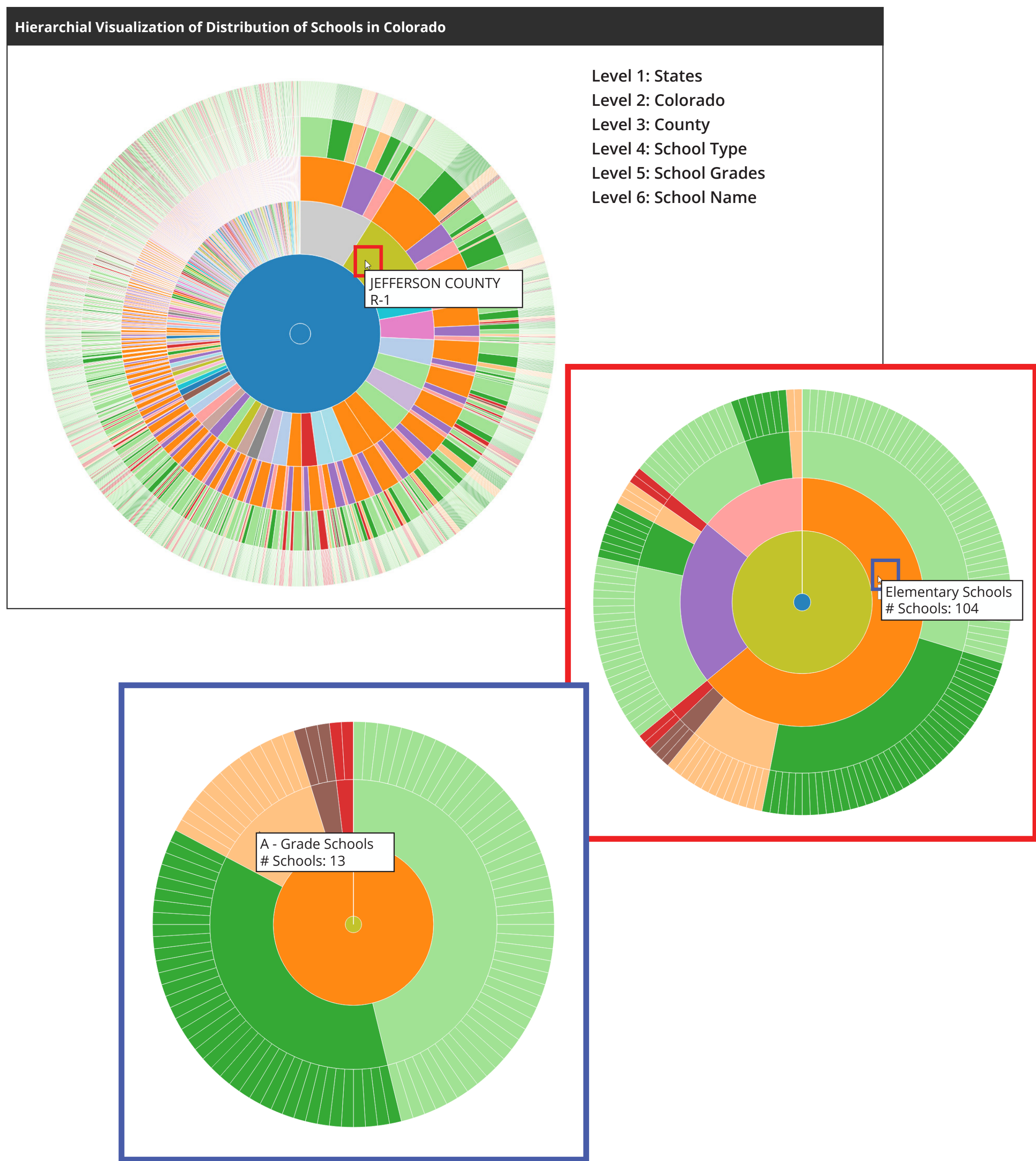


Objective:

Education is at the center of every society. It helps provide children a better future, giving them access to culture knowledge and future jobs. Building stronger communities and more advances societies. A good education system should be able to provide high performing schools to every child regardless of their Location, Income and Demographic diversities. The State of Colorado has collected data on their public school system for multiple years. Now, the challenge is in understanding what that data means and then in applying that knowledge to solve potential problems in the school system. This would be more easily accomplished if the large data source could be transformed such that it was more easily understood by individuals, such as in a visual format. Part of this project is to create such a visual representation of the data based on the rating systems created by the Colorado Department of Education and their other collected data.

Sunburst

This is a hierarchical visualization of the distribution of schools across the Colorado state by individual school grades. The multilevel arc represent the states, county, school grades and schools. The visualization offers a clickable drill down option for end users to zoom as per the preferences. The visualization is built with a framework with high reusability for future projects.



