Algebra 1

Scatter Plots and Trend Lines

When you hear "criminal justice system" what comes to mind?

How do people end up in prison? (Think pair share)

What's the difference between prison and jail?

Warm up: Watch ▶ Mass Incarceration, Visualized

1. What is one piece of information that you learned from this video?

2. What is one piece of information that you knew or had heard before that this video confirmed for you or contradicted you?

https://portal.ct.gov/DOC/Report/Monthly-Statistics

Now let's look at some data from CT.

3. Use desmos, your calculator, or other technology to create a scatter plot (not a regression equation). Based on the graph, what do you notice about the number of people being incarcerated in Connecticut? Let 0 = the first half of 2016, 1 = the second half of 2016 etc…

4. What might be some contributing factors?

5. Create a regression equation to model the data. Write your equation below.

6. What is the slope of the trend line and what does it mean in the context of the problem?

7. What is the y-intercept of the trend line and what does it mean in the context of the problem?

8. Based on your equation and assigned data, estimate the average number of people incarcerated in Connecticut between Jan-June in 2022 (12).

9. Based on your equation and assigned data, estimate the average number of people incarcerated in Connecticut between July-Dec in 2023 (15).

10. Based on your equation and assigned data, during what period of time were there approximately 15,000 people incarcerated in CT prisons?

11. Based on your equation and assigned data, when will there be fewer than 5,000 people incarcerated in CT prisons?

12. Why do you think the prison population is decreasing? Do you think this will continue? Explain why or why not.

13. As more people are released from prison, how can we support them so that they don't end up back in prison (recidivate)?

14. What are some hopeful and positive takeaways that we can gain from this?

Extensions:

Have students pick a state/country that they're curious about and search for incarceration data (compare to CT)

Have students pick another factor they're curious about (other than race) and see what information they can find on it.