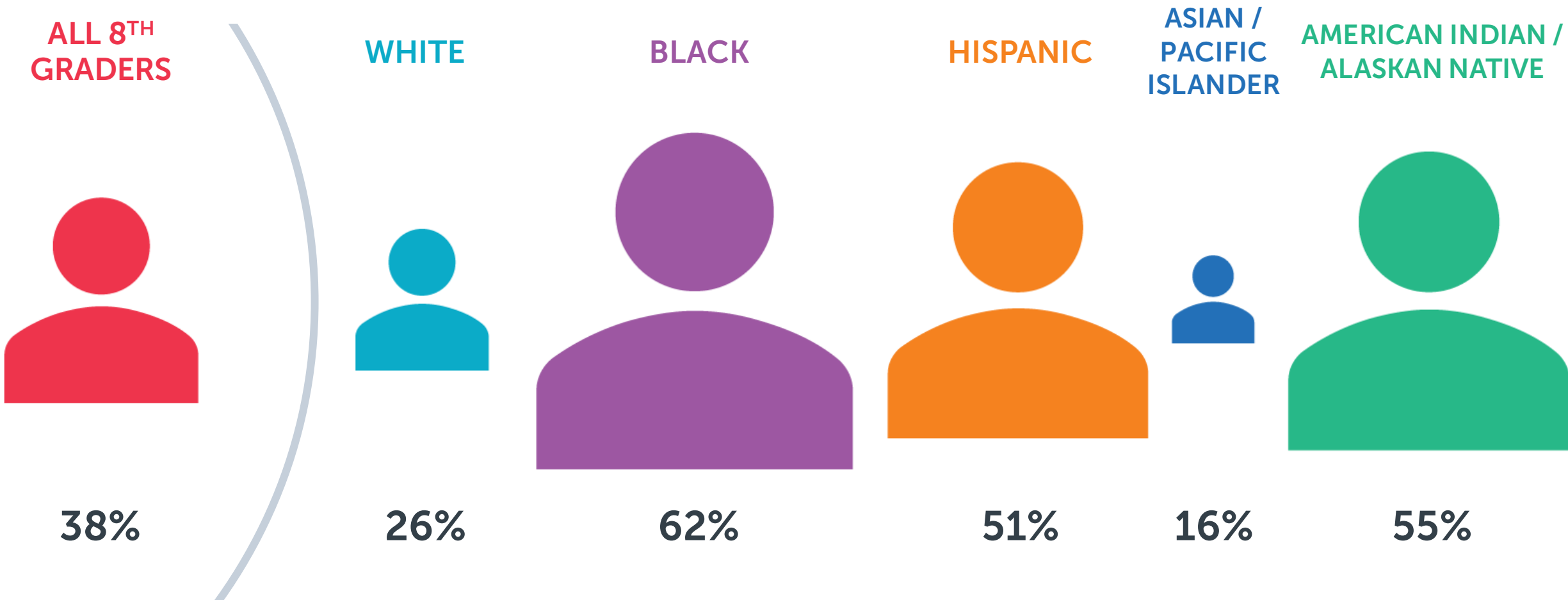
**NEURONS THAT  
FIRE TOGETHER  
WIRE TOGETHER**

# BLOOM'S 2 SIGMA STUDY 1984





# 8<sup>TH</sup> GRADERS BELOW BASIC PROFICIENCY IN MATH:



