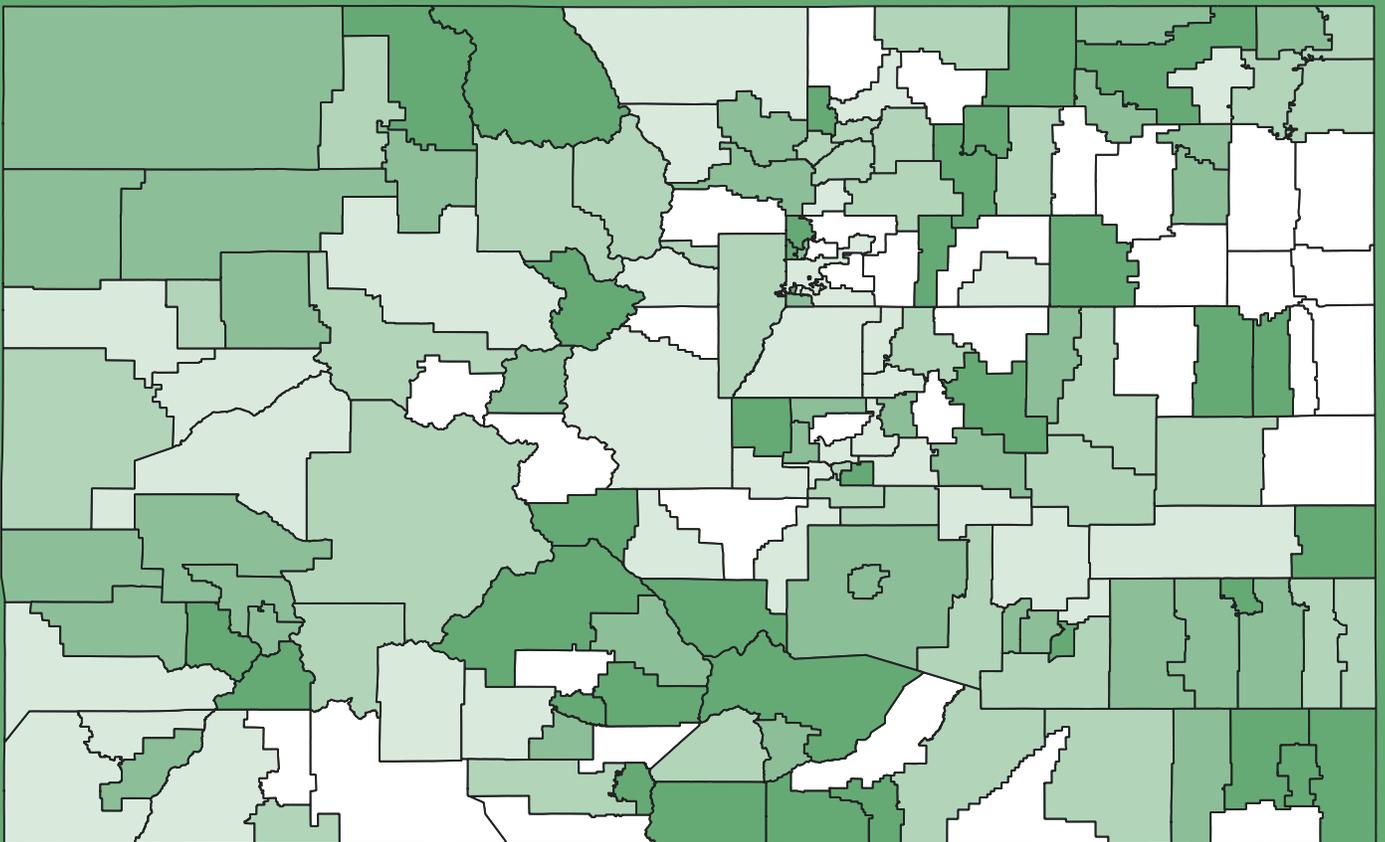


# THE OUTLIERS

## THE STATE OF COLORADO SCHOOL DISTRICTS 2018



# ACKNOWLEDGMENTS

Thank you to the following districts who reviewed data included in this report: Cheyenne Mountain School District 12, Harrison School District 2, Lake County School District.

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Most importantly we would like to thank the educators across our state who work daily to instill in our students a sense of curiosity and a love of learning.

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# INTRODUCTION

At A+ Colorado, we are constantly focused on one question: How can Colorado create the best education system for all of our students?

The second annual issue of A+ Colorado's *The Outliers* returns us to this question. We envision a state in which every student has access to a high-quality education: an education that provides students with the skills, knowledge, and opportunities needed for success.

