

College Board Analysis

SAT vs ACT Analysis: State of Testing, Trends and Recomme..	Title 1	Bimodal Distributions	Relationship between Participation and State Performance	A state being good at one test actually means they'll be wors..	Geographic Distribution of Compeition	State ACT vs. SAT performanc..
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Drew Hoppes
Data Scientist

You're the college board. You just received our 2018 results, and now you want to put them into context. As a reminder you are a national nonprofit membership association dedicated to preparing, inspiring, and connecting students to college and opportunity. (You also earn \$200,000,000 a year in revenue and make \$66,000,000 a year in profit) <https://patch.com/new-jersey/newbrunswick/bp--the-college-board-a-very-profitable-nonprofitIn>. The last decade the ACT has surpassed us in the number of test takers around the United States. The Washington Post was writing articles about our decline.

Our goal to increase test takers is not exactly a zero sum game, we are interested in marketing to traditional ACT test takers as a supplemnetary test to the SAT. Additionally, this year we rolled out a program to 10 states and the District of Columbia to give the SAT to all public high schools, so we want to see how that went.

Because the problem is that we face stiff competition, I want to test to see if the situation is as dire as it was a few years ago, and help make recommendations on where we can focus our efforts.



College Board Analysis

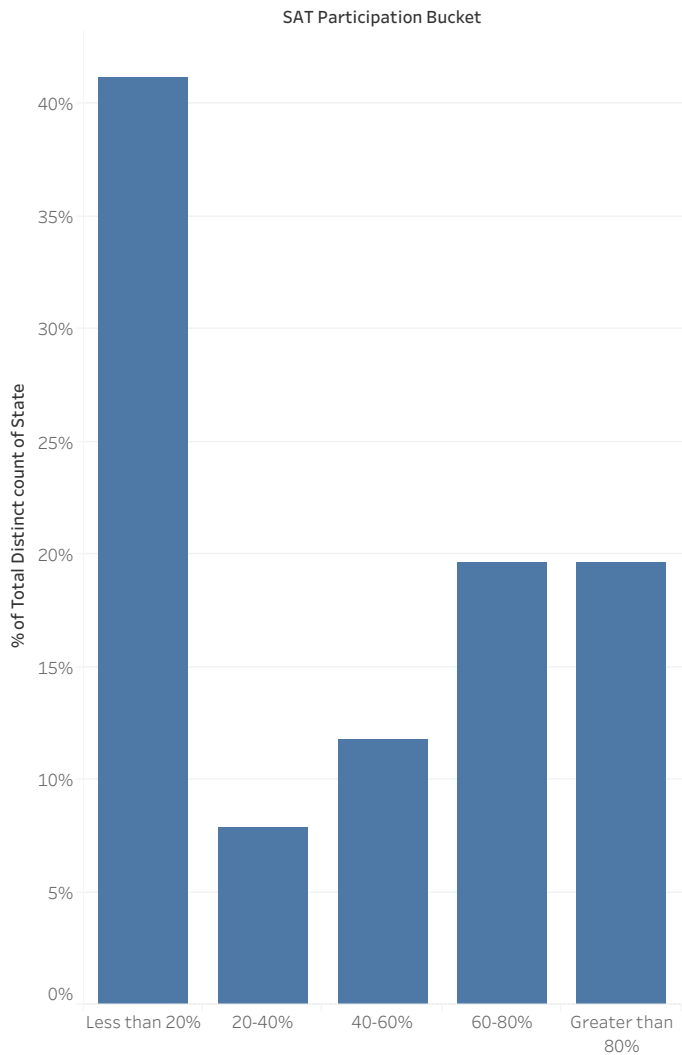
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Nature of Test Participation and Scoring

