



Image Description: Black and white image of an Act Up protest. A Black activist is in the foreground speaking into a bullhorn mike. Behind the activist a group of people are carrying a banner that says "Act Up" (though obscured by the activist standing in the foreground). There are other signs held by protestors in the crowd, the only one that is readable has the pink triangle gay men and trans women were forced to wear during the holocaust and says "silence = death" cast of the show .

Image Source: [Out Magazine](#)

Visions Week 4: Mathematical Inqu[ee]ry

Welcome back! We will begin shortly. Until then, sit back and enjoy the music.



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Image Description: A circle, with a thick border of the circumference. The border is segmented into the various shades of color (more than the typical LGBTQ+ rainbow, but invoking it nonetheless). Inside the border it reads, "you are -lovable, -worthy, - enough, -brave" each list item is preceded by a rainbow heart, rather than a bullet point or number.

Image Source: [Pinterest LGBTQ+ Posters](#)

This Is A Brave (Not Safe) Space

- *Controversy with civility*, where varying opinions are expected with a group commitment to understand the source of disagreement & work together toward a common solution.
- *Owning intentions & impact*, in which we acknowledge & discuss instances where dialogue has affected the emotional well-being of another person
- *Challenge by choice*, where we have an option to step in & out of challenging conversations
- *Respect*, where we show respect for one another's basic personhood
- *No attacks*, where members agree not to intentionally inflict harm.

So We Will

- Work collaboratively
- Be provocative yet caring
- Feel "comfortably uncomfortable"
- Extend grace to ourselves and others - we won't expect perfection
- Embrace cognitive dissonance
- Center calm and healing
- Follow the 40 second rule (make space for new voices)

Source: Brian Arao & Kristi Clemens's "[From Safe Spaces to Brave Spaces](#)" (2013)



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Discussion

Over the last two weeks, what word problems did you encounter that would benefit from Drs. Yeh & Rubel's method of queering borders?

Sources:

Yeh & Rubel's "[Queering Mathematics: Disrupting Binary Oppositions in Mathematics Pre-service Teacher Education](#)" (2020)



Image Description (from source): "PLAYING WITH FIRE" (2021) is part of a recent series of works on paper that Gibson began about two years ago. "These pieces combine multiple aspects of my painting practice, but also my collections of vintage objects through print and sometimes the objects themselves, materials such as beads, pattern and collage. This piece features an image of a child's plastic toy that is meant to represent an Indigenous person, and a vintage pin that references a couple of different pop cultural graphic histories while promoting anti-racism."

Image Source: [Jeffrey Gibson's Instagram](#)



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Group Discussion: An Example

Developing Border Consciousness (Yeh & Rubel)

1. What knowledge (aside from the mathematics) and worldview is assumed by this word problem? What are the problem's assumptions or values?
2. Does this problem reflect your own experiences?
3. Whose experiences are reflected or not included?
4. How could we queer these problems so to reflect a wider number of windows and mirrors for our students?
5. What categories of resistance might you face to these new word problems and how will you respond or get support?

Archibald the Ant

(Source: Agile Minds Curriculum; Mathematics
7; Adding & Subtracting Integers)

Sources:

Yeh & Rubel's "[Queering Mathematics: Disrupting Binary Oppositions in Mathematics Pre-service Teacher Education](#)" (2020)



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Creative Insubordination



Image Description: *Image of India's first transgender dance troupe performing at a 2017 Mumbai Pride event.*

Image Source: [SBS](#)

- Press for Explanation
- Counter with Evidence
- Use the Master's Tools
- Seek Allies
- Turn a Rational Issue into a Moral One
- Fly Under the Radar

Sources:
Gutiérrez's "[Strategies for Creative Insubordination in Mathematics Teaching](#)" (2016)



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Mathematical inqu[ee]ry is “...questioning the tasks, the strategies, the very ways of thinking and doing mathematics, as well as the way mathematics is used to interpret and act in the world.” (p. 186)

Mathematical Inqu[ee]ry goes beyond mere inclusion of queer students, families, and issues into extant frameworks and allows elementary teachers and students to deconstruct and disrupt educational norms as well as imagine new possibilities in mathematics and in the world. (p.183)

Sources:

Rands' "[Mathematical inqu\[ee\]ry: Beyond 'add-queers-and-stir' elementary mathematics education](#)" (2009)