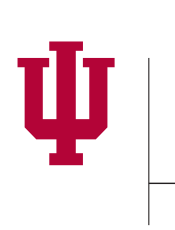
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Acknowledgements

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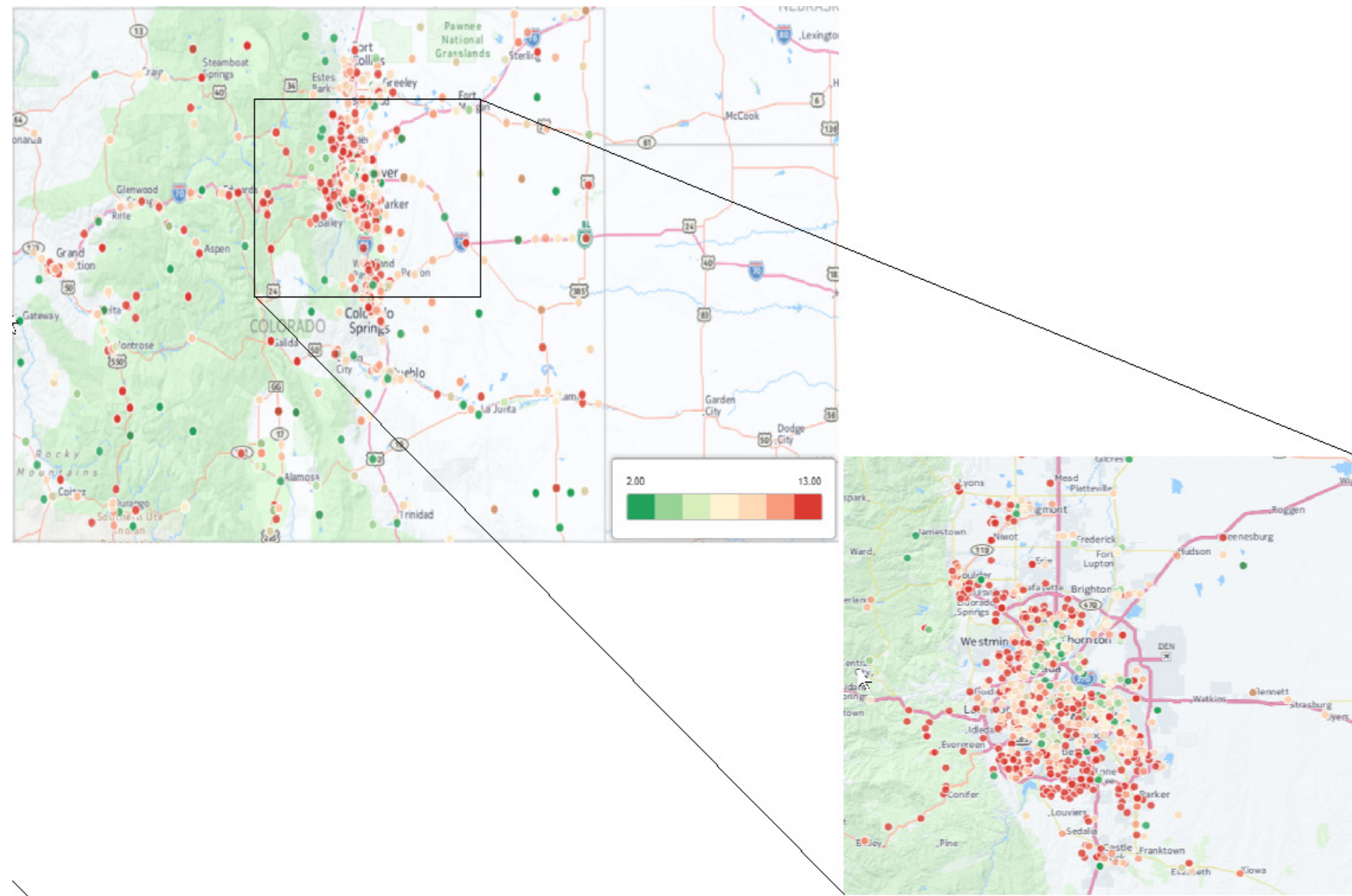


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Visualize the State of Public Education in Colorado