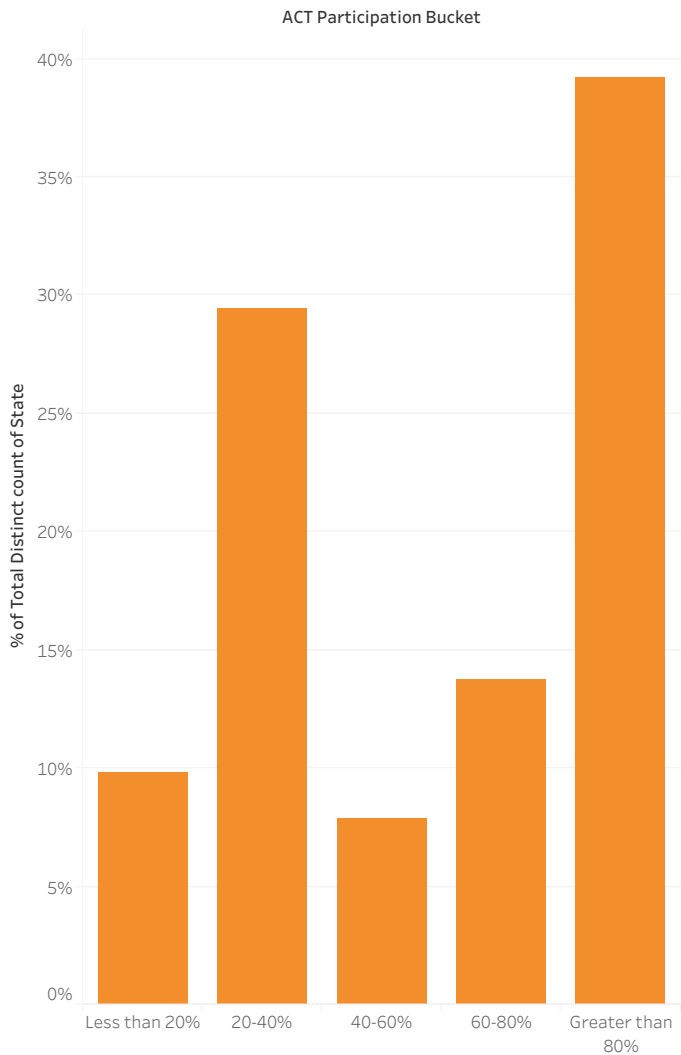
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Distribution for SAT Participation Rate



Distribution for ACT Participation Rate



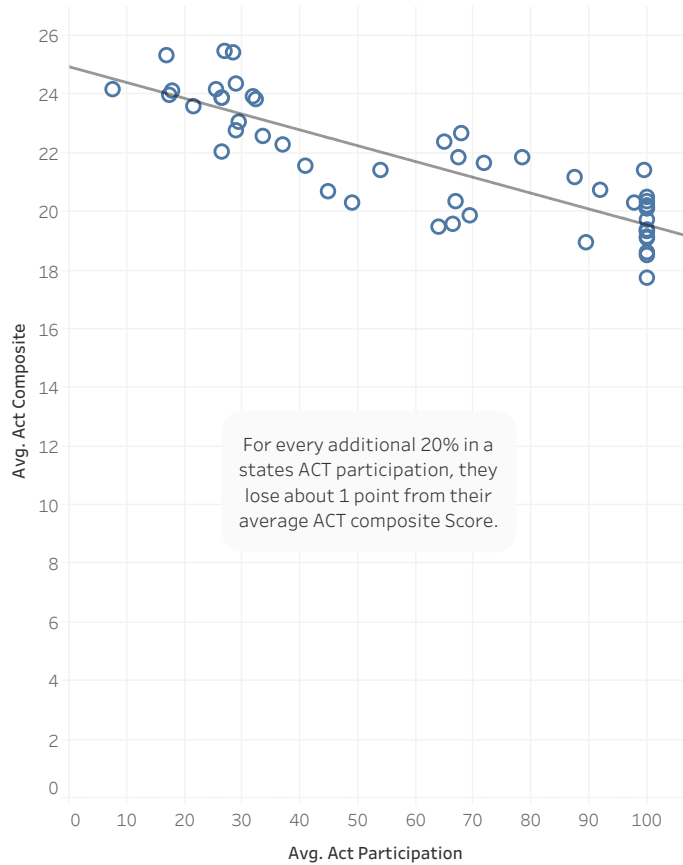
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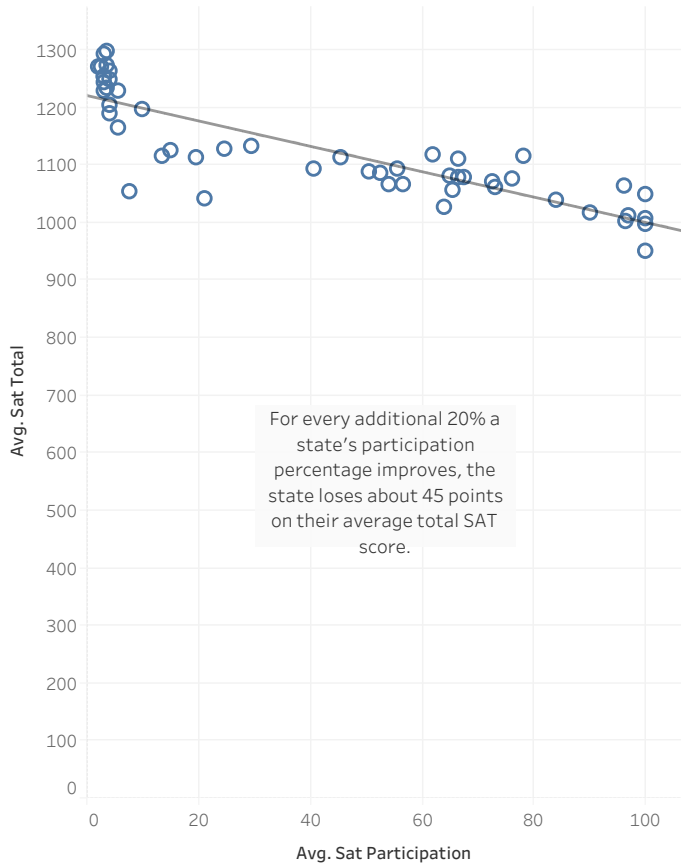
Strong Negative Relationship between Participation Percentages and Average Test Scores

The more participation in a state, the lower the score.