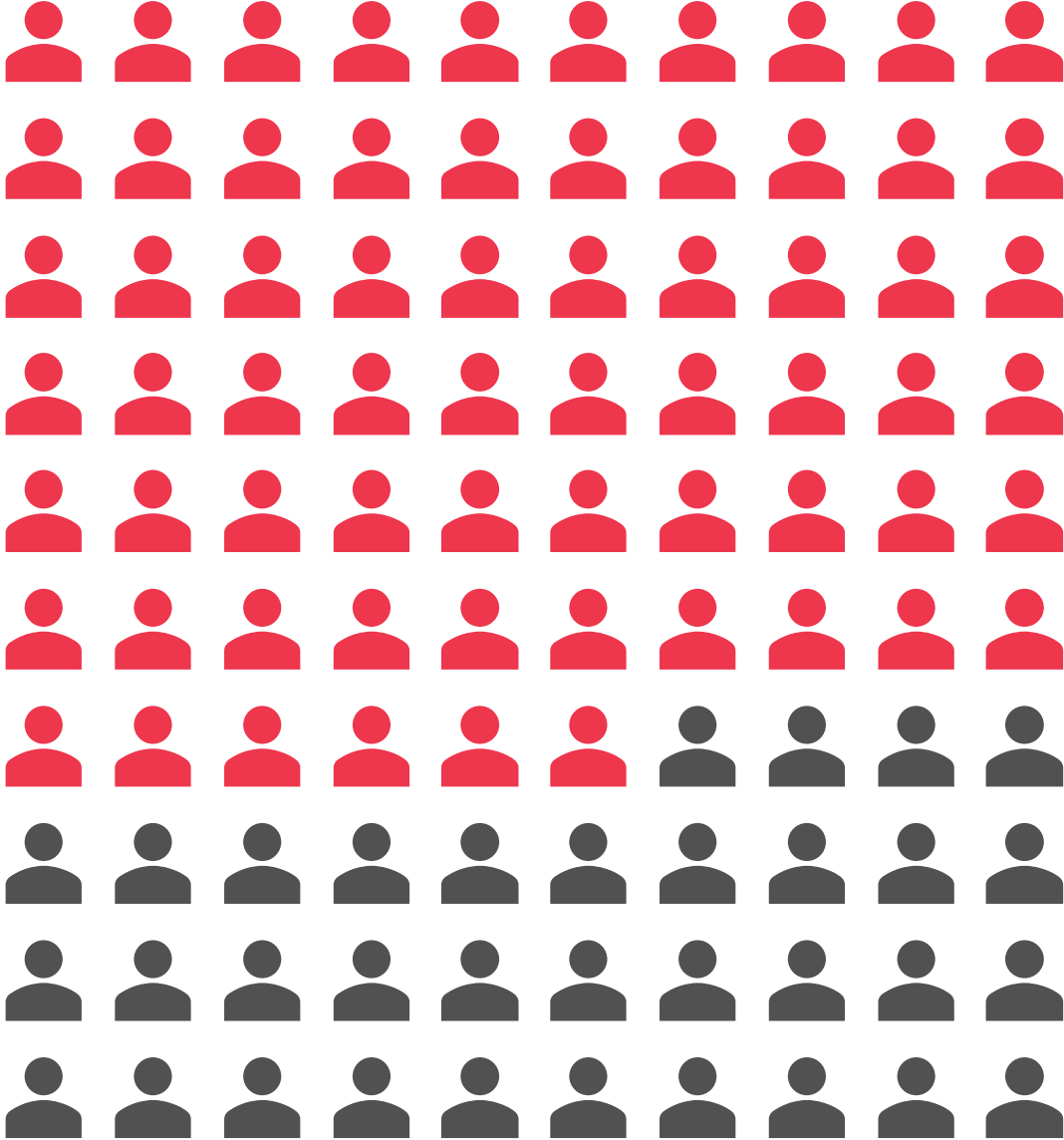
SOURCES: Derived from EducationWeek graphic based on the National Assessment of Educational Progress (NAEP) 2022 School Survey, Institute of Education Sciences