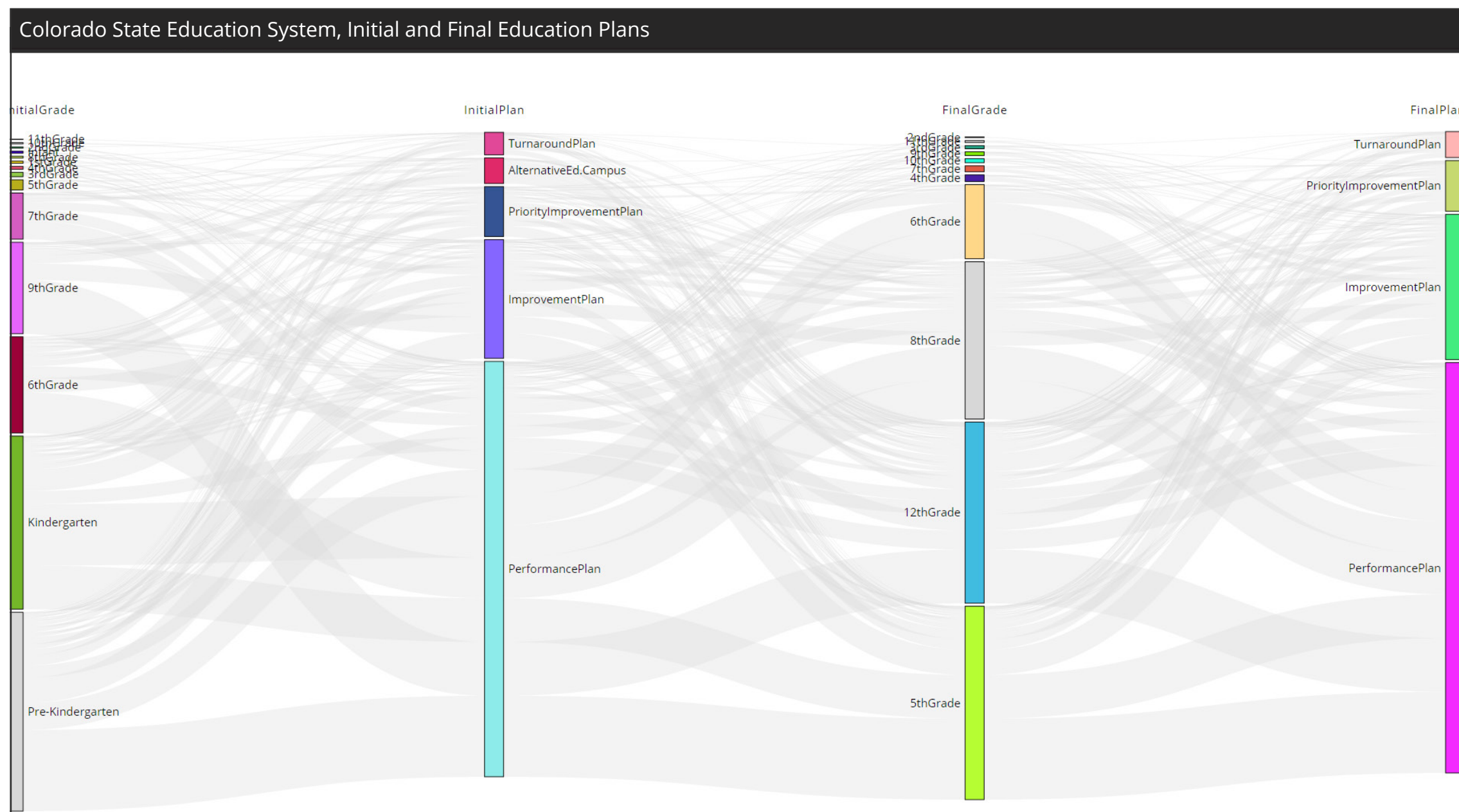
Choropleth Map

The Choropleth map is a Geo map representing the distribution of A-F grade schools across various districts in Colorado. The hotspots are color codes based on the individual school rating provided by the Colorado state education system. It is interesting to note that there are hotspots for both 'A' and 'F' graded schools in Denver area. One of the primary reasons is because of high concentration of schools in the area overall.