Significant Negative Relatinoship between ACT participation and Composite Score



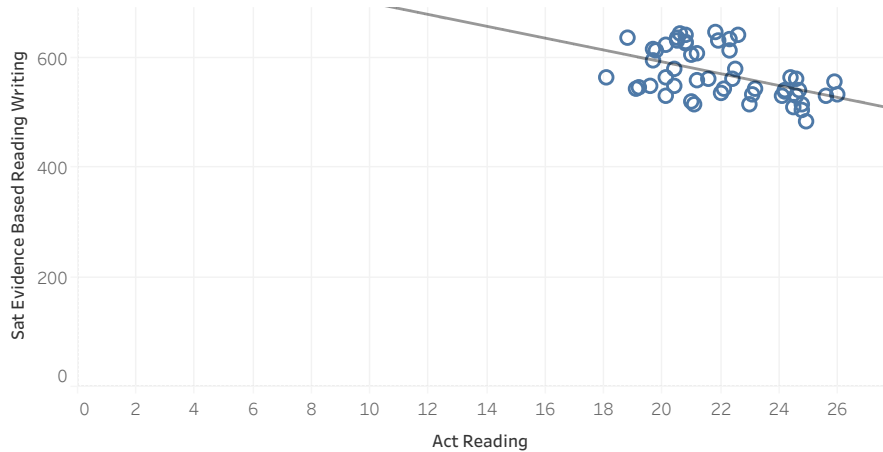
Significant Negative Relationship between SAT participation and Total Score



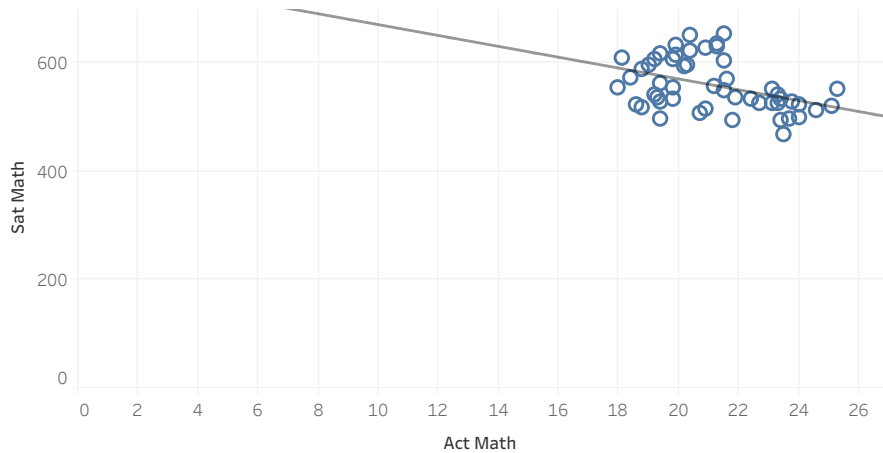
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Small Negative relationship between being good at ACT English vs. SAT English



Small Negative Relationship between being good at ACT Math vs. SAT Math



College Board Analysis

Bimodal Distributions	Relationship between Participation and State Performance	A state being good at one test actually means they'll be wors..	Geographic Distribution of Competition	State ACT vs. SAT performance breakdown	US Population	Geographic Breakdown
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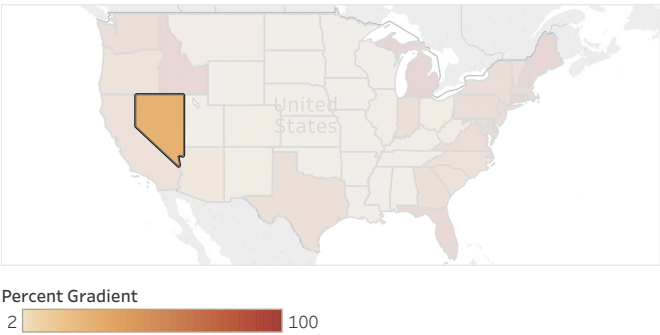
Geographic Distribution of Competition

