



Image Description: Image of Kyne Santos, who is a former Canada Drag Race contestant. Kyne is laying on the ground, surrounded by several pies.

Image Source: [Kyne's Facebook](#)

Visions Week 5: Cross Disciplinary Questions

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



The Queer Mathematics Teacher
Educational Coaching to Re/humanize Mathematics

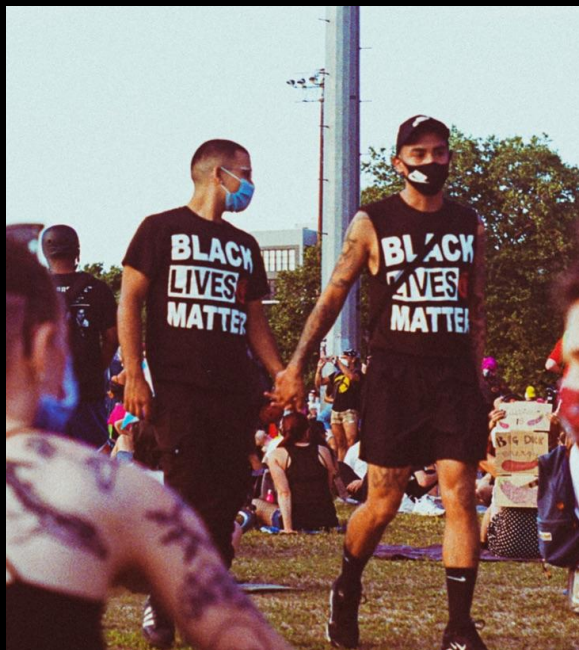


Image Description: Two masculine presenting Black folk holding hands. Both are wearing masks and Black Lives Matter Shirts

Image Source: [Nate Isaac Unsplash](#)

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)

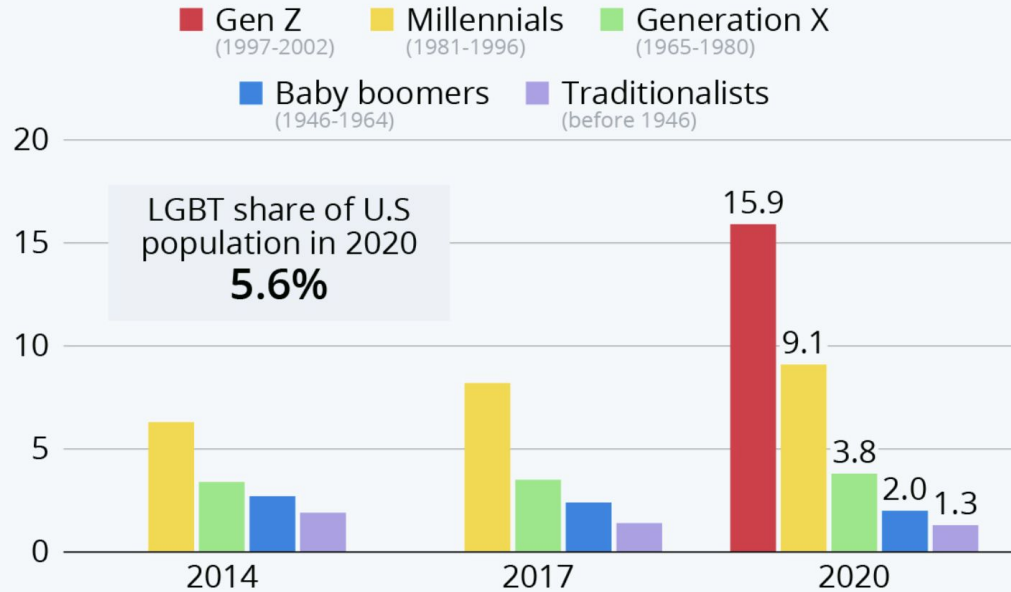
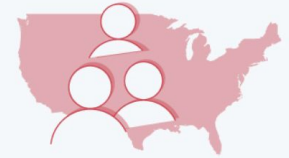


Wondering #1

“LGBT share of U.S. Population in 2020: 5.6%” How many people is that?