To this end, A+ Colorado offers this report to uncover the school systems that are "outliers," the districts and schools that buck the trend and are getting the best results for students, so that educators, families and policymakers can learn from our state's best and transfer learnings such that more students receive an excellent education.

Comparing schools and districts is always difficult. Each district and school serves a unique group of students, requiring personalized attention and strategies from educators, communities, and school boards. Yet it is worth doing because of the knowledge that can be gleaned. As Mae Jemison said in a 2001 interview, "the biggest challenge we all face is to learn about ourselves and to understand our strengths and weaknesses. We need to utilize our strengths, but not so much that we don't work on our weaknesses."<sup>1</sup> One of our hopes is that busy educators, communities, and policymakers will use this report to reach out to peers and begin conversations about successes and challenges to share and build on best practices.

Our focus remains on school districts. In Colorado, a state that embraces local control, school districts hold a particularly important position in providing a high quality education. State policy can enable change, but interpretation, implementation, and innovation is the responsibility of school districts. From human capital decisions to resource allocation to local accountability, districts play a critical role in supporting educators and students.

In compiling this report, we gathered publicly available information on all school districts across the state and looked at trends over the past five years. Unless

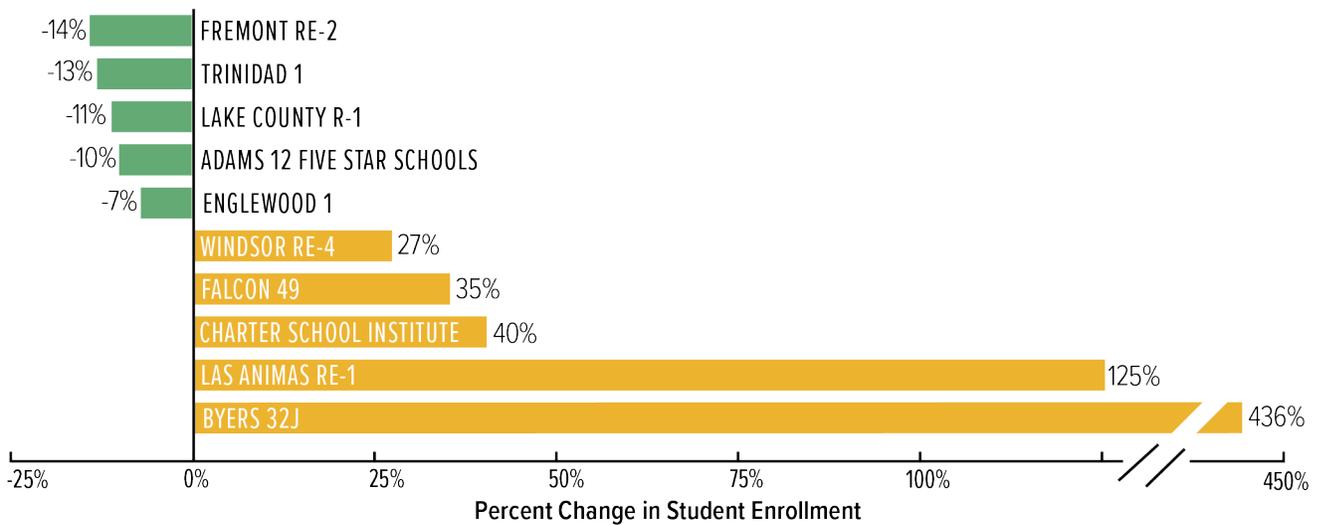
otherwise noted, data was gathered from the Colorado Department of Education. Because we recognize that small and large school systems have their own unique opportunities and challenges, we separate our analysis based on district size. Our analysis targets districts that serve 1000 or more students across pre-kindergarten to twelfth grade. This represents 74 of 186 school districts and BOCES, and 95 percent of all Colorado students. This year, we also provide spotlights on smaller systems.

# STUDENT DEMOGRAPHICS

A baseline understanding of the students being served in Colorado schools and districts provides context to understanding news, trends, and policy. Demographic shifts impact school funding, needed services and their associated costs, and school and district culture.

In the 2016-2017 school-year Colorado schools served over 905,000 students. The number of students in the state has increased nearly 5% over five years, yet annual growth from 2015-16 to 2016-17 was at its lowest point in over two decades at 0.7%. While most Colorado

**Figure 1.** Districts with the Largest Changes in Student Enrollment



Note: Districts were included if they served 1,000 or more students in SY 2016-17, even if they served fewer than 1,000 students in 2012-13. Colorado Digital BOCES has also seen a large increase in enrollment, but didn't start serving students until SY 2013-14.