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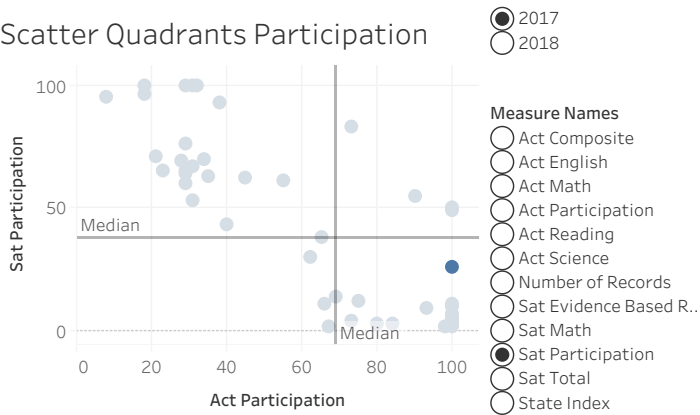
Relationship between Participation an..	A state being good at one test actually means they'll be wors..	Geographic Distribution of Competion	State ACT vs. SAT performance breakdown	US Population	Geographic Breakdown	Participation Changes Year over Year
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Very Rare to see States in Quadrant 1 as Participating in Both, or Performing Well in Both. ACT dominates middle-America, SAT dominates coasts.

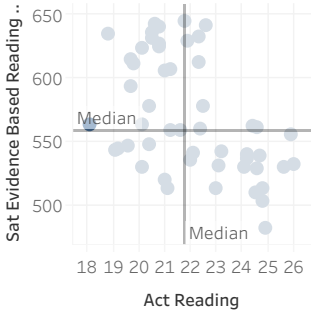
US States Colored by Sat Participation Score



