



Analyzing California Demographics Using a Math Lens

Time: 3 hours
Grade Level: 9-12

Purpose:

- Students will learn about system injustices by analyzing California's general population and K-12 student demographics and comparing them to higher education and California's Department of Corrections and Rehabilitation population demographics.
- Students will analyze the student demographics of local elementary/junior high schools.
- Students will reflect on themselves and their community after learning about the gathered data.

Unit Enduring Understandings Alignment:

- We understand and challenge all forms of oppression and their manifestations by conceptualizing and enacting transformative projects of agency and resistance.
- We understand that while studying forms of oppression, it is also critical to engage ourselves in developing critical consciousness, reclaiming hope and healing.

Lesson Guiding Questions:

- How do California's general population demographics compare to that of higher educational systems and the California Department of Corrections and Rehabilitation?
- What do data from our local school's School Accountability Report Card (SARC) tell us about the school's policy?
- How can we use data and our voices to create change and challenge types of oppression?

Essential Skills:

- I can analyze and interpret data on population demographics within California population, higher education, and California's Department of Corrections and Rehabilitation.
- I can work with others to develop a plan for justice in my school community.
- I can support my responsible decision-making skills by making a reasoned judgment after analyzing information, data, and facts and identifying solutions to social problems

Cultural Wealth (Yosso, p. 78):

- **Aspirational capital** refers to “the ability to maintain hopes and dreams for the future, even in the face of real and perceived barriers. This resiliency is evidenced in those who allow themselves and their children to dream of possibilities beyond their present circumstances, often without the objective means to attain those goals” (p. 77-78).
- **Navigational capital** refers to “skills of maneuvering through social institutions. Historically, this implies the ability to maneuver through institutions not created with Communities of Color in mind.

Ethnic Studies Principles Alignment:

- Critique empire and its relationship to white supremacy, racism, patriarchy, and cis-heteropatriarchy.
- Conceptualize, imagine, and build new possibilities for post-imperial life that promote collective narratives of transformative resistance, critical hope, and radical healing.

Standards Alignment:

Common Core Math Standards

- CCSS.MATH.CONTENT.HSS.IC.A - Understand and evaluate random processes underlying statistical experiments.
- CCSS.MATH.CONTENT.HSS.IC.B - Make inferences and justify conclusions from sample surveys, experiments, and observational studies.

Common Core ELA Standards

- CCSS.ELA-LITERACY.RH.9-10.7 - Integrate quantitative or technical analysis (e.g., charts, research data) with qualitative analysis in print or digital text.
- CCSS.ELA-LITERACY.CCRA.R.8 - Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.

ELD Standards

- Part 1.C.9: Expressing information and ideas in formal oral presentations on academic topics.
- Part 1.C.11: Justifying own arguments and evaluating others' arguments in writing

Materials:

- [Link to Slide Deck](#)
- Paper
- Chromebook
- School Accountability Report Card (teacher discretion)

Modifications, Accommodations, and Resources for Multilingual Students :

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| <ul style="list-style-type: none"> ● Translation of critical concepts for multilingual learners ● Slow reveal to guide thinking and process information ● Use of movement to engage understanding | <ul style="list-style-type: none"> ● Graphic organizer to organize data collection ● Infographics to identify key information |
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Critical Vocabulary:

CRITICAL VOCABULARY	Definition and Rationale for choosing this word, phrase, or concept	Idea for pre-teaching or front-loading the concept.
School to Prison Pipeline	“The School to Prison Pipeline process by which students are funneled from disciplinary proceedings in schools into prisons and juvenile detention facilities.” (source)	Students will read the definition, and the teacher will facilitate a short discussion on the School to Prison Pipeline.
Zero Tolerance Policies	“Zero tolerance policies means that schools have no tolerance for any kind of infraction, no matter how minor.” (source)	Students will read the definition, and the teacher will facilitate a short discussion on zero tolerance policies.

C1: Cultural Rituals and Energizer

Description:

How will you engage the students? This energizer contributes to setting the “culture” of the

classroom while also connecting the main concepts of lesson plan to the students prior experiences/knowledge/interests. Please indicate if this ritual or energizer should be done daily, weekly, or just one time.