**Figure 2.** Districts with the Greatest Number of Online Students

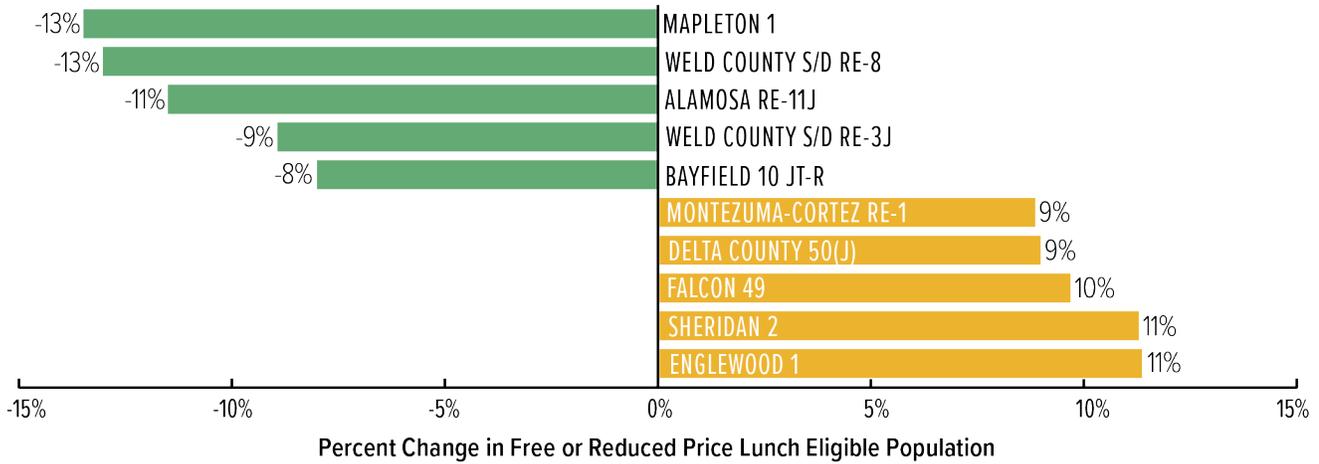
DISTRICT NAME	NUMBER OF ONLINE STUDENTS	% OF DISTRICT STUDENTS IN ONLINE SCHOOLS
FALCON 49	4,322	21%
DOUGLAS COUNTY RE 1	2,530	4%
BYERS 32J	2,488	82%
MAPLETON 1	2,426	27%
COLORADO DIGITAL BOCES	2,136	100%
ACADEMY 20	704	3%
LAS ANIMAS RE-1	651	55%
BRANSON REORGANIZED 82	404	86%
JULESBURG RE-1	347	55%
JEFFERSON COUNTY R-1	324	0.4%

students attend school in the Denver Metro Area, growth over the past five years has been the greatest in urban-suburban communities outside of Denver and in remote communities. Yet enrollment has fluctuated much more radically in some districts across the state (see Figure 1).

## The Explosion of Online Education

Some dramatic increases in district enrollment is due to the rise of online education, one of the fastest growing segments within the Colorado education ecosystem. Many of these schools are multidistrict online schools, meaning they do not draw exclusively from the district's boundary area. For districts like Byers, Las Animas, and Falcon, the dramatic increases in enrollment does not