5.6 Percent of U.S. Adults Identify as LGBT

Share of American adults who identify as LGBT, by birth year



Source: Gallup



statista



The Queer Mathematics Teacher

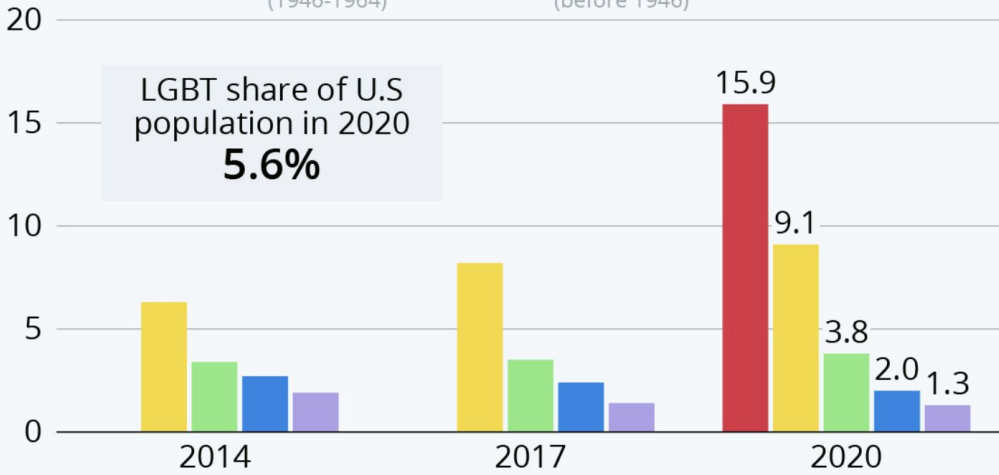
Educational Coaching to Re/humanize Mathematics
www.TheQueerMathematicsTeacher.com

5.6 Percent of U.S. Adults Identify as LGBT

Share of American adults who identify as LGBT, by birth year



■ Gen Z (1997-2002)
 ■ Millennials (1981-1996)
 ■ Generation X (1965-1980)
■ Baby boomers (1946-1964)
 ■ Traditionalists (before 1946)

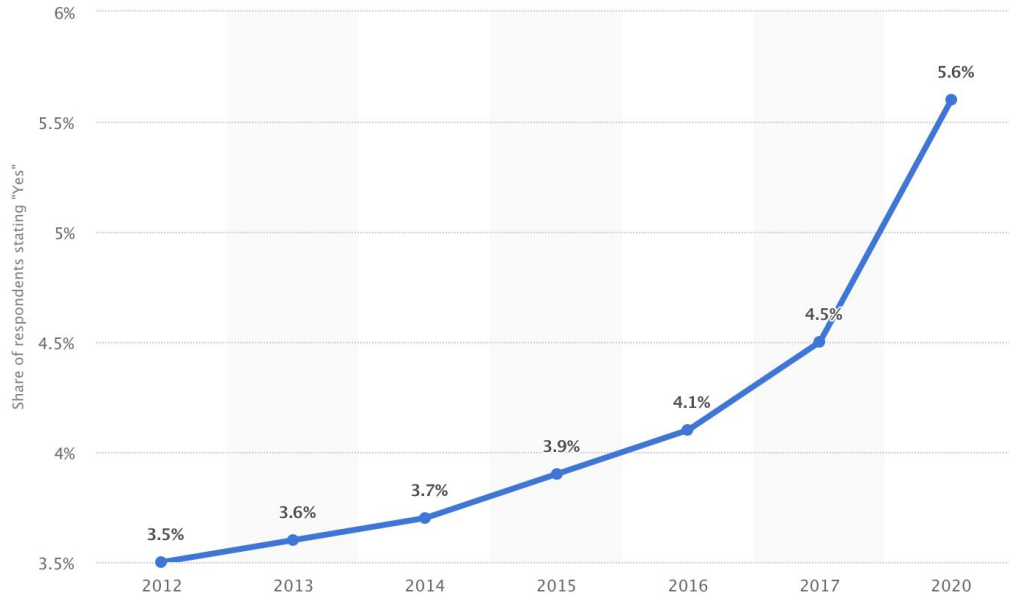


Wondering #2

When would we expect the # of LGBT people in the US to reach 10%? 20%?

Food for thought: To answer this question, what assumptions would we need to make? Why does that matter? Would this image be sufficient or would we need more data? If so, where would you find that data?

Wondering #2



© Statista 2021

[Show source](#)

[Additional Information](#)

When would we expect the # of LGBT people in the US to reach 10%? 20%?

[Let's explore](#)

Limitations: Assuming it's growing forever, which is not a given, based on % identification and political climate.



The Queer Mathematics Teacher

Educational Coaching to Re/humanize Mathematics
www.TheQueerMathematicsTeacher.com



The Queer Mathematics Teacher

Educational Coaching to Re/humanize Mathematics
www.TheQueerMathematicsTeacher.com

Wondering #3

What are the numbers like in Germany?

Food for thought: Would this image be sufficient or would we need more data? If so, where would you find that data?