We encourage Ethnic Studies lessons to start off with land and ancestor acknowledgment.

STEP	DESCRIPTION	TIME
Slide 1	LESMCC Title Slide	
Slide 2	Title Slide: Analyzing California Demographics Using a Math Lens	1 min
Slide 3	<p>Land Acknowledgement - All California Tribes</p> <ul style="list-style-type: none"> As this lesson focuses on California, this Land Acknowledgment is on where we currently live, California, which is home to many Indigenous Tribes. This Land Acknowledgement is a formal statement that recognizes and gives respect to the Indigenous people as traditional stewards of their land. This Land Acknowledgement also respects the enduring relationship that exists between the Native people, their traditional language, and their culture on these lands. We Are On Indigenous Land. 	5 min
Slide 4	<p>Ancestor Acknowledgement - Ramiro “Ramsey” Muñiz</p> <ul style="list-style-type: none"> Explain to the students that this lesson honors the Mexican American attorney and activist, Ramsey Muñiz. Share the points about Edward Said printed on the slide. 	5 min
Slide 5	<p>Cultural Energizer - Ancestor Honor Wall</p> <ul style="list-style-type: none"> Read the slide to students. On an index card, ask students to write the name of an ancestor (whether theirs or of someone else) who was a victim of the criminal justice system or of any system. You may have students share the ancestor they chose. After, have students staple their index cards on the wall one-by-one. As they do, students may say the ancestor’s name aloud. 	5-7 min

C2: Critical Concepts

Description:

How will you present the critical concepts and vocabulary to the students? *Will you do an interactive lecture, video, text, or activity?*

STEP	DESCRIPTION	TIME
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Slide 6	<p>California Demographics -</p> <ul style="list-style-type: none"> You will be using the Slow Reveal Graphs method to breakdown the information presented in the display. You may have students share aloud, to their partners, or even utilize Pear Deck to gather students' responses. Ask students: "What do you notice? What do you wonder?" 	3 min
Slide 7	<ul style="list-style-type: none"> Ask students: "What do you notice, now? Does this change what you were wondering?What do you wonder?" 	3 min
Slide 8	<ul style="list-style-type: none"> "One out of eight US residents lives in California." "California's population has become increasingly diverse." "What we see from the circle chart is the population demographics of California. We can tell that Latinx/Chicanx make up 40.3% of the population, Black folks make up 5.6%, Asian Americans along with Native Hawaiians and other Pacific Islanders make up 16%, and Native American/American Indians make up 0.4% of the California population, however, continues to grow. In fact, one out of eight US residents live in California." 	10 min
Slide 9	<p>Disparities</p> <ul style="list-style-type: none"> Conduct another slow reveal. Ask students: "What do you notice? What do you wonder?" 	3 min
Slide 10	<ul style="list-style-type: none"> Ask students: "What do you notice, now? Did this change what you were wondering?" 	3 min
Slide 11	<ul style="list-style-type: none"> Ask students: "What do you notice, now? Predict what this may be about." 	3 min
Slide 12	<ul style="list-style-type: none"> Ask students: "What do you notice, now? Predict what this may be about." 	3 min
Slide 13	<ul style="list-style-type: none"> Ask students: "What does this chart share? What is it about?" "Although the population demographics are different from what we previously viewed, let's focus on the distributions of each ethnic and racial group within the K-12 setting, University of California institutions (UC), California State University institutions (CSU), and Department of Corrections (DOC). " 	10 min
Slide 14	<ul style="list-style-type: none"> Answer the questions. You may use any approach that you would like, like class discussion, think pair share, etc. 	10-15 min
Slide 15	<p>School to Prison Pipeline</p> <ul style="list-style-type: none"> Read the slide. Suggestion - expand on "what is policy" versus "what is practiced" 	10-15 min