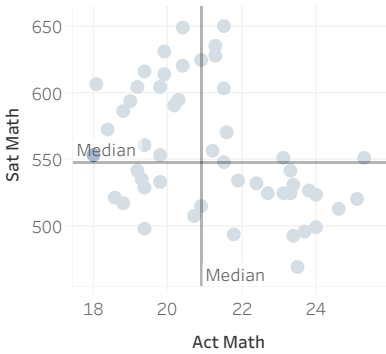
Scatter Quadrants Participation



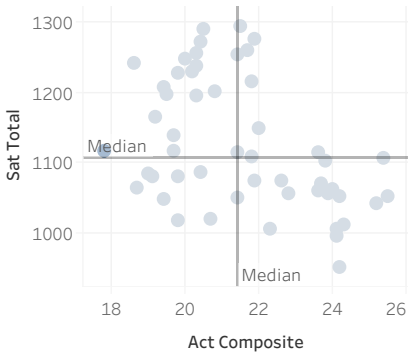
Scatter Quadrants Reading and Writing



Scatter Quadrants Math

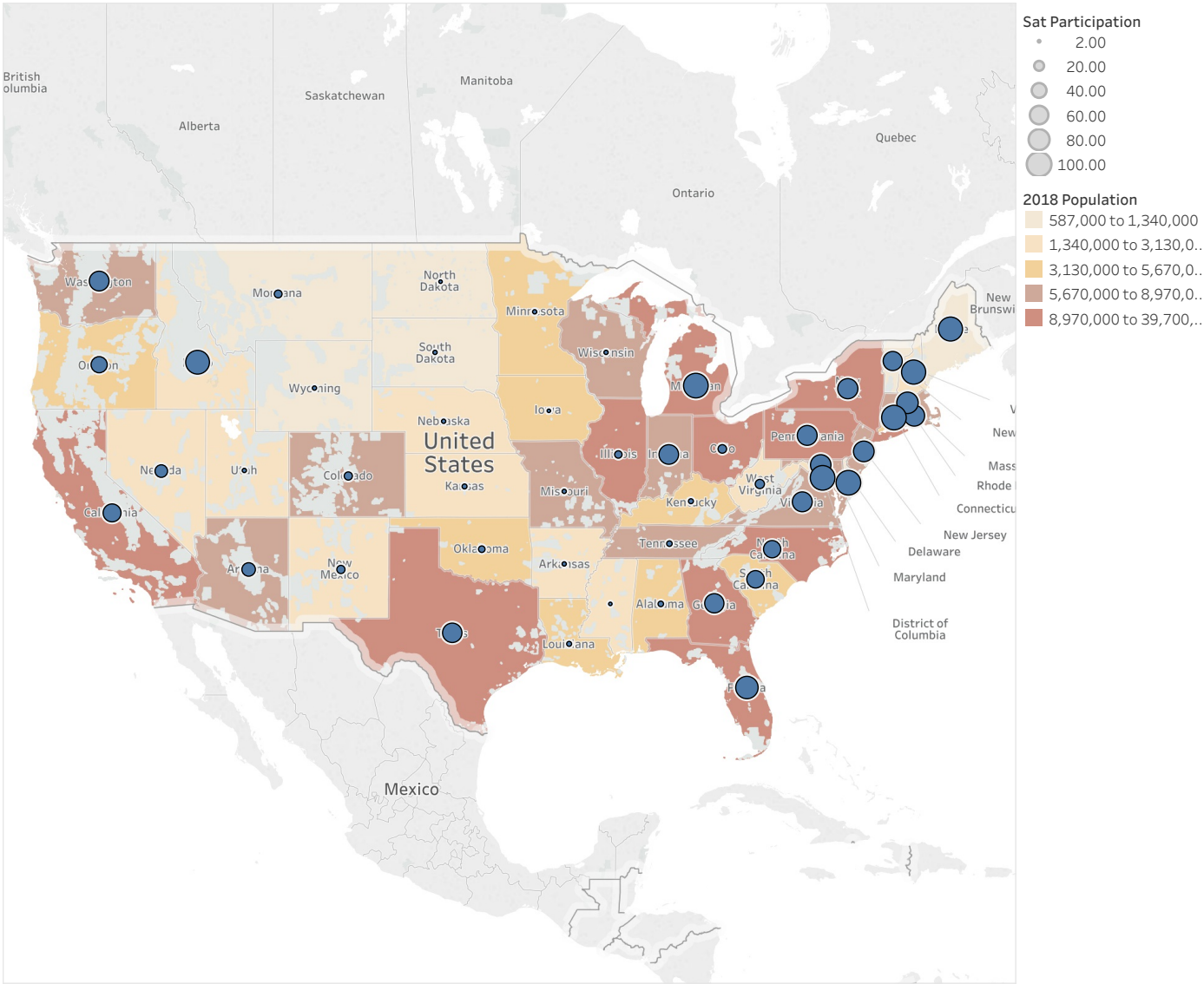


Scatter Quadrants Sat vs ACT



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A state being good at one test actually means t..	Geographic Distribution of Compeition	State ACT vs. SAT performance breakdown	US Population	Geographic Breakdown	Participation Changes Year over Year	Participation Year over Year
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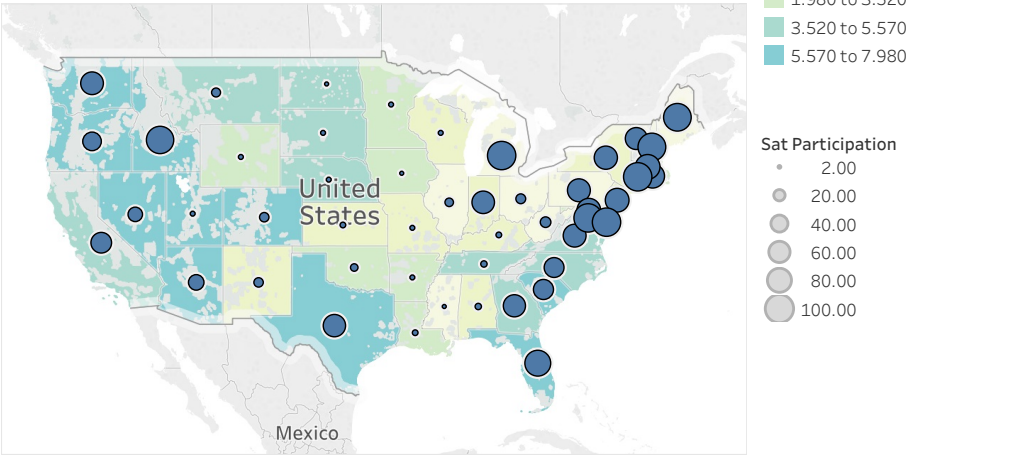


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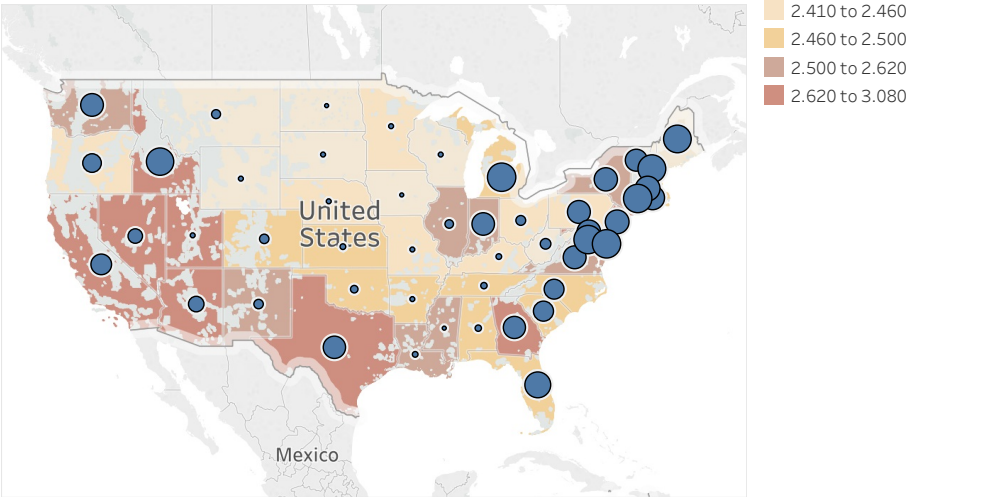
Geographic Distribution of Competition	State ACT vs. SAT performance breakdown	US Population	Geographic Breakdown	Participation Changes Year over Year	Participation Year over Year	Public School Program
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Takeaway. In large population areas like Texas, New York, California and Florida we are doing well. Florida has high population growth, but smaller households due to an aging population. We need to keep an eye on Texas, especially because it experience significant decline this year in performance.