# 8<sup>TH</sup> GRADERS PROFICIENT IN MATH:

2019

**34%**

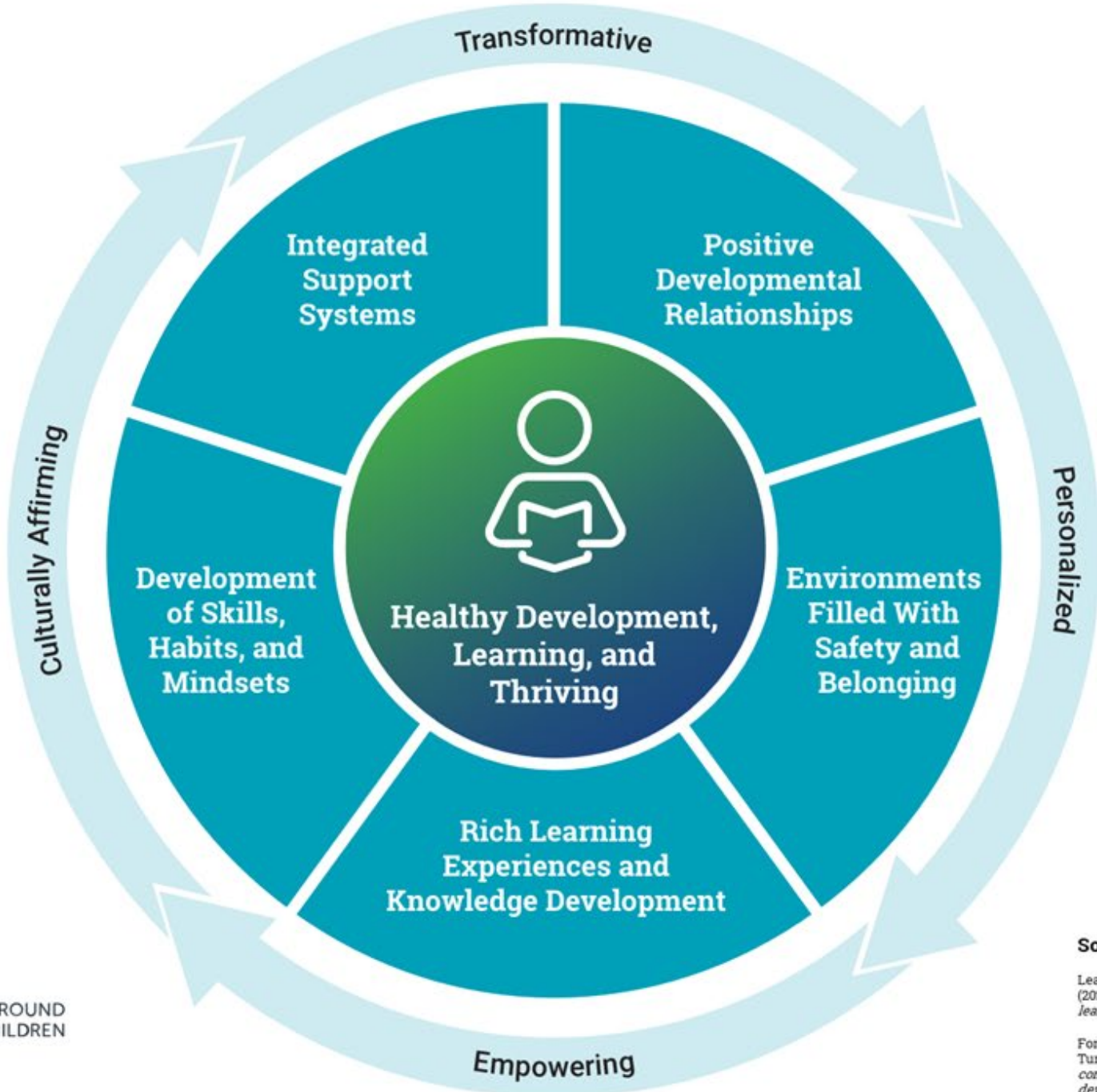
**proficient**



**We can create  
learning  
environments  
that recognize  