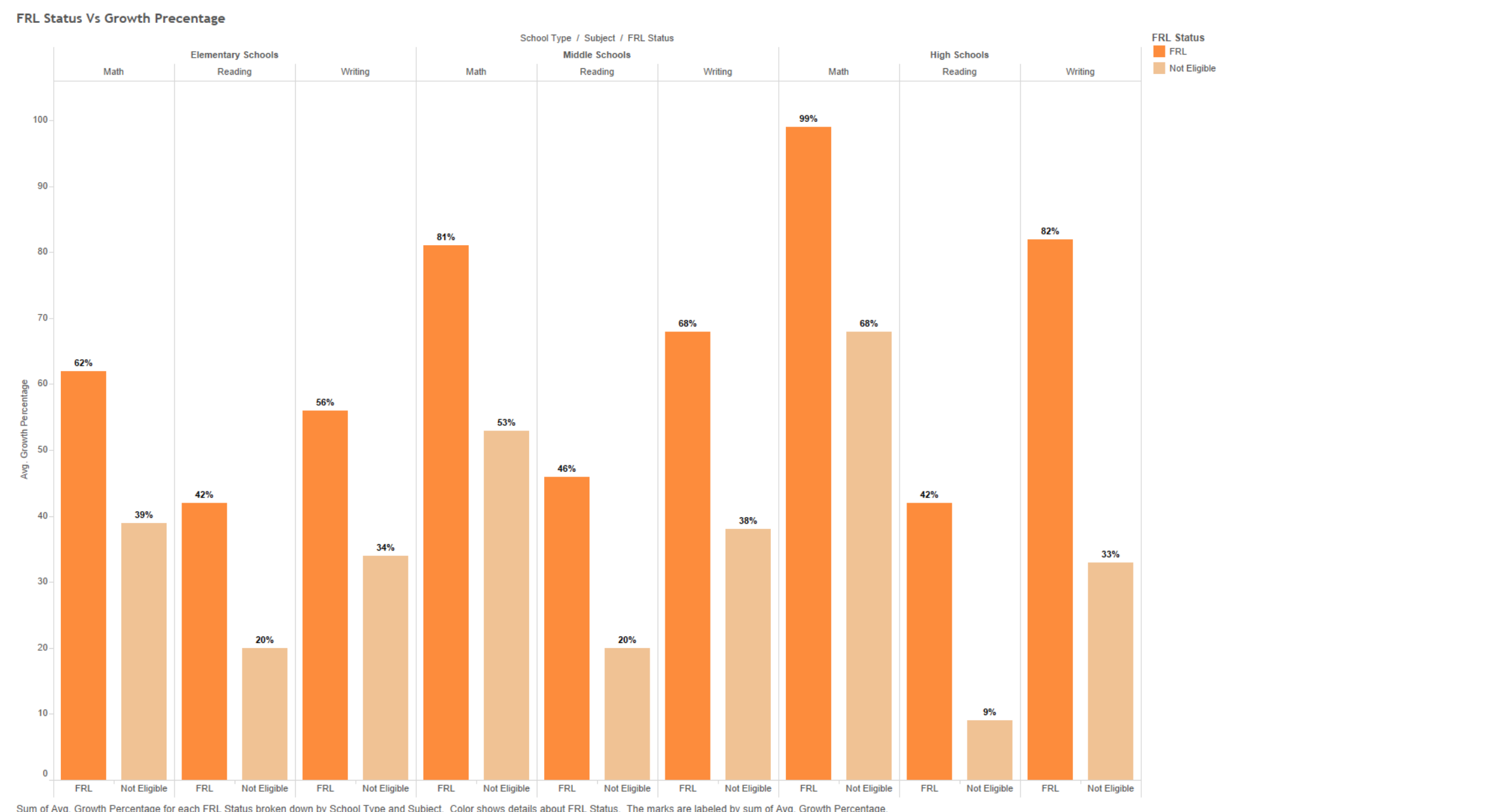
Sankey Diagram

The Sankey diagram primarily shows the flow over various categorical attributes. The visualization in this scenario shows the student education plans flow. The visualization shows the student's initial grade at the school and the initial education plan type and the flow to the final grade at the school and the final education plan type. Each edge connecting the nodes represents an individual student flow. This visualization is handy when we need to analyze the concentration of students across various streams.