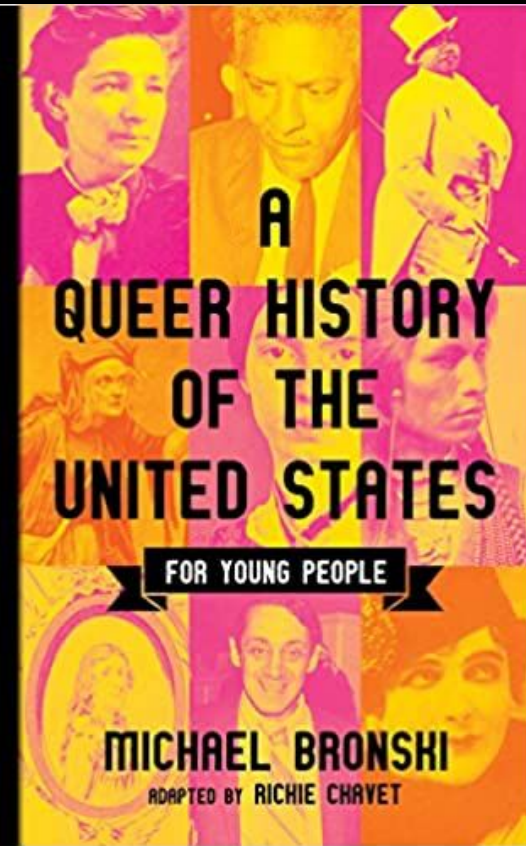
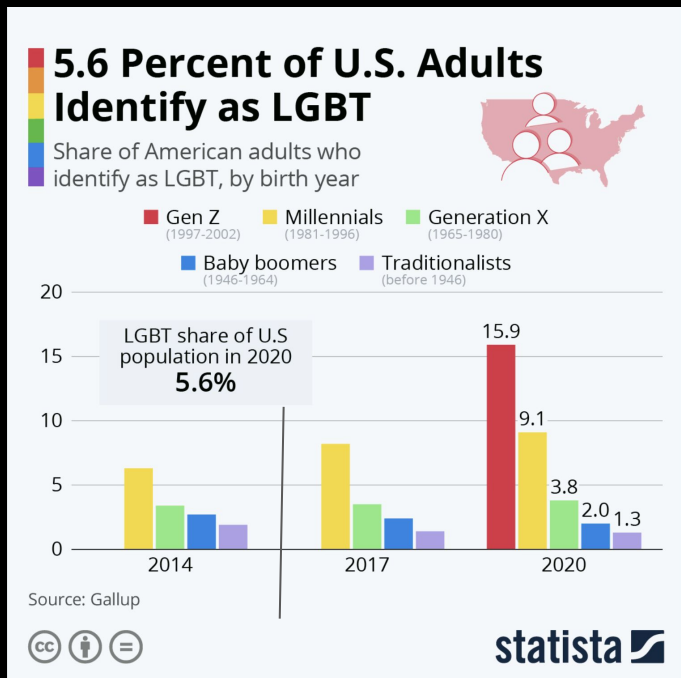


Image Description: *Image of the cover of the book [A Queer History of the United States for Young People](#) by Michael Bronski and adapted by Richie Chavet.*

Image Source: [Charis Books & More: Your Independent Feminist Bookstore](#)

Problem Posing as Mathematical Inqu[ee]ry



What are some things you notice about the graph?
What are some questions (wonderings) you have about the graph? We'll think on our own for about 1 song and then come back together and share out.

Scratch Pads:

[Steph](#)
[Jessica](#)
[Dewey](#)
[Kyle](#)
[Kevin](#)
[Trena](#)



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I Notice, I Wonder...



I Notice:

- I notice Gen Z is only listed up to 2002, (probably bc all the Gen Z after 2002 are not considered adults yet?)
- In 2017, the “oldest” of Gen Z were not yet adults, that maybe that’s why the red bar only shows up once
- Millennials seem to be increasing
- Traditionalists and Baby boomers seem to have more of a negative slope, where millennials

I Wonder:

- I wonder where “5.6%” is coming from, I couldn’t figure out how they were being added up.
- I wonder the validity of the numbers for earlier generations
- I wonder (worry) about the ways in which this graph may be used to make inaccurate assumptions about different populations.
- Why are there numbers over 2020 and not other years? Are they percentages?

How does (and/or does not) invoke the tenants of mathematical inquiry that Rands describes?



Image Description: Image of Billy Porter surrounded by drawings depicting major moments in LGBTQ+ history (outside of the stonewall riots)

Image Source: [them](#)



Image Description: *Bisa Butler's quilt work "If I ruled the world I'd free all my sons" (2021). The image is of a small child, decorated in vibrant colors, from their top hat, to the rainbow scarf around their neck.*

Image Source: [Bisa Butler's Instagram](#)

Preparing for Next Session (Nov 16th)

- Read:
 - Waid & Turner's "[Inqu\[ee\]ry Across the Curriculum](#)", (2021)
- Check out the [wonderings](#) the students came up with based on this image.
 - Question to ponder: What mathematical activities could we design to explore those wonderings, while sticking to the tenants of mathematical inquiry?
- Share your [feedback!](#)