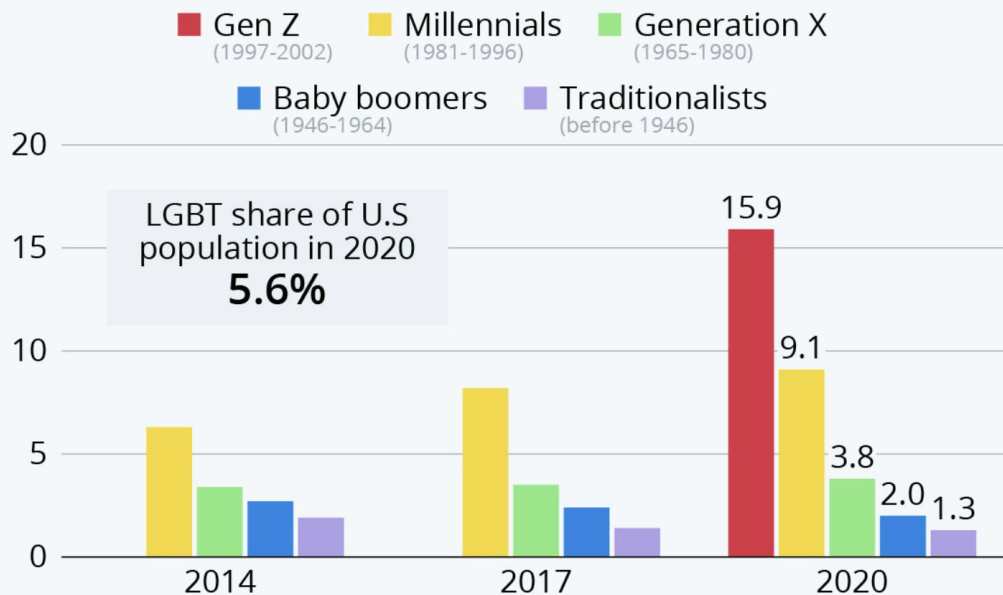


The Queer Mathematics Teacher

Educational Coaching to Re/humanize Mathematics
www.TheQueerMathematicsTeacher.com

5.6 Percent of U.S. Adults Identify as LGBT

Share of American adults who identify as LGBT, by birth year



Source: Gallup



statista

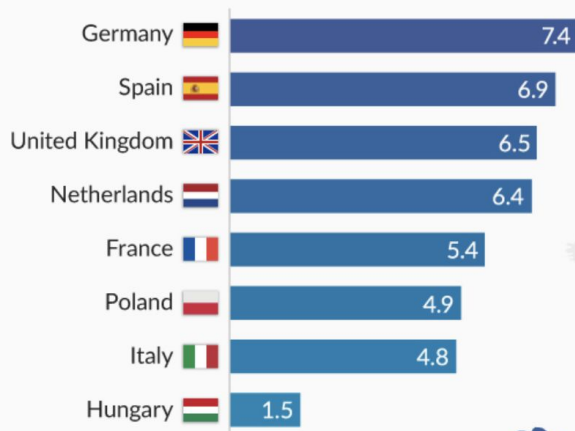
Wondering #3

What are the numbers like in Germany?

7.4% of people in Germany identified as LGBT in 2016. How many people is that?

Europe's LGBT population mapped

% of the population identifying as LGBT in selected countries in 2016



@StatistaCharts

Source: Dalia

indy100

The INDEPENDENT

statista



The Queer Mathematics Teacher

Educational Coaching to Re/humanize Mathematics
www.TheQueerMathematicsTeacher.com

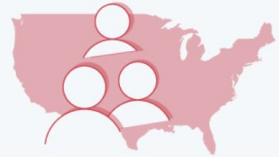


The Queer Mathematics Teacher

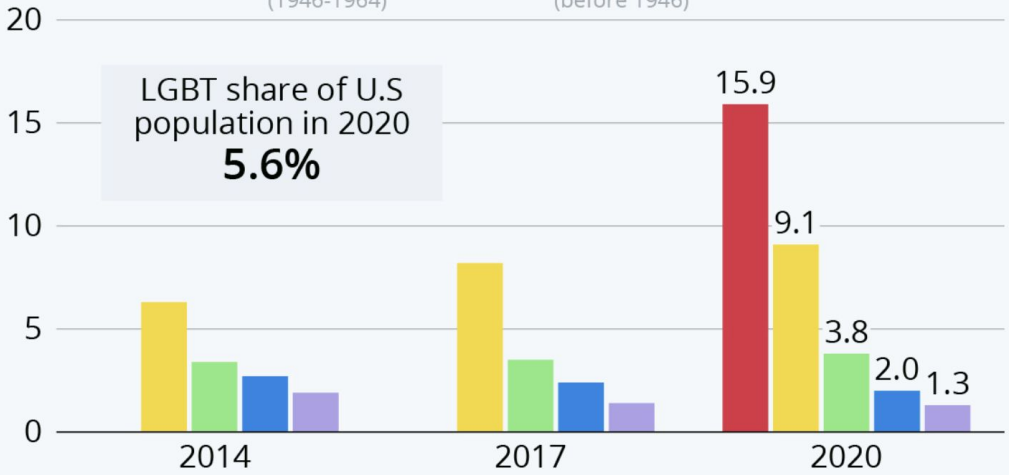
Educational Coaching to Re/humanize Mathematics
www.TheQueerMathematicsTeacher.com