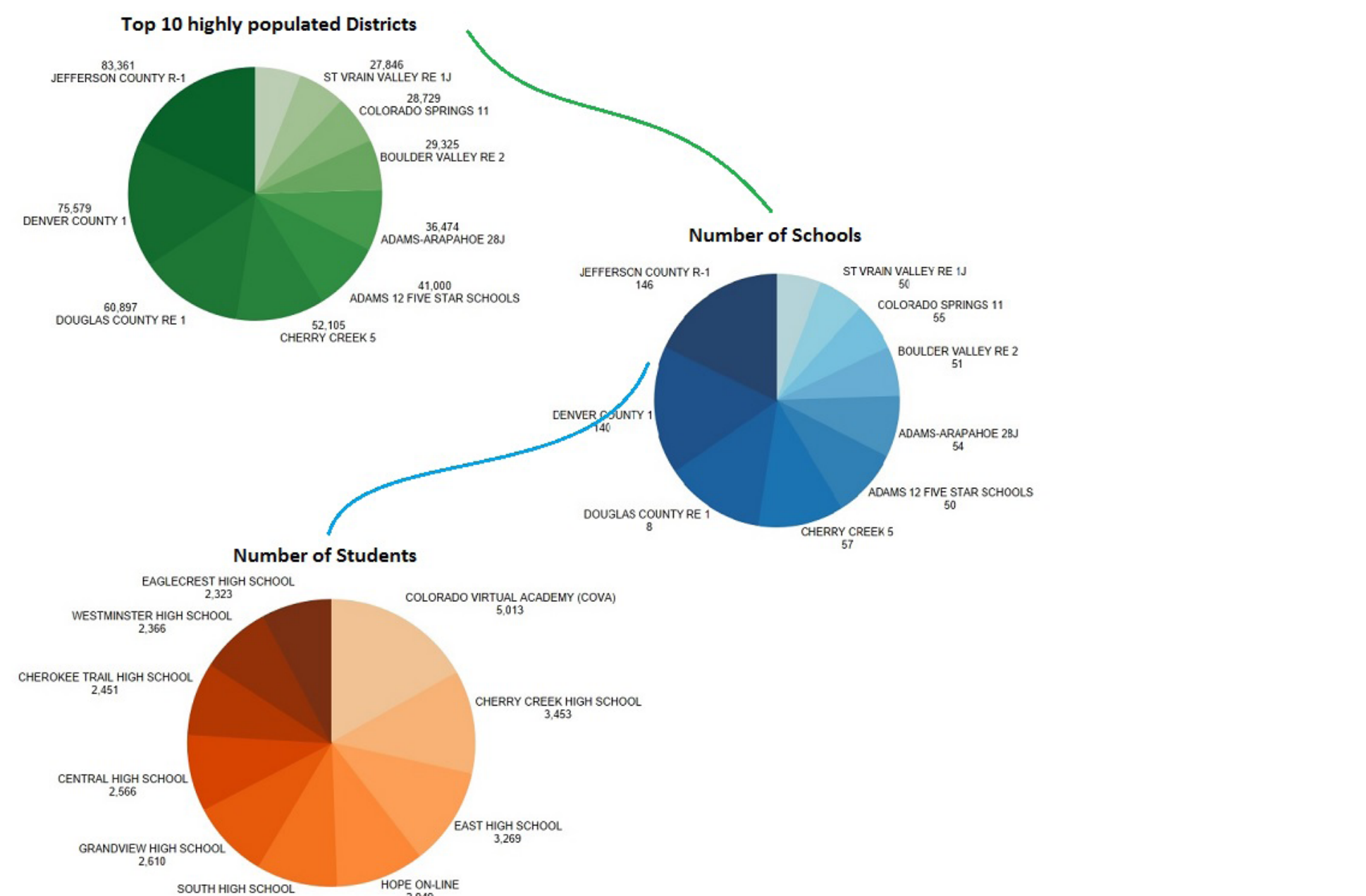
Growth Rate on FRL Students

The data for FRL eligible and non-eligible students is aggregated and the growth percentages are calculated for the academic year 2011-2012. The results show a positive growth towards the FRL.



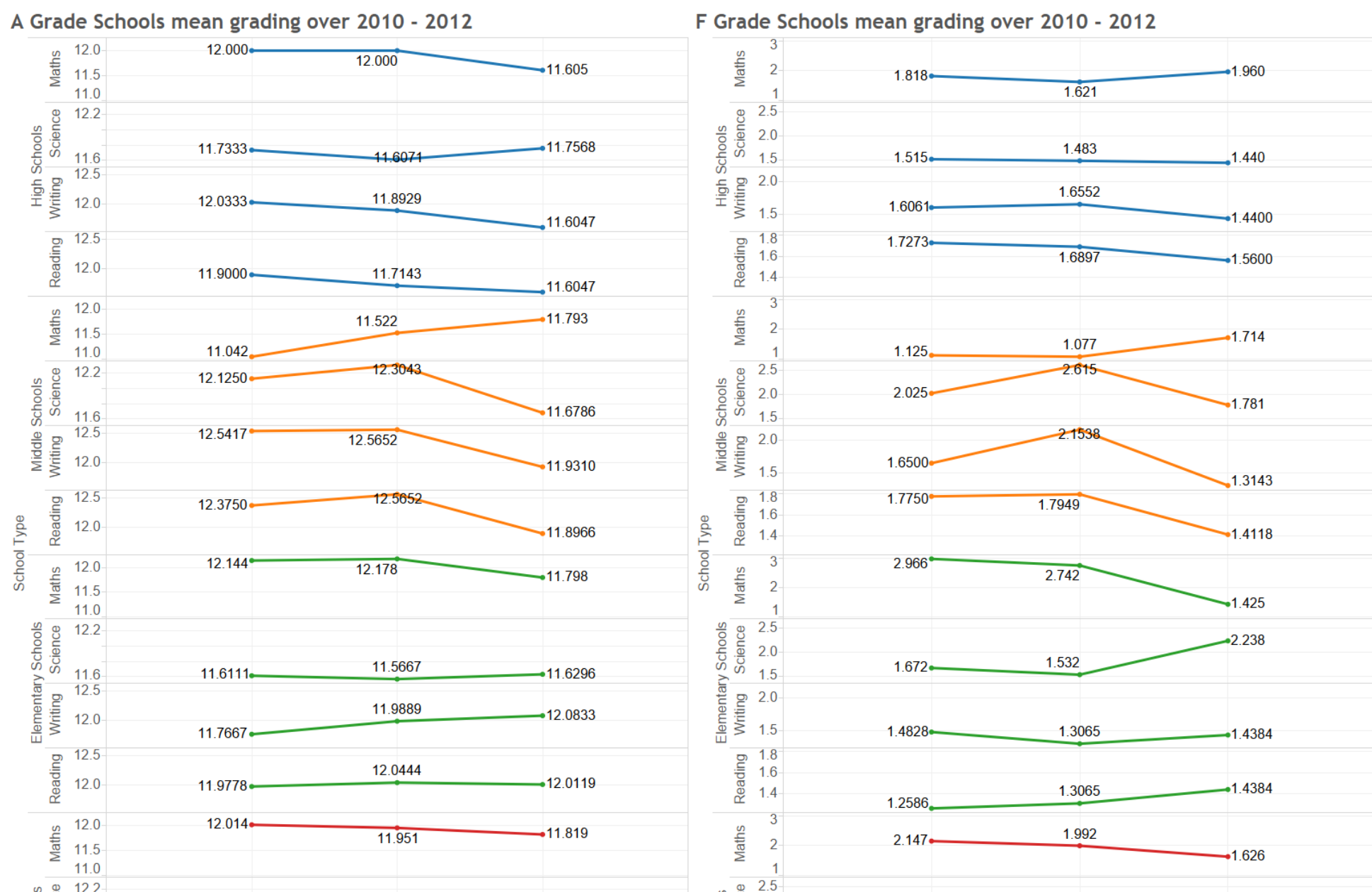
Relational Pie Chart

The pie charts show the ratio of schools and the number of students in top ten highly populated districts in Colorado. The first pie chart displays the top 10 highly populated districts followed by the total number of schools in those districts. The third pie chart shows the most highly populated school among all the schools in the corresponding districts.