	<ul style="list-style-type: none"> ● Ask, “What connections can we make with the School to Prison Pipeline and the disparities of the data on ethnicity and race across California population, higher education institutions, and prisons that we just examined?” 	
Slide 16-17	<p>School to Prison Pipeline Infographic</p> <ul style="list-style-type: none"> ● Give students time to view the infographic. ● “What stands out to you?” This may be answered as a class discussion, think pair share, or individually on sticky notes. 	10 min
Slide 18	<ul style="list-style-type: none"> ● Give students time to view the infographic. ● “What stands out to you?” This may be answered as a class discussion, think pair share, or individually on sticky notes. ● Read the slide. ● Ask the question on the slide. You may choose to have students answer on a sticky note, Think-Pair-Share, have a whole class discussion, etc. 	15-20 min
Slide 19	<p>Zero Tolerance Policies</p> <ul style="list-style-type: none"> ● Read through the slide ● Revisit the discussion on policy and practice. 	10-12 min
Slide 20-24	<p>Educational Pipeline</p> <ul style="list-style-type: none"> ● Conduct another slow reveal. ● Ask students: “What do you notice? What do you wonder?” ● Ask students: “What do you notice, now? Predict what this may be about.” 	3 min per slide
Slide 25	<ul style="list-style-type: none"> ● Ask students: “What does this chart share? What is it about?” ● Read the slide. ● “This chart comes from Falling through the Cracks: Critical Transitions in the Latina/o Educational Pipeline. It examines the educational attainment of ethnic and racial groups and gender within each group. We can see that there is less attainment as the degree increases. The authors of this report also make policy recommendations to increase higher educational attainment.” 	10 min
Slide 26	<ul style="list-style-type: none"> ● Review the recommendations made in Falling through the Cracks: Critical Transitions in the Latina/o Educational Pipeline, to give students more context in each recommendation. ● Read the recommendations on the slide and expand on them. ● As students “Do you agree with any of the recommendations? Do you disagree with any of them?” 	15-20 min

C3: Community Collaboration and/or Critical Cultural Production

Description:

How will the students learn and apply the main concepts while also learning to create community in their classroom and participate in cultural production? *This may include interactive/multimedia lectures, activities, group interaction, writing, performing, presenting, project-based work, etc...*

Make sure to include links to handouts and worksheets.

STEP	DESCRIPTION	TIME
Slide 27-30	SARC Dive <ul style="list-style-type: none"> Read the slide. You may choose the school site of your choice, or let students decide the school of their choice. You may also want to conduct this research before making the best decision for this community collaboration. If you decide on the SARC beforehand, you may consider creating a handout for students for this community collaboration. Model examining a SARC that will not be used in this activity. 	5 min
Slide 28	<ul style="list-style-type: none"> Give students a separate sheet of paper and have them recreate the table. 	20 min
Slide 29	<ul style="list-style-type: none"> Read the questions on the slide. You may choose the best method in answering the questions: class discussion, think pair share, gallery walks, etc 	15 min

C4: Conclusive Dialogue/Critical Circular Exchange

Slide 30	<ul style="list-style-type: none"> Conduct this as a class discussion.
Slide 31	<ul style="list-style-type: none"> Closing slide.

<p>Connection: How is this relevant to students? How is it relevant to the unit? How do you bring back to the PURPOSE of the unit?</p>	<p>This lesson is relevant to students because it may relate to students' personal lives and experiences, providing them a tangible understanding of societal structures and systems. Students gain social awareness of social injustices and disparities, fostering a sense of responsibility and a desire to engage in social change. They also learn to identify problems through critical thinking by analyzing data and policies to understand the root cause of ethnic and racial disparities in California. This lesson engages students in a solution-based approach so that they can establish structures of a socially just world.</p>
<p>Assessment: How will the students be assessed?</p>	<p>Students will be assessed on their verbal responses to class discussion questions throughout the lesson through feedback and further prompting of questions. They will also be assessed on their data collection and data analysis during the SARC Dive.</p>
<p>Evaluation: How will the effectiveness of this lesson plan be evaluated?</p>	<p>The effectiveness of this lesson plan will be evaluated through student work, student discussion, and student feedback. Formative assessments such as chart analysis, infographic observation responses, and the SARC Dive will indicate the effectiveness of the lesson.</p>

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