5.6 Percent of U.S. Adults Identify as LGBT

Share of American adults who identify as LGBT, by birth year



Gen Z (1997-2002) Millennials (1981-1996) Generation X (1965-1980)
Baby boomers (1946-1964) Traditionalists (before 1946)



Source: Gallup



Wondering #4

If Germany followed a similar trend in increasing % of people identifying as LGBT over the years, what would we expect to be the # of LGBT people in 2020? When would Germany hit 10%? 20%?

Food for thought: Would this image be sufficient or would we need more data? If so, where would you find that data?



The Queer Mathematics Teacher
Educational Coaching to Re/humanize Mathematics
www.TheQueerMathematicsTeacher.com

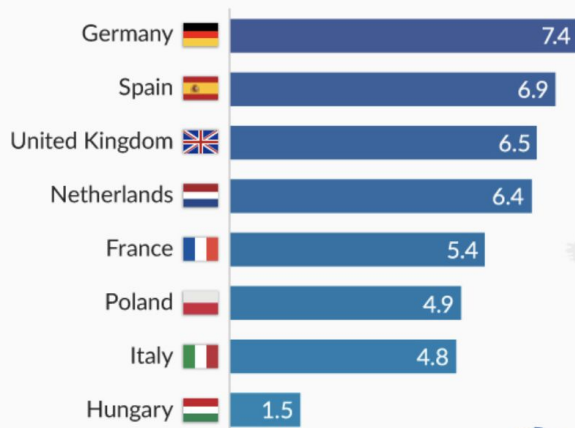
Wondering #4

If Germany followed a similar trend in increasing % of people identifying as LGBT over the years, what would we expect to be the # of LGBT people in 2020? When would Germany hit 10%? 20%?

Let's explore

Europe's LGBT population mapped

% of the population identifying as LGBT in selected countries in 2016



@StatistaCharts

Source: Dalia

indy100

The INDEPENDENT

statista



The Queer Mathematics Teacher

Educational Coaching to Re/humanize Mathematics
www.TheQueerMathematicsTeacher.com



The Queer Mathematics Teacher

Educational Coaching to Re/humanize Mathematics
www.TheQueerMathematicsTeacher.com

Wondering #5

Can we predict the % for each generation in future years? Future Generations? How would we go about that prediction?

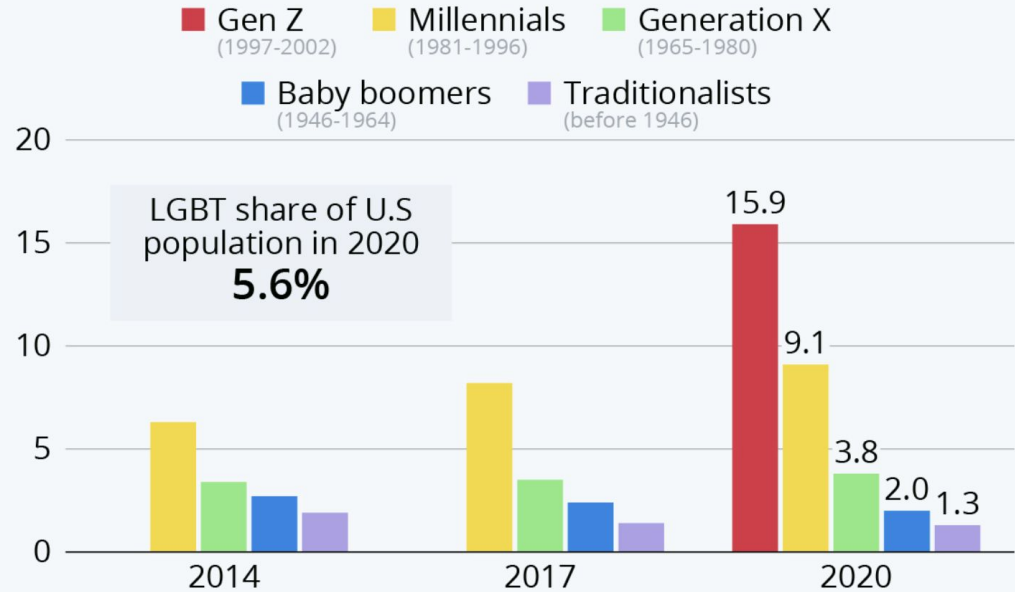
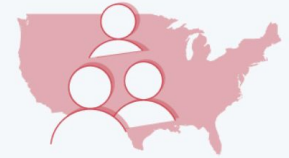
Food for thought: Would this image be sufficient or would we need more data? If so, where would you find that data?