children as  
whole people.**



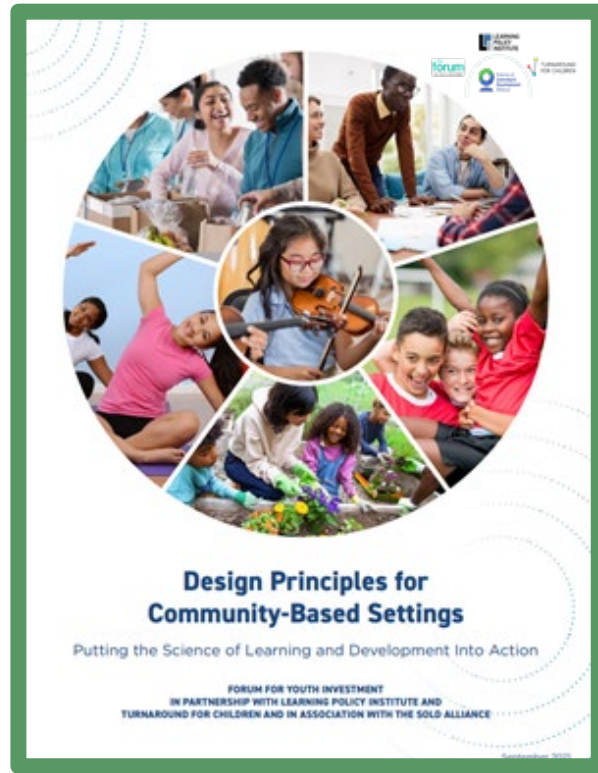
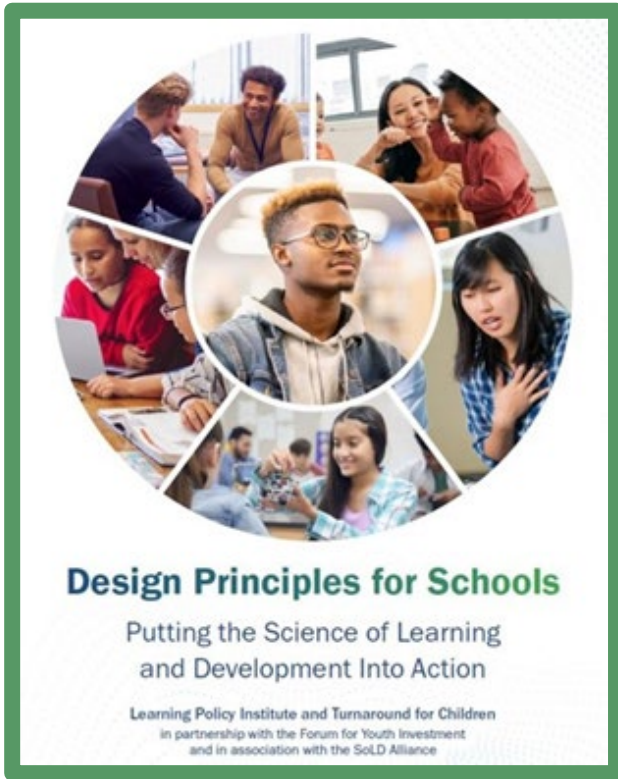
# Essential Guiding Principles for Equitable Whole-Child Design



