



History in Museums as a Disruptive Innovation: Unlocking Human Potential for Gen Alpha

Fernande Raine, PhD

Feb 18, 2025



Disruptive Innovation–Definition

“describes a process by which a product or service takes root initially in simple applications at the bottom of a market and then **relentlessly moves upmarket, eventually displacing established competitors**”.

– *Clay Christensen*



What if we could...

...design a product that could be the “swiffer” of education, changing

- **How** kids learn
- **Where** they learn
- And fundamentally changes **how many** teens get excited about learning and leading?





Congrats—you
ARE it!

The product =
**History experiences with
teens—specifically with
Gen Alpha—in museums!**

My goal today:

Convincing you that is true.

How?

- Specificities of Gen Alpha
- Science of Learning for Teens
- Models to unlock not just teen learning, but all of our human potential

Success: you feel more prepared and inspired to nurture teens and our communities in their thriving

Our kids and our communities are not ok

Teens are:

DISENGAGED

**Around
30%**

are regularly engaged in learning

DISILLUSIONED

Only 16%

think democracy is working

Communities are:

DIVIDED

>80%

find America more divided than united

DISCONNECTED

~50%

report feeling lonely and disconnected



A Gen Alpha Profile

Meet Max.



What IS Gen Alpha?

Born **after 2010** (anyone under 16)

Largest generation: ~ 45 million youth in the U.S.

Most diverse generation in U.S. history

Challenged: more likely than prior generations to:

- Grow up in **single-parent households**
- Experience **economic instability** early in life

Gen Alpha: Shaped by history...

COVID

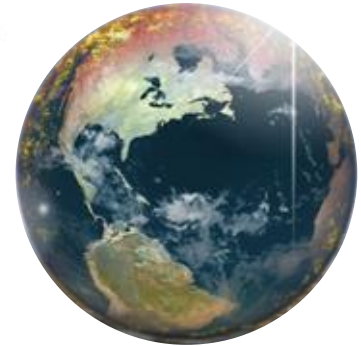
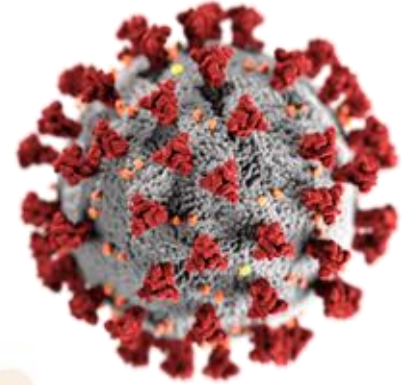
Were in isolation from peers in critical years of social growth.

Migration

Most diverse generation in our history: majority minority.

Climate Change

Over 60% worry about climate impact on the future



...and tech disruptions

Polarization

- Have never known narrative of a safe and stable democracy

iPhone

- Born after the launch of the iPhone.
- Grew up surrounded by adults on tech.

Gen AI

- Teens are seeing adults flail on implementation while data points to lasting risks and damage



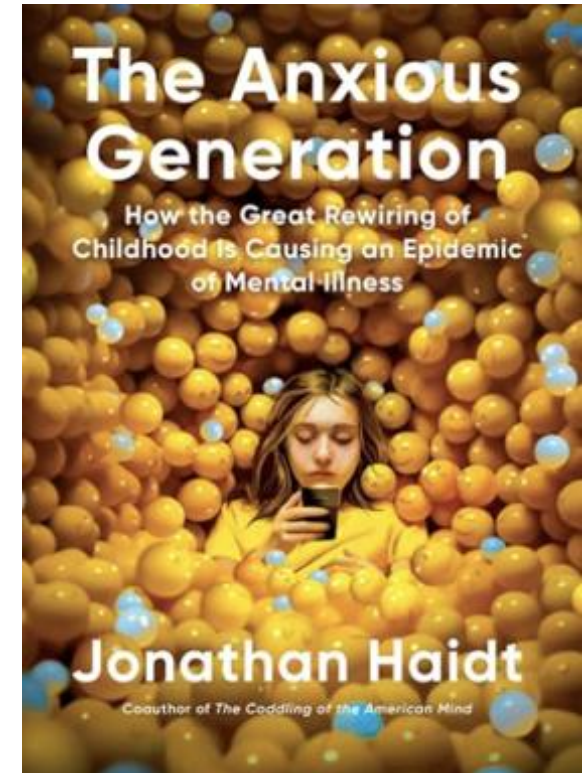
Yes, an Anxious Generation

~1/3 almost constantly on social media

40% report persistent sadness

Rising **anxiety**, depression and suicide

Overmedicated by screens **7-8 hrs/day**



Deep concerns on learning outcomes

~30% of 4th graders read proficiently (lower than ever)