The Queer Mathematics Teacher
Educational Coaching to Re/humanize Mathematics
www.TheQueerMathematicsTeacher.com

5.6 Percent of U.S. Adults Identify as LGBT

Share of American adults who identify as LGBT, by birth year



Source: Gallup



statista

Wondering #5

Can we predict the % for each generation in future years? Future Generations? How would we go about that prediction?

2020 for each Gen

Each Gen over time (2012 - 2020):

Millennials

Generation X

Baby Boomers

Traditionalists

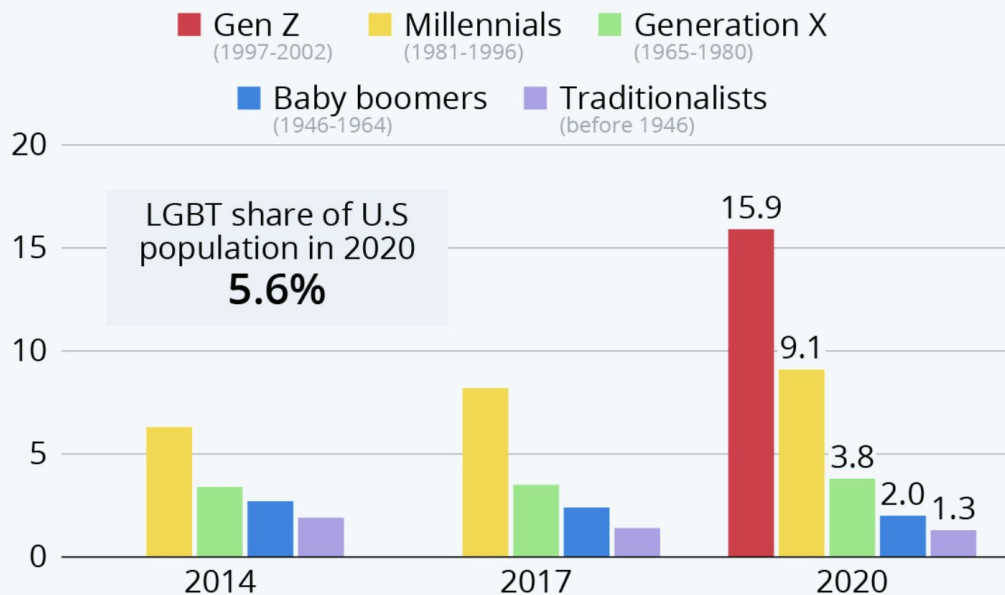


The Queer Mathematics Teacher

Educational Coaching to Re/humanize Mathematics
www.TheQueerMathematicsTeacher.com

5.6 Percent of U.S. Adults Identify as LGBT

Share of American adults who identify as LGBT, by birth year



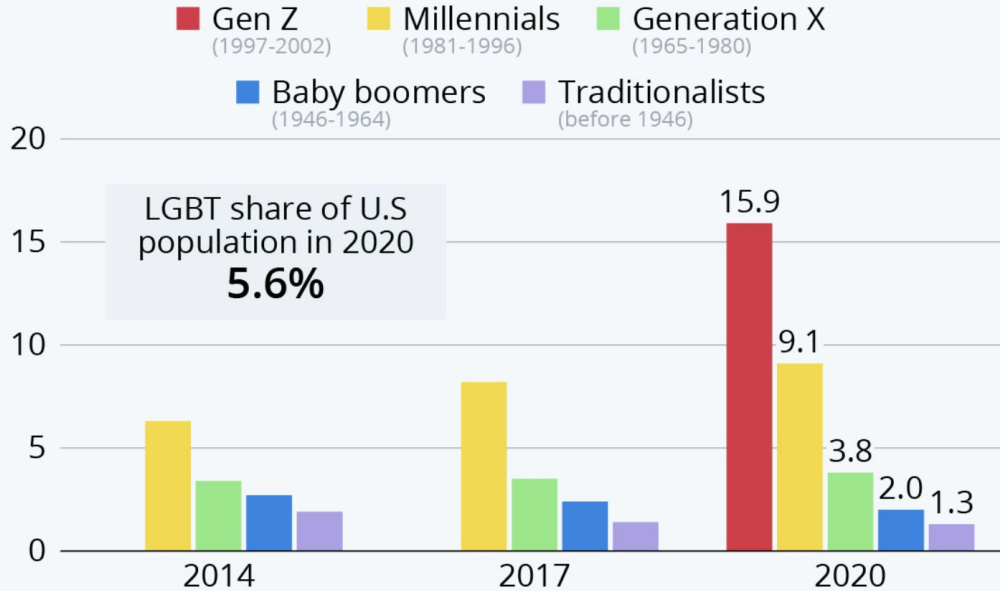
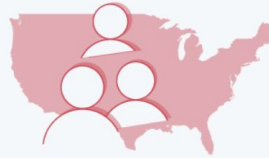
Source: Gallup



statista

5.6 Percent of U.S. Adults Identify as LGBT

Share of American adults who identify as LGBT, by birth year



Source: Gallup



Wondering #6

Given the rise in identification? What's the rise in acceptance?