How are we doing in areas experiencing population growth?



How are we doing in areas with large households?



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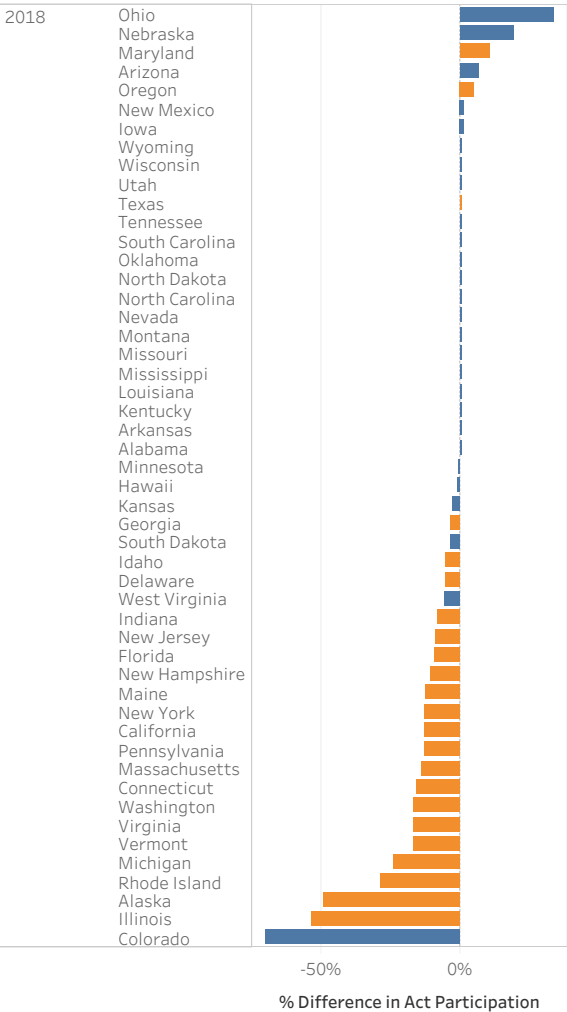
State ACT vs. SAT performance breakdown	US Population	Geographic Breakdown	Participation Changes Year over Year	Participation Year over Year	Public School Program	SAT Scores Increased more than ACT Scores.
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Change in Participation Year over Year

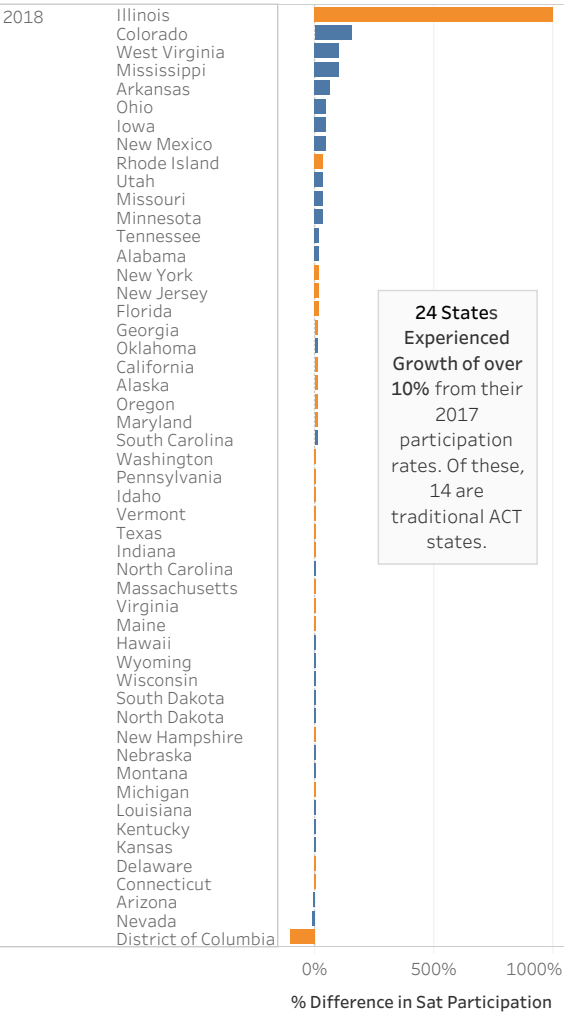
College Board Analysis

US Population	Geographic Breakdown	Participation Changes Year over Year	Participation Year over Year	Public School Program	SAT Scores Increased more than ACT Scores.	The Case of Colorado
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Change Year over Year Participation ACT