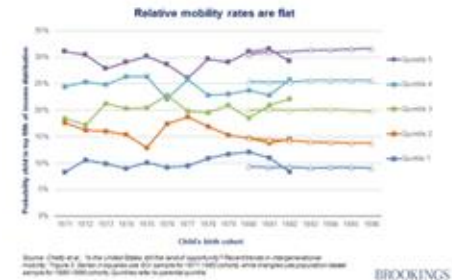
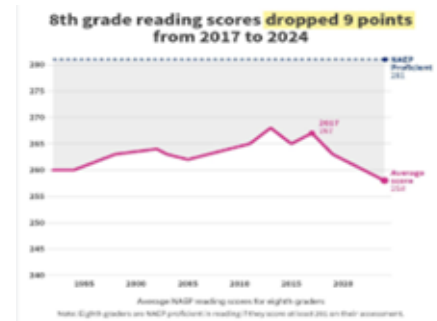
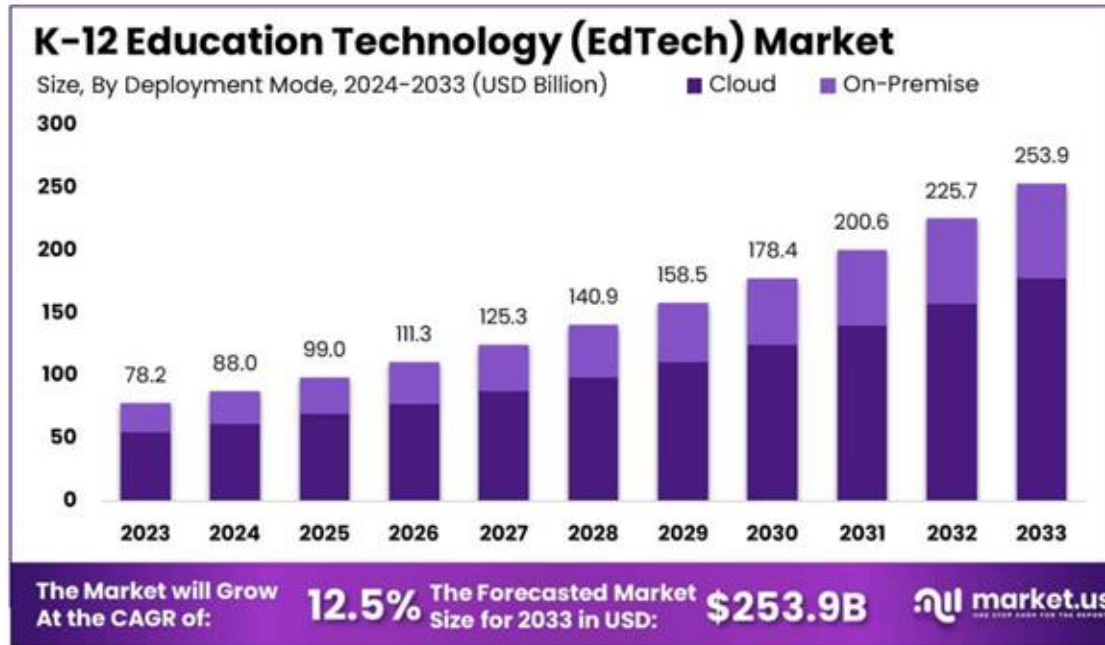
~33% of 8th graders are below basic reading

~50% show high addictive use trajectories for mobile phones

~40% show high addictive use trajectories for video games

National Assessment of Educational Progress (NAEP), *Nation's Report Card: Reading*, 2024; NAEP, *Reading Highlights: Grade 4 and Grade 8 Trends*, 2019–2024. Adolescent Brain Cognitive Development (ABCD) Study; longitudinal analyses published 2024–2025.; JAMA Network Open, longitudinal study on social media use and depressive symptoms, 2025.

But adults are not helping. Not with \$...



Tech investments are way up, but reading scores are down and relative socio-economic mobility is flat.

...nor with what they say

14%

of words adults use to describe teens are **positive**

Teens are **immature** and not ready!



All teens care about is their friends!



Teens are **SO emotional!**



Teens are always **challenging authority!**

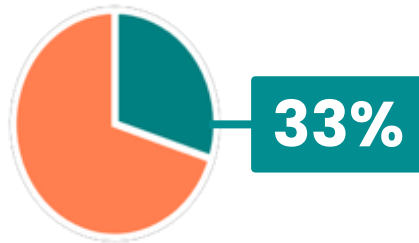


Teens take such stupid risks!

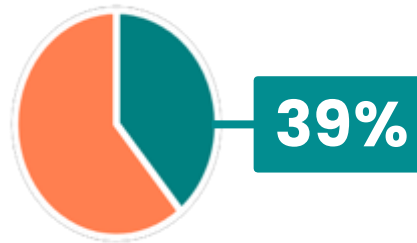


Result: teens find school dull...

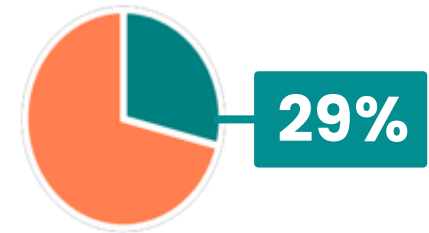
"I get to develop my own ideas."



"Most of the time I feel I belong."