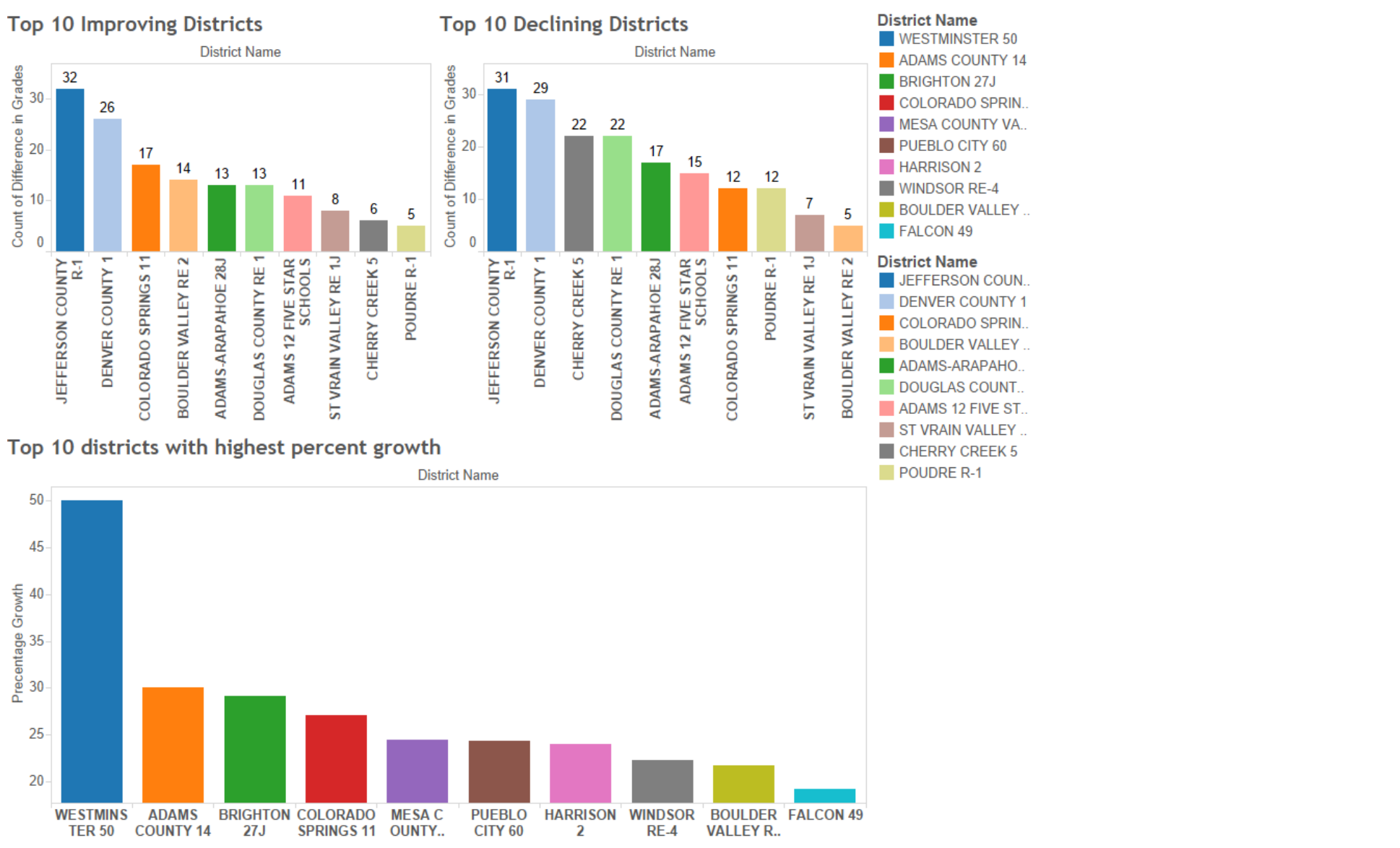
Parallel Coordinates – College Readiness

This parallel coordinate visualization depicts the growth and decline of the overall performance of schools in the state in terms of college readiness quotient and the corresponding school ratings released by the state education department. The primary goal of this visualization is to uncover the decline in trends and take effective measures to improve the performance and prevent and further decline in near future.