Change Year over Year Participation SAT



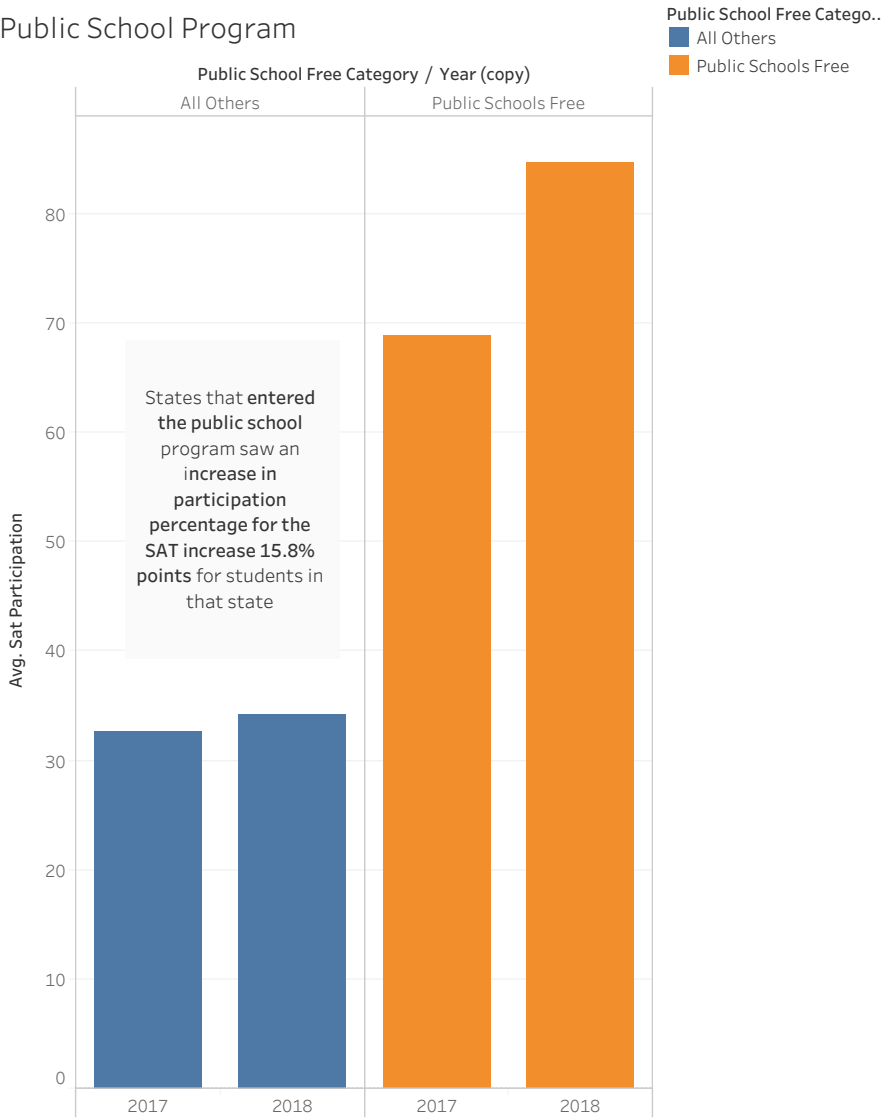
Traditional ACT
Traditional SAT

24 States Experienced Growth of over 10% from their 2017 participation rates. Of these, 14 are traditional ACT states.

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Geographic Breakdown	Participation Changes Year over Year	Participation Year over Year	Public School Program	SAT Scores Increased more than ACT Scores.	The Case of Colorado	The Case of Colorado
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Public School Program



College Board Analysis

Participation Changes Year over Year	Participation Year over Year	Public School Program	SAT Scores Increased more than ACT Scores.	The Case of Colorado	The Case of Colorado	Recommendations
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SAT Score changes from 2017 to 2018