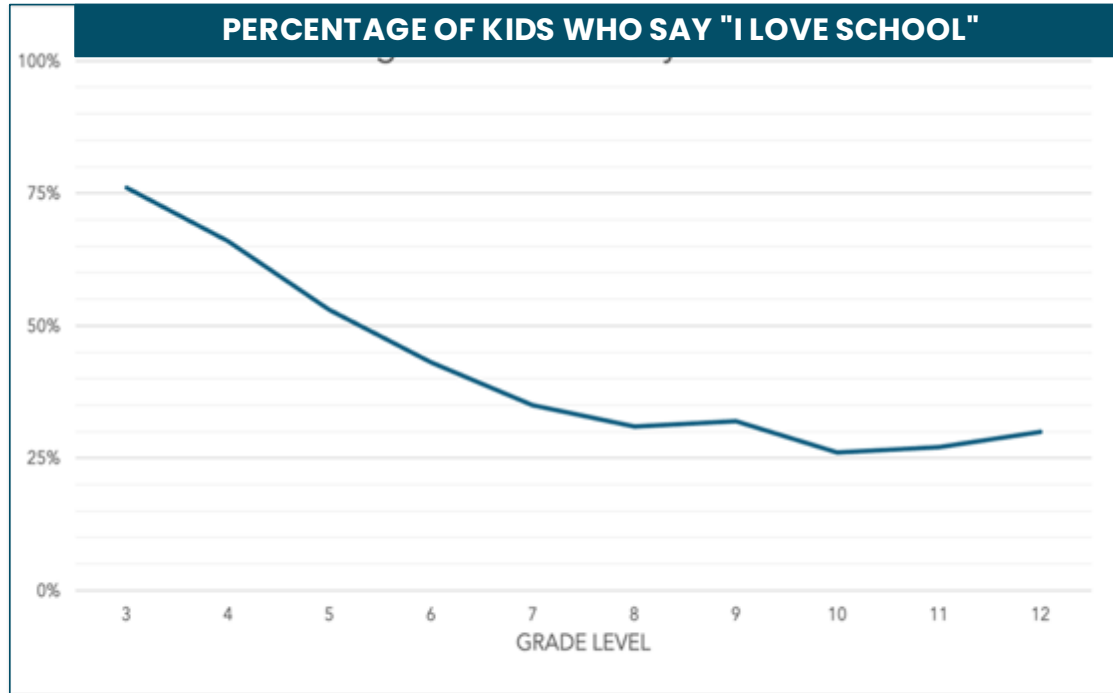


"I get to learn things I am interested in."

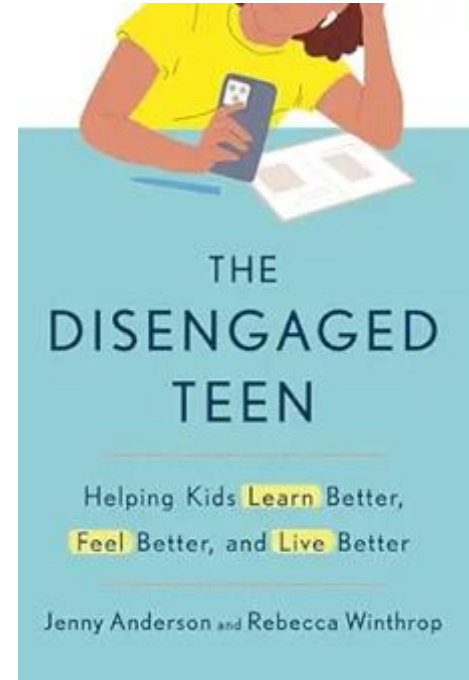


Source: *The Disengagement Gap: Why Student Engagement Isn't what Parents Expect.* Brookings and Transcend, January 2025.

...and disengage from learning

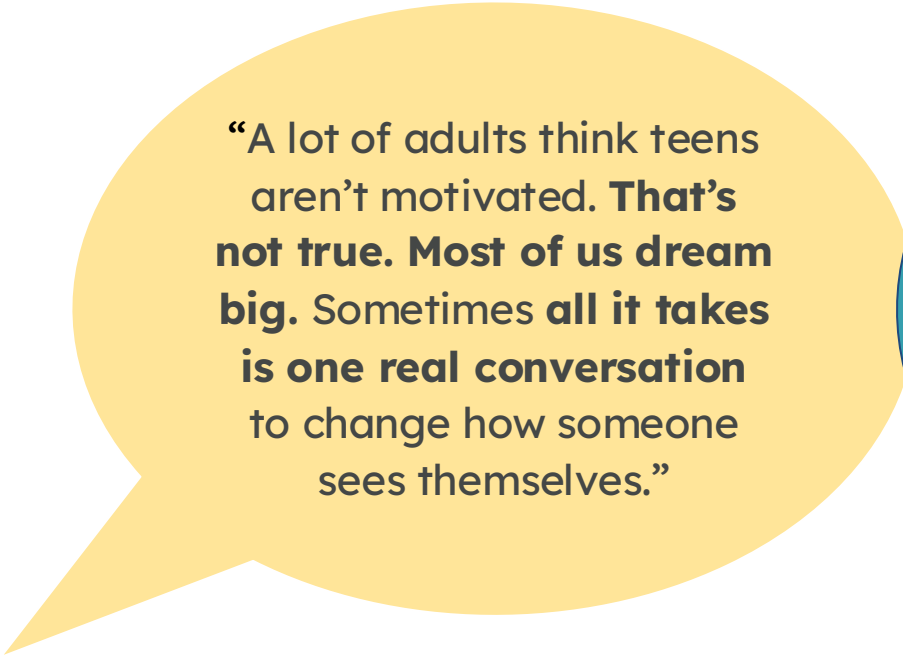


Source: Rebecca Winthrop, Youssef Shoukry, David Nitkin, *The Disengagement Gap: Why Student Engagement Isn't What Parents Expect*, (Washington, D.C.: Brookings Institution and Transcend, 2024)