Food for thought: Would this image be sufficient or would we need more data? If so, where would you find that data?

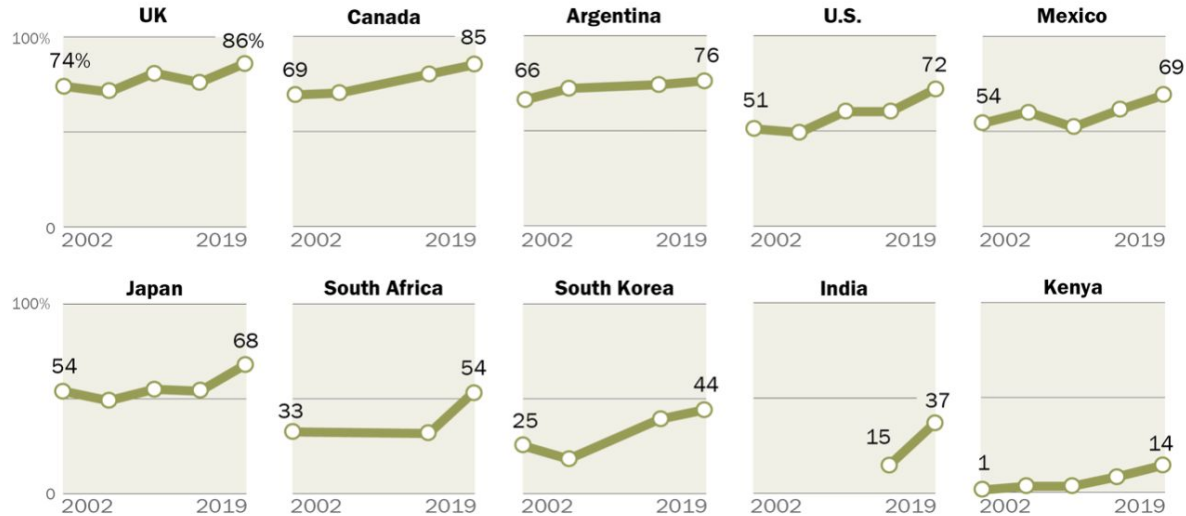


The Queer Mathematics Teacher
Educational Coaching to Re/humanize Mathematics
www.TheQueerMathematicsTeacher.com

Wondering #6

Rising acceptance of homosexuality by people in many countries around the world over the past two decades

% who say homosexuality *should* be accepted by society



Note: Only countries with double-digit increases from first survey year to 2019 shown. For more details, see Appendix A.
Source: Spring 2019 Global Attitudes Survey, Q31.

PEW RESEARCH CENTER

Given the rise in identification?
What's the rise in acceptance?

If each country follows these trends, when can we expect each country to reach 90% acceptance? [only countries w/three or more data points]
How would we use desmos to figure this out?



The Queer Mathematics Teacher

Educational Coaching to Re/humanize Mathematics

www.TheQueerMathematicsTeacher.com

Breakout Rooms

- 1) Explore some of the activities and discuss any thoughts or questions that arise.
- 2) What mathematical concepts do these tasks lend themselves towards?



Image Description (from source): *Two feminine presenting Black folx sitting on a couch watching TV and smiling One has on rainbow socks.*

Image Source: [Shingi Rice](#) [Unsplash](#)

Sources:

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

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



The Queer Mathematics Teacher

Educational Coaching to Re/humanize Mathematics
www.TheQueerMathematicsTeacher.com

Waid & Turner's CDQs for Gender-Based Inqu[ee]ry

CDQs for Gender-Based Inqu[ee]ry (Waid & Turner)

1. What do we notice?
2. What do we wonder?
3. What is the context?
4. What genders are represented and how are they presented? [e.g., intersectionality? Gender roles? Rigid?]
5. Who is included in the represented genders and who is not?
6. What other genders are there?
7. What would considering other gender identities add to our understanding?

While Yeh & Rubel's (2020) Qs were designed for you (i.e. the teacher) to use to observe your curriculum, these Q's were designed to use with students to help them in engaging critically with binary and other assumptions that reinforce hegemonic, normative structures.