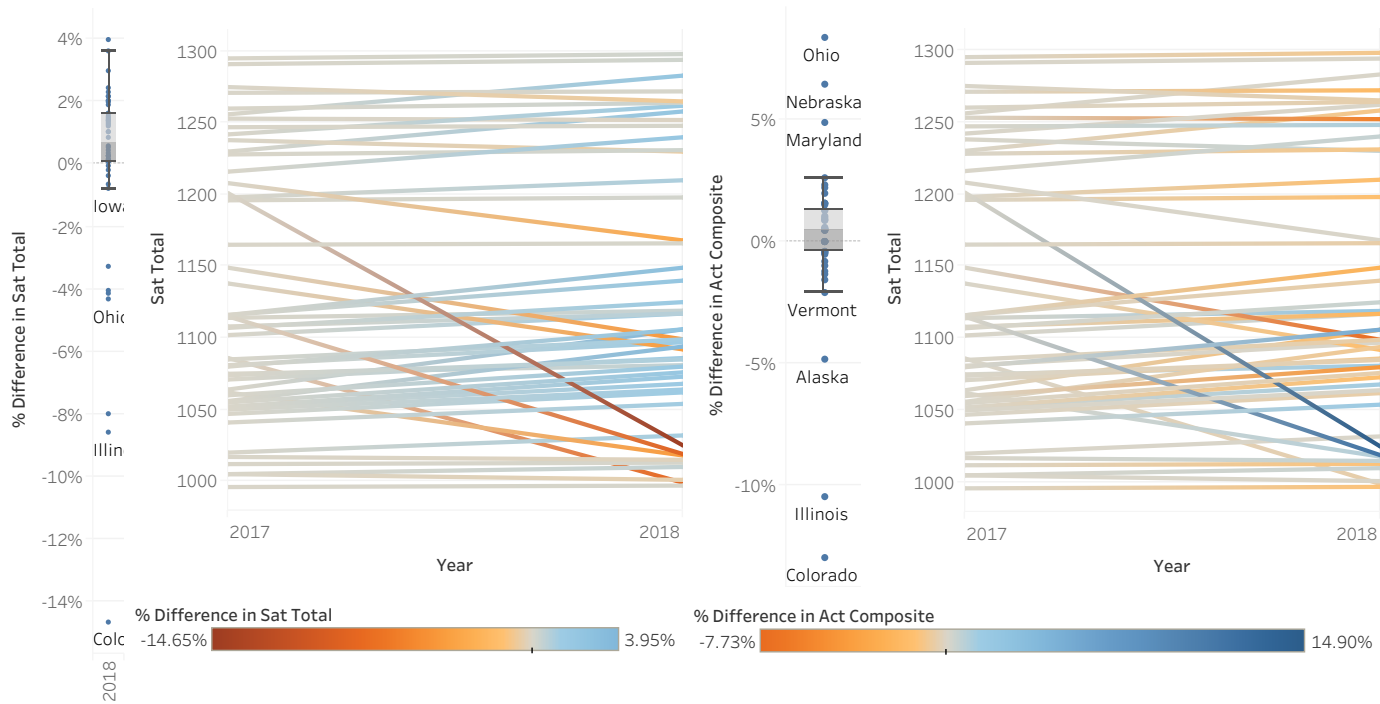
ACT Score changes from 2017 to 2018

Key takeaways:

- Median change was a .69% increase in SAT score
- 8 outliers, and while only one state was an outlier in outperforming the upper band of the IQR, there were 7 states that performed significantly poorer than the rest of the distribution.
- Colorado was noticeable in how severely it performed going from 1201 in 2017 to 1,025 in 2018.

Key takeaways:

- Median difference in year over year totals was .45%.
- 6 outliers, 3 positive and 3 negative.
- Colorado decreased again in 2018 by 12.97%



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Participation Changes Year over Year	Participation Year over Year	Public School Program	SAT Scores Increased more than ACT Scores.	The Case of Colorado	The Case of Colorado	Recommendations
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The Case of Colorado

College Board Analysis

Participation Changes Year over Year	Participation Year over Year	Public School Program	SAT Scores Increased more than ACT Scores.	The Case of Colorado	The Case of Colorado	Recommendations
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Colorado Education Board switched from the ACT to the SAT, winning a 5 year bid. This was also the year that they adopted free public school testing. The board mentioned that they liked how SAT aligns with Common Core, and how smart the great the reporting technology is on College Board.



College Board Analysis

Participation Changes Year over Year	Participation Year over Year	Public School Program	SAT Scores Increased more than ACT Scores.	The Case of Colorado	The Case of Colorado	Recommendations
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Recommendations and Next Steps

- + Overall performance was better than expected.
- + Traditional distribution of test performance by state has been bi-modal.
- + Bid on price for available contracts like in Illinois. ACT was upset that they lost out in what they thought was a calculation error.
- +Use other states as an example of capabilities in contract bids
- +Leverage technology
- + Continue to dominate High Population Areas, especially those with high growth and large household sizes.
- +Try to win over Middle America States
- Market the test as an supplement to ACT in optional states
- Use Illinois and Colorado as a capabilities statement

Next Steps

- + Use the companies business development data to analyze bids.
- + Go more in depth with demographic data
- +Look for lobbying opportunities
- + Continue to align with common core.
- +Continue to monitor Public School initiatives and roll out more broadly if possible.