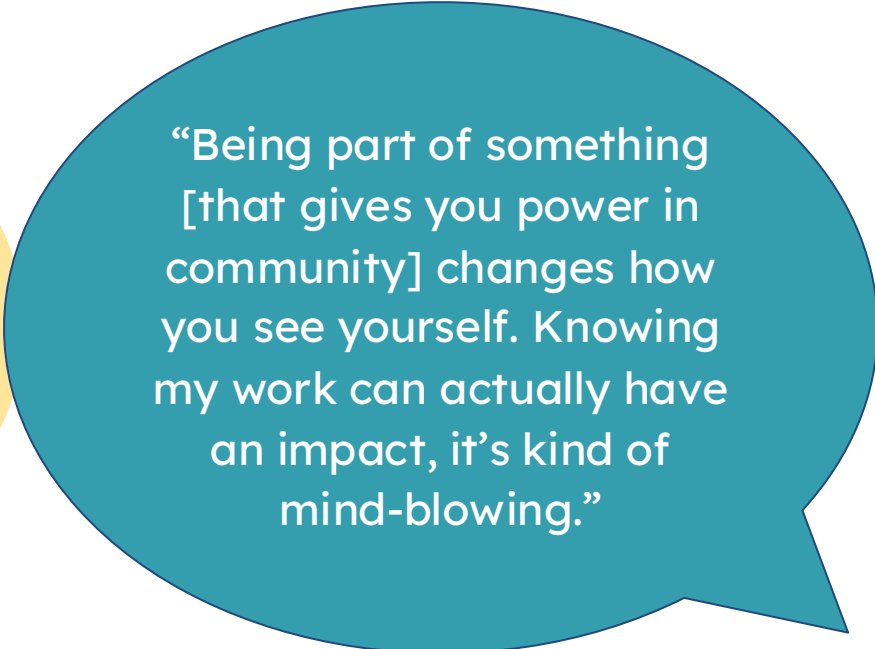


Meanwhile:

Teens long to be seen and encouraged



“A lot of adults think teens aren’t motivated. **That’s not true. Most of us dream big.** Sometimes **all it takes is one real conversation** to change how someone sees themselves.”



“Being part of something [that gives you power in community] changes how you see yourself. Knowing my work can actually have an impact, it’s kind of mind-blowing.”

WHAT THIS MEANS: OUR SYSTEMS OF LEARNING ARE NOT UNLOCKING ALL YOUNG PEOPLES’ FULL POTENTIAL!

Recap

Gen Alpha is **unique**.

It also faces specific **challenges**.

Adults in formal learning systems are **slow to respond**.

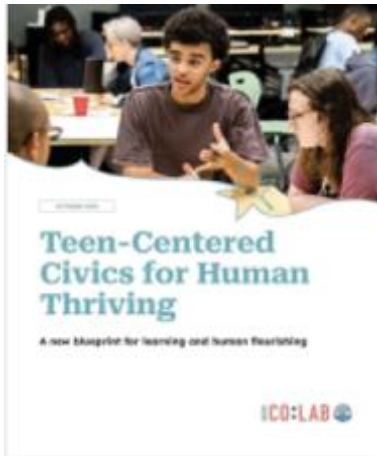
Kids urgently need **adults to step up and deliver** the kind of experiences they need so they can unfold their potential.

Museums are uniquely positioned to do so.

Why Museums?

The reason lies in...

The Biology of Learning.



The Science of Experiential Civics
Young people are wired for civics learning that connects them to their communities, builds their agency, and leverages relationships.
By Pamela Cantor MD, Patricia Baker and Susan Rivers