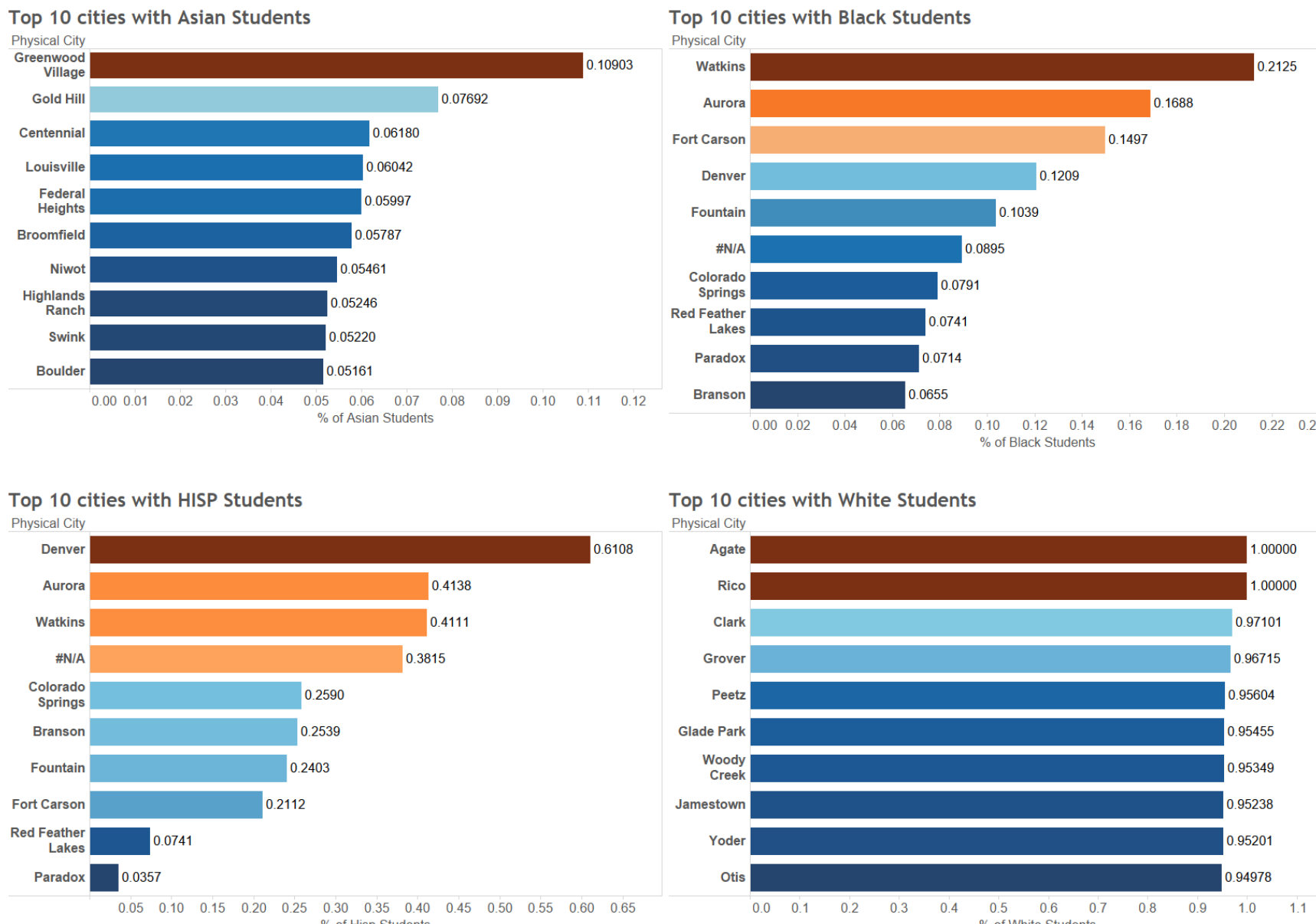
Top 10 Districts in Growth

This is a Bar Chart visualization shows the top ten improving and declining districts in Colorado during 2010-2012. The growth and the decline of an individual school is based on the weighted grading policy followed by the Colorado state education system. The third Bar chart represents the top districts in terms of the percentile growth.