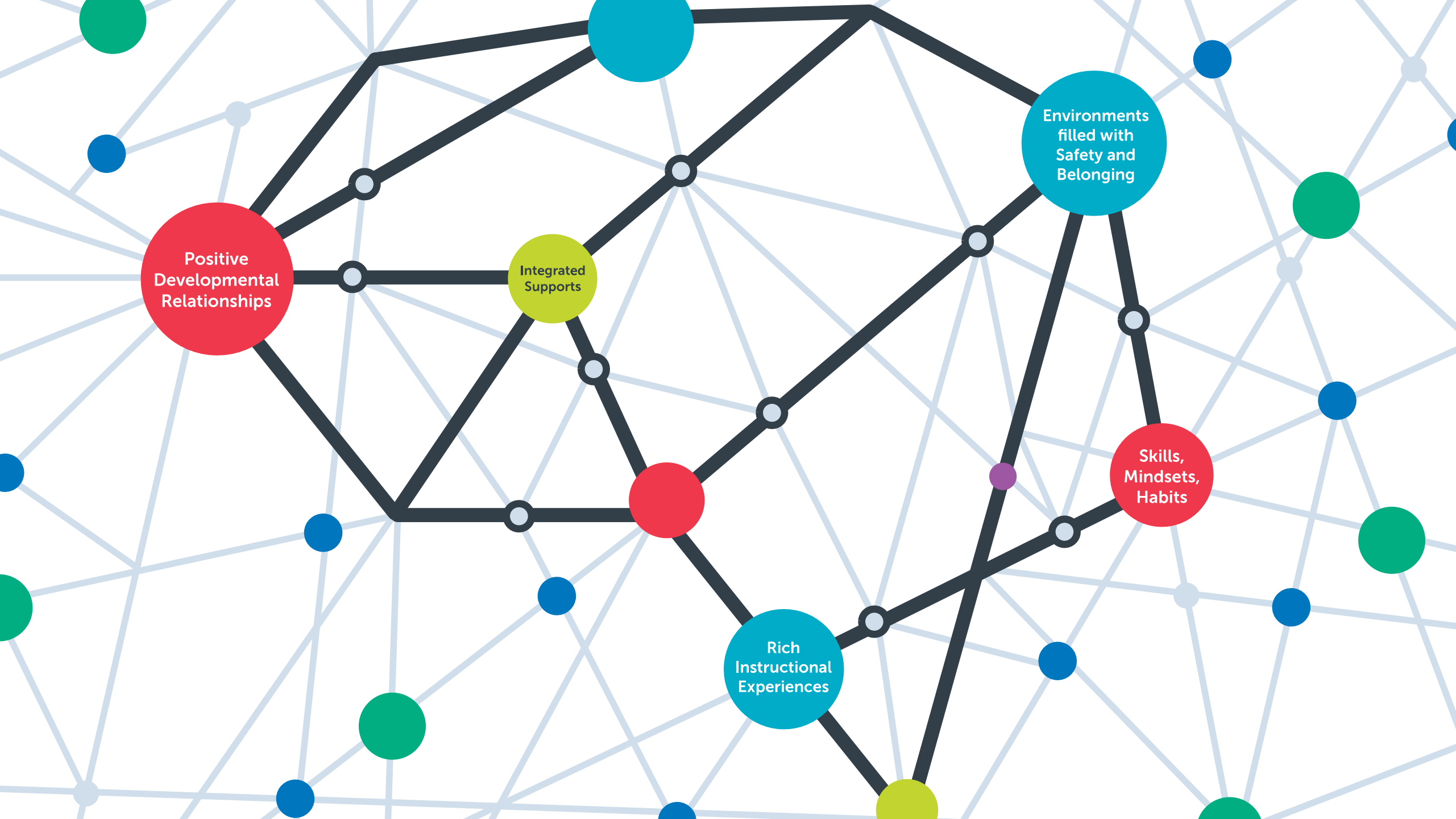
**Sources:**

Learning Policy Institute & Turnaround for Children. (2021). *Design principles for schools: Putting the science of learning and development into action.*

Forum for Youth Investment (with Learning Policy Institute & Turnaround for Children). (2021). *Design principles for community-based settings: Putting the science of learning and development into action.*



[designprinciples.org](https://designprinciples.org)



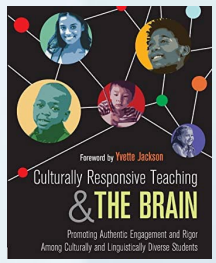
Positive  
Developmental  
Relationships

Integrated  
Supports

Rich  
Instructional  
Experiences

Environments  
filled with  
Safety and  
Belonging

Skills,  
Mindsets,  
Habits



**ZARETTA  
HAMMOND**



TURNAROUND  
FOR CHILDREN

THE

**180**

[turnaroundusa.org/podcast](https://turnaroundusa.org/podcast)

The background features a complex network of glowing blue lines and nodes, resembling a neural network or a data visualization. The lines are thin and translucent, with small orange and yellow dots at various points, creating a sense of dynamic energy and connectivity.

# motivation

belief

purpose

focus





# UNLEASH THE **POTENTIAL** IN EACH AND EVERY YOUNG PERSON



[turnaroundusa.org](http://turnaroundusa.org)

@DrPamelaCantor #WholeChild

A close-up photograph of two hands, one from a child and one from an adult, clasped together in a supportive grip. The hands are positioned in front of a whiteboard that has some math problems written on it, including  $10 \div 6$  and  $12$ . The text is overlaid in a large, bold, yellow font.

**EACH AND EVERY  
YOUNG PERSON  
CAN THRIVE**



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