Dr. Susan Rivers



Pam Cantor, MD

#1. Adolescence is a period of neural superpower

Teen Operating System

Forming Habits

Shaping themselves & their own **biology** and potential

Creative Explorers

Looking at the world with **FRESH EYES**

Socially Oriented

Prioritizing relationships & how they are seen by peers... wired for **EMPATHY**

Novelty Seeking

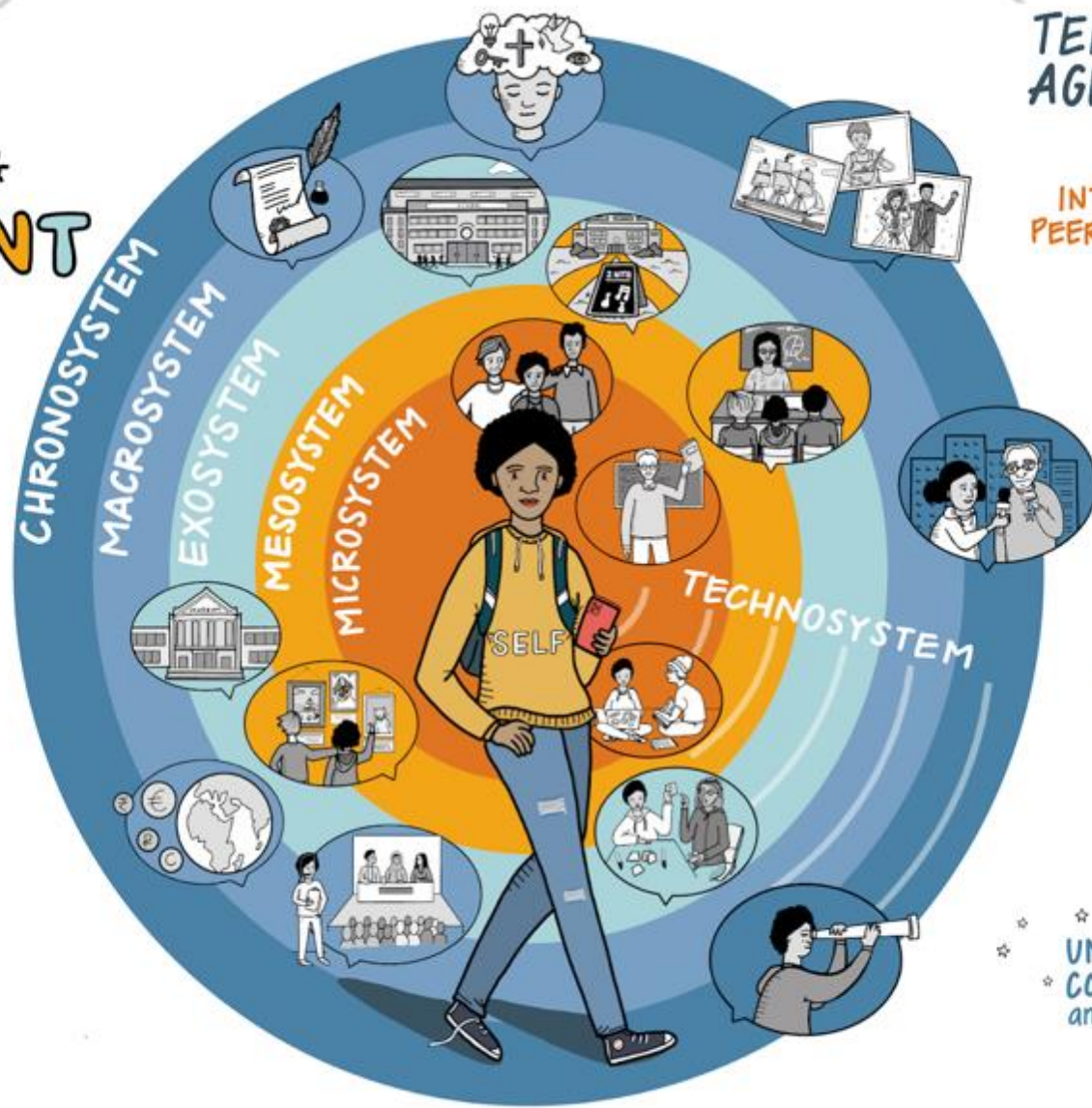
Willing to take **RISKS** & try new things - not afraid to break the rules

Strong Emotions

Holding huge feelings & a deep sense of **RIGHT & WRONG**



The ECOLOGY of THRIVING & ENGAGEMENT



Experiences switch on these “Light Bulbs”



The “aha moments”/lightbulbs



The Science Behind the Necessary “aha moments” for Thriving and Learning

The Science	The “Lightbulb”/“Aha”	What this means for Design
Our brains and bodies adapt based on what we experience. (Dahl)	My brain works best when I feel supported and a sense of belonging.	 Ensure teens feel seen, heard, and connected to others. Design experiences that are safe, challenging, and supportive.
Emotions drive attention, memory, and motivation. (Dahl)	Emotions help me notice what matters—and I can learn to control and use my emotions effectively.	 Use emotionally engaging hooks—beauty, wonder, injustice, relevance—to activate curiosity and motivation. Practice emotion regulation strategies.
Our genes do not determine our destiny. Intelligence and ability can grow. (Cantor)	My abilities aren’t fixed—I get better with effort, practice, and feedback.	 Create feedback-rich, growth-oriented environments with opportunities for iteration, reflection, and mastery.
Context, culture, and identity shape how we learn and develop. (Osher et al)	My culture, background, and story shape who I am—and that’s a strength.	 Honor diverse identities. Use storytelling, cultural mapping, and reflection to affirm teens’ lived experiences.
Agency is built when learners are given real responsibility and voice. (Osher)	When I am a partner in decision making, I grow stronger and more confident.	 Involve teens in co-design, decision-making, and projects with real-world stakes.
Environments and humans shape one another. (Bronfenbrenner , Osher , Dahl)	Just as my environment influences me, I can shape and influence my environment. The future is not fixed.	 Introduce systems thinking through mapping, simulation, and civic design challenges, see history as library of systems builders and changers
Relationships are the most powerful developmental force. (Rose)	I learn best when I connect with others—I’m not meant to do everything alone.	 Prioritize collaboration, dialogue, mentorship, and interdependence in learning models.
Human potential is vast and often underestimated. (Cantor)	I can surprise myself—and others—with what I can do and become.	 Create open-ended, creative opportunities for teens to explore, design, make, and lead.
We seek purpose and connection to something larger than ourselves. (Burrows)	My life is connected to the lives of others—in the past, present, and future.	 Use rituals, intergenerational storytelling, and projects that engage teens with history to root identity in shared humanity.
Humans are not entirely defined by their past. (Cantor)	Even hard things I’ve been through can be healed— my future is open.	 Connect teens with individual and collective stories of healing and resilience.