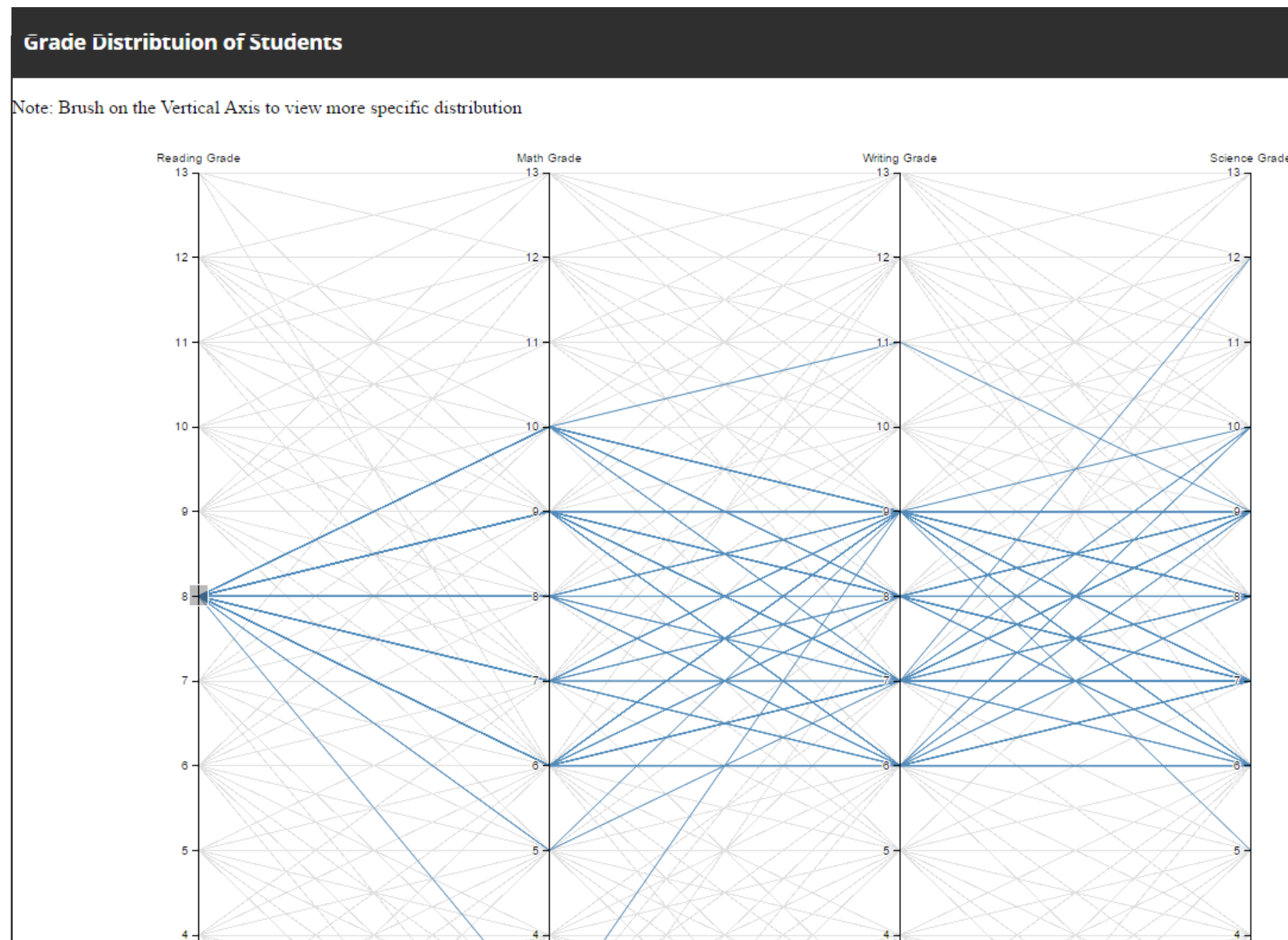
Top Cities With Varied Demographic Percentages

The bar chart shows the top ten districts with percentage of the Asian, Black, Hispanic and White student population. From the bar graphs we notice that the white population is fairly distributed across the cities in Colorado which is a usual trend as the percentage of overall white population in the state is higher. Parents looking to migrate to cities with high percentages of student population from the same race, this visualization gives them a high level understanding off the race distribution. Having said this, from all other data analysis we identified that Colorado is a highly diverse state and once can find people belonging to various races across the state.



Parallel Axis Visualization

This visualization is similar to the Sankey diagram in terms of depicting the flow but has some unique properties. This visualization shows the distribution of student grades in each of the subjects. Every path connecting the Axis shows the scaled mapping of attribute values. The visualization has the ability to brush through each of the axis giving an ability to filter on the attribute values.



Top 15 Schools in Each Category

Top 15 Elementary Schools	Top 15 Middle schools	Top 15 High Schools
AURORA QUEST K-8	STARGATE CHARTER SCHOOL	THE VANGUARD SCHOOL (HIGH)
POLARIS AT EBERT ELEMENTARY	THE CLASSICAL ACADEMY	PEETZ JUNIOR-SENIOR HIGH
STECK ELEMENTARY SCHOOL	AURORA FRONTIER K-8	LIBERTY COMMON CHARTER
COYOTE RIDGE ELEMENTARY	HULSTROM OPTIONS K-8	DSST: STAPLETON
HULSTROM OPTIONS K-8 SCHOOL	AURORA ACADEMY CHARTER	RIDGWAY HIGH SCHOOL
BEAR CREEK ELEMENTARY SCHOOL	AURORA QUEST K-8	THE CLASSICAL ACADEMY HIGH
COTTONWOOD CREEK ELEMENTARY	WESTLAKE MIDDLE SCHOOL	RALSTON VALLEY SENIOR HIGH
BRADFORD INTERMEDIATE SCHOOL	CLYDE MILLER K-8	KIOWA HIGH SCHOOL
ELK CREEK ELEMENTARY SCHOOL	DISCOVERY CANYON CAMPUS	LYONS MIDDLE/SENIOR HIGH
TRAUT CORE ELEMENTARY SCHOOL	STEM SCHOOL	THOMAS MACLAREN STATE
ZACH ELEMENTARY SCHOOL	VANGUARD CLASSICAL	CRESTED BUTTE COMMUNITY
CHINOOK TRAIL ELEMENTARY	AKRON ELEMENTARY SCHOOL	D'EVELYN JUNIOR/SENIOR HIGH
BOULDER COMMUNITY SCHOOL/IN-	EAGLEVIEW MIDDLE SCHOOL	RIDGEVIEW CLASSICAL CHARTER
HORIZONS K-8 SCHOOL	CHALLENGER MIDDLE	PEAK TO PEAK CHARTER
SUPERIOR ELEMENTARY SCHOOL	MOUNTAIN RIDGE MIDDLE	BUENA VISTA HIGH SCHOOL