Sources:

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

Waid & Turner's "[Inqu\[ee\]ry Across the Curriculum](#)" (2021)



The Queer Mathematics Teacher

Educational Coaching to Re/humanize Mathematics
www.TheQueerMathematicsTeacher.com

Using the CDQs with a Single Problem

CDQs for Gender-Based Inqu[e]ry (Waid & Turner)

Problem from the article:
“At a school dance, there are X boys and Z girls, and there are more boys than girls. How many different possible couples for dancing are there?” (Asdourian et al. p. 15).

1. What do we notice?
2. What do we wonder?
3. What is the context?
4. What genders are represented and how are they presented? [e.g., intersectionality? Gender roles? Rigid?]
5. Who is included in the represented genders and who is not?
6. What other genders are there?
7. What would considering other gender identities add to our understanding?

Sources:

Waid & Turner's "[Inqu\[e\]ry Across the Curriculum](#)" (2021)

Asdourian et al.'s *Park School Mathematics Curriculum Book 1* (2006)



The Queer Mathematics Teacher

Educational Coaching to Re/humanize Mathematics
www.TheQueerMathematicsTeacher.com

CDQs Across a Unit: Pay Inequity Gr 7 Unit (Ratio & Proportion)

Ratios and Unit Rates

Proportionality

Inheritance & Generational Wealth

	Median Income (rounded to the closest thousand)	Hours worked in a year	Ratio of Median Income to Hours worked in a year	Unit Rate
White (non-Latinx/Hispanic) man	61000	1920		
White (non-Latinx/Hispanic) woman	48000	1920		
Black or African American man	41000	1920		
Black or African American woman	37000	1920		
Asian man	71000	1920		
Asian woman	56000	1920		
Latinx/Hispanic man	40000	1920		
Latinx/Hispanic woman	32000	1920		
American Indian / Alaska Native man	41000	1920		
American Indian / Alaska Native woman	37000	1920		

1. A student claims that for no two groups are the ratios of salary to number of hours worked yearly (see Activity 3, Part 1, number 4) proportional. Is this statement correct or incorrect? Explain your reasoning.
2. Recall Activity 3, Part 1 in which you calculated that an Asian man would have to work 4260 hours to earn his \$71000 salary to have the same unit rate (approximately \$16.67 per hour worked) as that of a Latinx/Hispanic woman earning \$32000 for working 1920 hours in a year. The table below shows this information in red. Choose 4 rows of the table and find how many hours would need to be worked by the individual for their salary and hours worked to be in proportion with that of a Latinx/Hispanic woman earning \$32000 for working 1920 hours in a year.

	Median Income (rounded to the closest thousand)	Hours worked in a year
White (non-Latinx/Hispanic) man	61000	
White (non-Latinx/Hispanic) woman	48000	
Black or African American man	41000	
Black or African American woman	37000	
Asian man	71000	4260
Asian woman	56000	
Latinx/Hispanic man	40000	
Latinx/Hispanic woman	32000	1920
American Indian / Alaska Native man	41000	
American Indian / Alaska Native woman	37000	

Using the Survey of Consumer Finances (SCF), Thompson and Suarez (2015) found that white individuals were 22.9% likely to have received an inheritance, Black individuals were 10.6% likely to have received an inheritance and Hispanic/Latinx individuals were 5.5% likely to have received an inheritance. They also found that of the individuals that received inheritance, the median inheritance received varied by race, with white individuals inheriting a median value of approximately \$55,000, Black individuals inheriting a median value of \$49,000 and Hispanic/Latinx individuals inheriting a median value of \$29,000. This information is reflected in the table below.

	Median Annual Income	Median Inheritance Received
White (non-Latinx/Hispanic) man	61000	55,000
White (non-Latinx/Hispanic) woman	48000	55,000
Black or African American man	41000	49,000
Black or African American woman	37000	49,000
Latinx/Hispanic man	40000	29,000
Latinx/Hispanic woman	32000	29,000

Sources:

Waid & Turner's "[Inqueerly Across the Curriculum](#)" (2021)

Waid and Velamur's *A Mathematical Inqueerly into the Gender Pay Gap* (in preparation)



The Queer Mathematics Teacher

Educational Coaching to Re/humanize Mathematics
www.TheQueerMathematicsTeacher.com

CDQs Across a Unit: Pay Inequity Gr 7 Unit (Ratio & Proportion)