What are key learnings journeys one must complete by age 18?



What museums can do

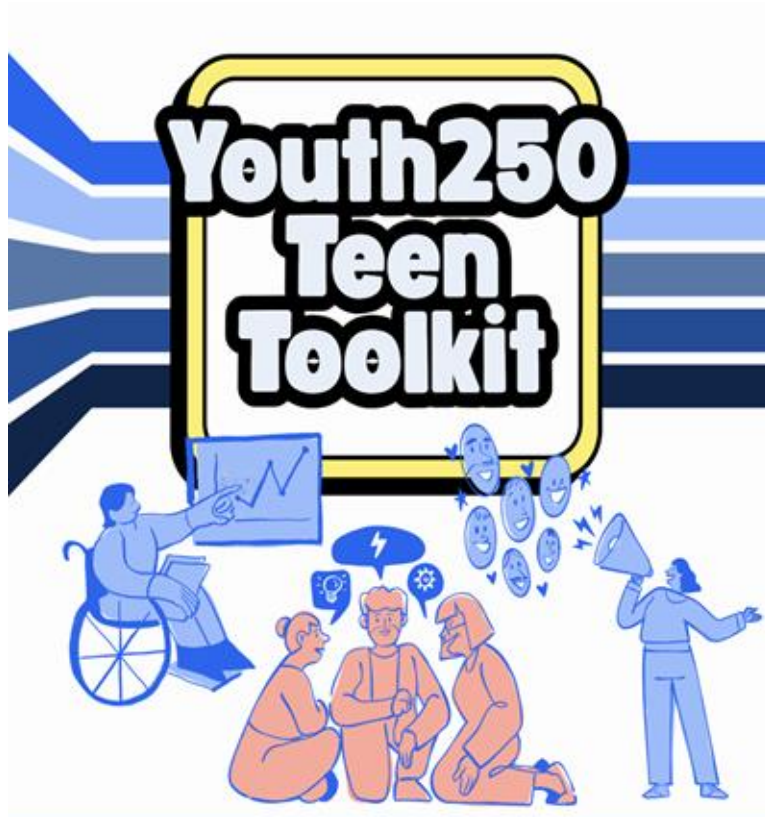
Create experiences in which young people develop a sense of self, agency and purpose,

embedded in strong relationships, invited to create, and supported to learn in ways that matter to them and their communities.



Tips for designing Spaces

Experiences



10 Things to Know When Designing for Teens

Guiding Questions to Ask Yourself 

The games, tools, and experiences teens engage with shape what they believe is possible and important in our world and about themselves. When the design of these games, tools, and experiences is informed by the science of adolescence, they become springboards for social and emotional skill-building, connection, and exploration, nourishing young people in ways supportive of their wellness, learning, and thriving.

When designing for teens, remember that teens are:

10 Building Habits for Life

Teens' brains are undergoing the last major restructuring of development, making the teen years the perfect time to build skills and habits that help them throughout life. But negative habits "stick" more at this time, too. **Ask yourself, how can your offerings:**

- Model and exemplify the positive and supportive relationships, environments, and experiences that nourish a developing brain?
- Enliven teens to practice healthy skills like exploring their identity, engaging with their community, and taking purposeful action in the world?
- Bolster teens in managing their behavior, so they are healthfully and choice-fully using your offering (vs. staying engaged because of intentionally addictive hooks)?

Not Just W.E.I.R.D.

Teens aren't just Western, Educated, and from Industrialized, Rich, Democratic countries. They need their uniqueness and diversity to be reflected in the spaces where they learn. **Ask yourself, how can your offerings:**

- Make use of all available media and sensory experiences to invite anyone to see something of themselves reflected and welcomed there?
- Joyfully, authentically reflect and amplify the diversity that enriches the real world?

The 2024 Annual Report

The Youth 250 Teen Toolkit

A Place to **Feel Welcome**

A Place to **Be**

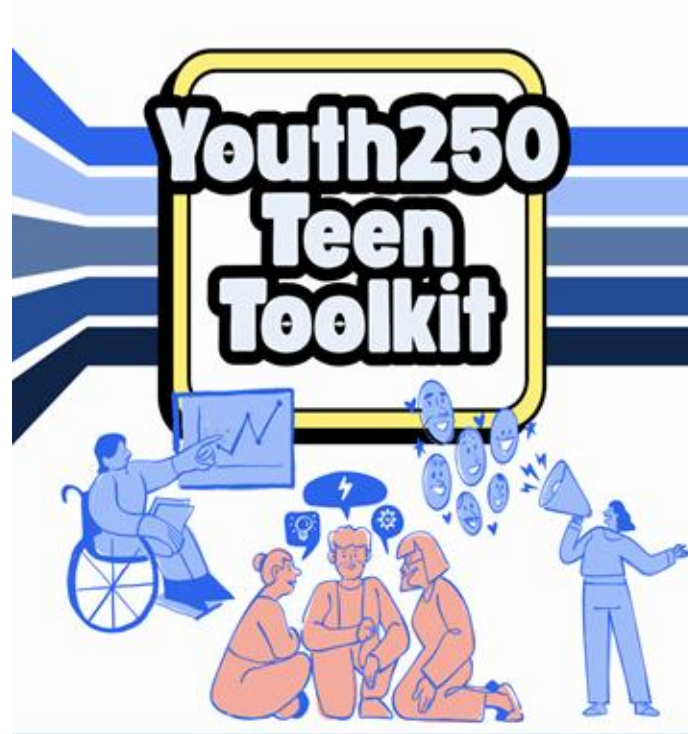
A Place to **Become**

A Place to **Connect**

A Place to **Learn**

A Place to **Do**

A Place to **Lead**



A Place to FEEL WELCOME

Do teens feel like they belong here?

Today's Status	What Teens Look For	What it Looks Like Here	Ask Yourself
Emerging	Belonging & Safety: Teens scan for social cues as soon as they arrive.	Teens visit, but few return on their own. The space doesn't feel like theirs.	For museums: What do the first 30 seconds at your site feel like for a teen? For youth: Do you feel seen and welcomed when you arrive?
Developing	Teens need signals that their identities matter here.	Teens are welcomed, but decisions about what they see, do, and create are made by adults.	For museums: Where do teens see themselves in this space? For youth: Do you see your stories, language, or communities reflected here?
Thriving	Affirmation & Connection drive engagement.	Teens consistently describe the museum as "for me." Youth input shapes how spaces look, feel, and function.	For museums: Do teens describe this place as "for me"? For youth: Do you feel this space welcomes you and is "for you"?



Radical Reframe

What if museums treated belonging as a first exhibit?
From signage to greetings, everything signals: "You matter here."



10 Things to Think about when Designing for Gen Alpha (particularly 10-16)

Every experience you create for teens has the potential to shape what they believe is possible and important in our world and about themselves.

When you design experiences informed by the science of adolescence, you create springboards for their growth in their:



identity



belonging



connection



curiosity



community



agency

#1: They are Trying to Figure Out Who They Are



Teens want to explore identity and belonging.

They need social spaces to interact, experiment, negotiate, and resolve conflict safely. Toxicity and bullying should be proactively prevented.

Design prompts:

- Open up space to play. Embodied role-play lowers the stakes for trying on different ways of being.
- Allow for exploration of topics or themes that connect with their personal story.

#2: They Need More Sleep



Teens need more sleep than adults to thrive.

They may need support to make healthy choices that allow their bodies and brains to recharge. Chances are, if they're coming into your space, they may just be tired.

Design prompts:

- Acknowledge that they might be tired, and create a moment to ground in mindfulness to get energy for exploration.
- Be mindful of how tiring the activity or experience itself might be
- Be authentically but empathetically energetic in inviting them into the activity, making sure they see why it's "worth it"

#3: They are Facing a Lot of Stress



Teens are under significant pressure.

They need ways to cope and to seek help without stigma.

Design prompts:

- Normalize help-seeking, both from adults and from peers
- Highlight connections among emotions, thoughts, sensations, and behaviors. Cue them to reflect on what their body is telling them about what their values and interests are—what sparks energy for you?
- Build in tools and practices that calm the nervous system and connect them with one another (low stakes games)

#4: They are Sensitive to Rewards



Teens are highly responsive to rewards—especially social rewards. Higher dopamine levels make them more sensitive to status, recognition, and peer feedback.

Design prompts:

- Create opportunities for them to collaborate in small groups designed to include different super-powers
- Create opportunities to showcase their work in a format of mutual recognition and celebration
- Create playful formats of “winning” (scavenger hunts etc.) that allow them to follow their curiosity; be mindful of different ways of winning.

#5: They have a Keen BS and Fairness Detector



Teens are keen observers and see through any kind of inauthenticity. They don't respond well to unfairness, favoritism, or being preached at.

Design prompts:

- Adult guides should be authentically themselves
- Invite teens to co-author their experience and reflect on how issues affect them.
- Do not just design learning that works for one type of young person.
- Design *with* teens—they know how to do adapt.
- Model fairness and real power-sharing throughout the experience.

#6: They are more tolerant



Teens value diversity and authentic inclusion.

They care deeply about representation, fairness, and belonging.