Cost of Living

Percentage Comparisons

1-2 Adult Households & Other Kinds of Families

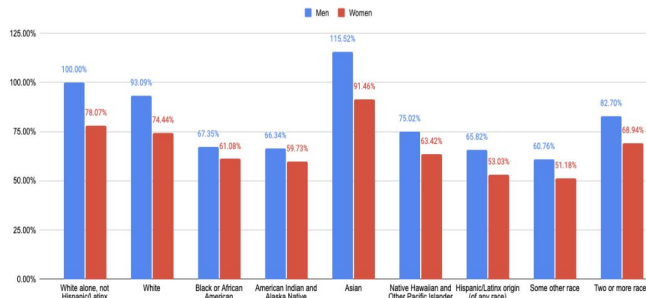
Most adult Americans indicate that buying a home sometime in their lifetime is a priority (Nerdwallet, 2020). Let's take a look at how income inequity impacts people's ability to do that. In 2019 (the year the data in the table was collected) the average annual expenditures (money spent for living costs) for a one person household in 2019 was \$38,000 (US Bureau of Labor Statistics, 2019).

1. Calculate the adjusted annual income for three different groups and record your answers in the table shown below.

	Median Income (rounded to the closest thousand)	Adjusted Annual Income (Median Income - Expenditures)
White (non-Latinx/Hispanic) man	61000	
White (non-Latinx/Hispanic) woman	48000	
Black or African American man	41000	
Black or African American woman	37000	
Asian man	71000	
Asian woman	56000	
Latinx/Hispanic man	40000	
Latinx/Hispanic woman	32000	
American Indian / Alaska Native man	41000	
American Indian / Alaska Native woman	37000	

Sources:
 Waid & Turner's "[Inequality Across the Curriculum](#) (2021)
 Waid and Velamur's *A Mathematical Inquiry into the Gender Pay Gap* (in preparation)

2019 Annual Median Income as Compared to White Men's (non-Hispanic/Latinx)



Source: US Census Bureau

How many adults are in this household? 1 or 2?

Indicate the sex of each individual in the household as well as their race and/or ethnicity.

Calculate the expected median annual income for this household. Explain how you got your solution (by showing your work or writing out some other description of the process).

Household 1

Calculate the expected household income over 5, 10, and 20 years. Explain how you got your solution (by showing your work or writing out some other description of the process).

Impact on Queer / Trans Households + "The Queer Tax"

Inflation/ Raises

Directions: Take a minute to reflect on the two findings of Schilt and Wiswall's study:

- Transgender women's income falls approximately 32 percent after they transition.
- Transgender men's income increases approximately 1.5 percent after they transition.



The Queer Mathematics Teacher

Educational Coaching to Re/humanize Mathematics
www.TheQueerMathematicsTeacher.com

CDQs Across a Unit: Pay Inequity Gr 7 Unit (Ratio & Proportion)

Final Project Choices

Research one of the following legislations or initiative

- H.R.40 - The Commission to Study and Develop Reparation Proposals for African-Americans Act
- H.R. 5 - The Equality Act
- Raise the Minimum Wage Act
- The Fair Labor Standards Act (FLSA) - Subminimum wage for individuals with disabilities
- Land Back/Land Reparations Initiative

Final Project Products

Use your research and mathematical explorations to complete one of the following:

- Organize and Carry Out an Information Campaign (Digital or otherwise)
- Organize and Carry Out a Letter Writing Campaign or some other means of contacting local representatives
- Organize and Carry Out a Petition
- Some other idea! (Get pre-approval)

Sources:

Waid & Turner's "[Inqueerly Across the Curriculum](#)" (2021)

Waid and Velamur's *A Mathematical Inquiry into the Gender Pay Gap* (in preparation)



The Queer Mathematics Teacher

Educational Coaching to Re/humanize Mathematics
www.TheQueerMathematicsTeacher.com

What other ways
might the CDQs used
in middle/high school
mathematics
classrooms?



Image Description: *Image of a feminine presenting person squatting in an intersection in a Mexican city (per source description), looking at the camera and smiling. They have on a black long sleeved shirt, white pants and black combat boots. They are also wearing a gray bandana around their neck and what appears to be a rainbow scarf.*

Image Source: [Ana Enriquez Unsplash](#)



The Queer Mathematics Teacher

Educational Coaching to Re/humanize Mathematics
www.TheQueerMathematicsTeacher.com



Preparing for Last Session (Dec 14th)

- Set a goal: Identify one goal for yourself in relation to implementing your learning from this series. Set a deadline for the goal.
- With your goal in mind: select one task, unit or other item that you would like to apply a queer lens to.
 - Take some notes on how you might use one (or all three) of the approaches we've discussed in past weeks to queer the unit, lesson, problem, task, etc. and bring them to our last session!
- Check out the [shared resource Jamboard](#) - per one of your suggestions!
- Share your [feedback](#) !

Image Description: A feminine presenting Black individual smiling at the camera and holding up a pride flag behind them. The person is wearing a short sleeved striped shirt with a mouse on it and overalls.

Image Source: [Jakayla Toney Unsplash](#)