Design prompts:

- Intentionally disrupt tendencies to cluster only with similar peers.
- Model and invite deep, authentic connection in all interactions with them
- Point out and engage with examples of diverse perspectives, portrayals, and preferences.

#7: They are Still Learning to Control Impulses & Emotions



The prefrontal cortex is still developing.

Teens are still learning to regulate impulses, emotions, and long-term consequences.

Design prompts:

- Help teens notice emotions and the thoughts, sensations, and behaviors that accompany them.
- Build in moments and tools for pausing before reacting.
- Incorporate playful, interactive moments and movement to allow for channeled activity and expression of emotions.

#8: They Need Positive Connections



Relationships matter most.

Teens want close, trusting relationships with adults while building independence.

Design prompts:

- Communicate high expectations alongside steady support.
- Co-create norms for behavior during the experience that show you care about their ideas and feelings

Imagine every teen as someone holding a unique genius, for whom this might be the experience that changes their life!

Be open to discovering their genius!

#9: They are not just W.E.I.R.D.



Teens are not a monolith.

They come from diverse cultural, racial, economic, and geographic backgrounds—and need to see that reflected.

Design prompts:

- Joyfully and authentically show curiosity for the diversity of humans—in their ideas, cultures, aspirations
- Be authentically curious about family stories and cultures
- Use multiple media and sensory experiences so many teens can see themselves welcomed.
- Reference richness of the history of human migration through time

#10: They are Building Habits for Life



Adolescence is a critical window for habit formation.

Positive habits can take root—but negative ones can stick, too.

Design prompts:

- Find ways to make references to how art and history affect the human brain (see Magsamen, Co:Lab publications): it's a gym for brain health
- Craft experiences that build identity exploration, community engagement, and purposeful action (see the 18x18).

Finally...the most important thing:



What are the characteristics of play?



Joyful

Joy is at the heart of the experience

Meaningful

Learners find meaning by connecting the experience to something already known

Iterative

Learners experiment, test alternatives and strengthen flexible thinking and creativity

Active engagement

Learners are completely absorbed in a task and playing an active role in solving a problem

Socially interactive

Learners are interacting with others and understanding others' perspectives

Our Games



Our Human Rights A Guided Game



OBJECTIVE

Players will identify which human rights are related to freedom of expression, identify the relevance of these rights in their lives, and reflect on the importance of these rights for taking action.

Skills

Players will use physical, communication, creativity, and problem-solving skills to complete various challenges, and will reflect on the importance of human rights in their lives and for social change.

Overarching Questions

- Do you know your rights?
- What would your life be like if you did not have these rights?
- How can you promote and protect human rights?
- What rights guarantee your freedom to take action against injustice?



20 mins



10 - 30 people



2nd - 8th grades



Required: Rights Cards (Appendix 1)

Core Concepts

- Human rights
- Freedom

PREPARATION

1. See Appendix 1 for Rights Cards. Print and cut out a set of the cards to use during the game.
2. Prepare a large, unobstructed play area.

INTRO DISCUSSION

The Universal Declaration of Human Rights was proclaimed by the United Nations General Assembly on December 10, 1948 and established—for the first time—that fundamental human rights must be protected throughout the world.

Do you know what these human rights are? What would your life be like if you did not have these rights? How do you think people take action to promote and protect these rights? What rights guarantee your freedom to speak out against injustice?

Today we are going to play a game to learn about some of our rights and how we protect them.



Moving to a New City A Guided Game



Players will learn about the history of Johnson County and will play the role of people who have arrived in the city and are looking for a place to live. A "real estate agent" will show players the different neighborhoods in the city. Similar to the game of musical chairs, players will have to find "their" home quickly because there are very few houses available in the best neighborhoods. Students will compare their experience in the game with some experiences that individuals and communities have with discriminatory practices.

OBJECTIVES

Identify that cities and neighborhoods change over time. Identify segregation as a common result of change. Identify that perspectives and attitudes towards people change over time. Identify that attitudes towards people can affect their access to certain resources and rights.

Skills

Students will use their physical abilities to move quickly and strategically, collaborate to make decisions, empathize with others, and verbalize their emotions.

Overarching Questions

- Can a person be in a place of their choice?
- How does where you live influence how you live?
- Why are some people denied basic rights, like housing?



20 mins



12 - 40 people



2nd - 8th grades



20 purple & 20 orange bandanas; 2 ropes

PREPARATION

- Before starting the activity, prepare a large space free of obstacles.
- In the center of the play area, place a rope forming a circle on the floor; this area will represent the old city center.
- In the rest of the play area, distribute orange and purple bandanas on the floor. These represent the supply of houses or apartments available in the city. Place some bandanas fully extended to represent houses, and others folded in half to represent apartments.
- Prepare additional orange and purple bandanas to be given to the students as they play.

Meet Tanya



Let's Disrupt Learning With Better History

What we covered

- Specifics of Gen Alpha
- Challenge of our learning system
- Magnificent teens and how to design for them
- What you can do and tools you can use
- The power of play

How do you feel?



Curious for more?

Please reach out.

We Co-Design.

We Train.

We Advise.

All with the power of play and learning science.

Thank you



Fernande Raine (fernande@thehistorycolab.org)