**Figure 3.** Large Districts with Largest Change in Free or Reduced Price Lunch Eligible Population



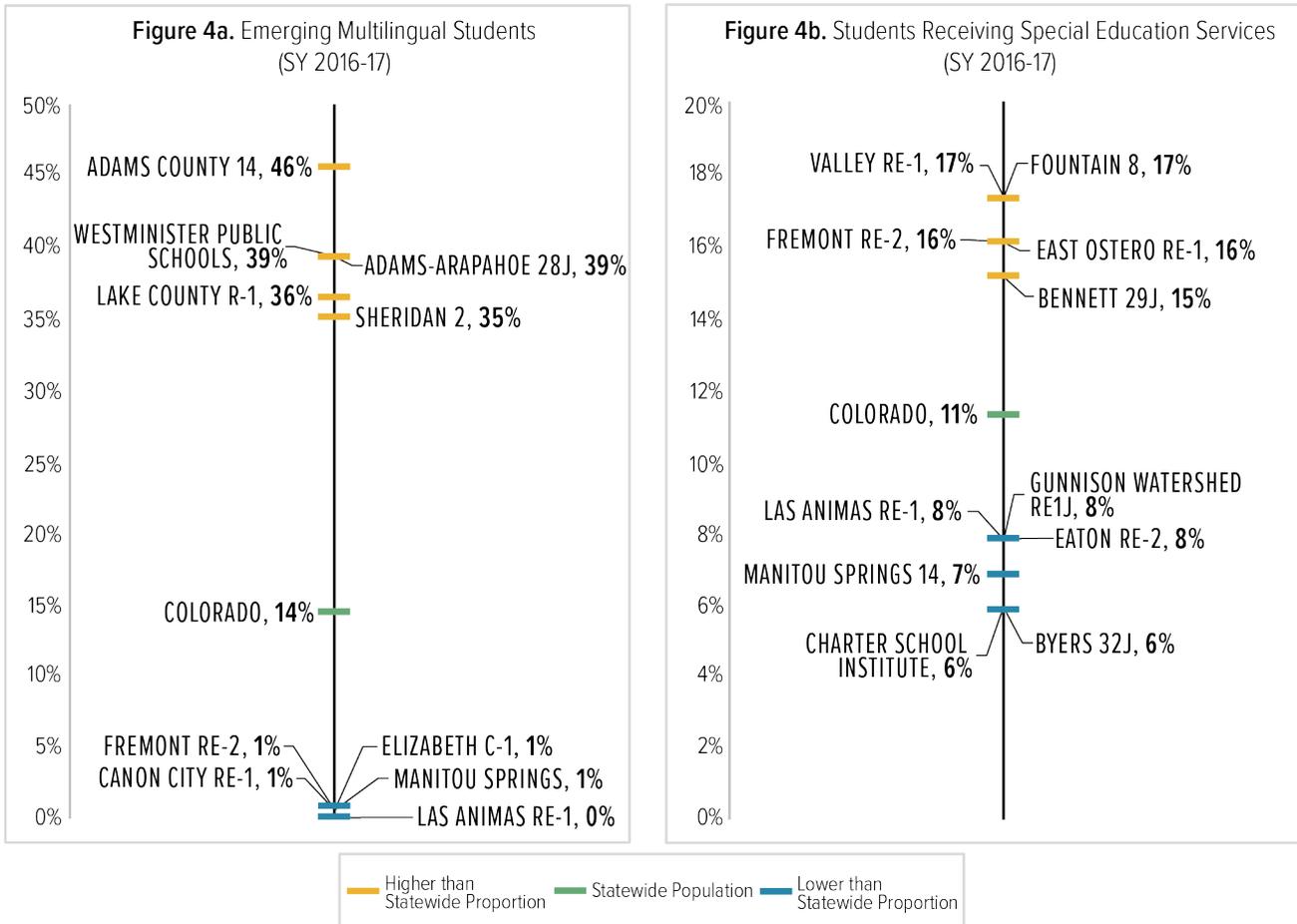
mean that the population of the area has increased, but rather that students from other districts are enrolling in their online programs.

Because districts are accountable for all students enrolled in their district, whether online or in brick-and-mortar schools, this report does not separate online students from others in our review of student outcomes.

## Serving All Students

Across the state 42% of Colorado students qualified for free or reduced-price lunch, a proxy for whether students' families are experiencing poverty, during the 2016-17 school year. Yet that varies across districts and communities. Of all large districts Sheridan serves the highest proportion of students qualifying for free or

**Figure 4.** Large Districts with Highest and Lowest Proportions of Students Receiving Specific Services



**Figure 5.** Large Districts by Proportion of Students by Race or Ethnicity

Figure 5a. Large Districts with Largest Proportion of Latinx Students	
DISTRICT NAME	PERCENT
ADAMS COUNTY 14	83%
SHERIDAN 2	78%
WESTMINISTER PUB. SCHOOLS	77%
TRINIDAD 1	73%
WELD COUNTY S/D RE-8	73%

Figure 5b. Large Districts with Largest Proportion of Black Students	
DISTRICT NAME	PERCENT
ADAMS-ARAPAHOE 28J	18%
HARRISON 2	15%
DENVER COUNTY 1	13%
FOUNTAIN 8	12%
CHERRY CREEK 5	11%

Figure 5c. Large Districts with Largest Proportion of White Students	
DISTRICT NAME	PERCENT
ELIZABETH C-1	86%
ASPEN 1	85%
MANITOU SPRINGS 14	84%
WOODLAND PARK RE-2	84%
STEAMBOAT SPRINGS RE-2	82%
LEWIS-PALMER 38	82%

Figure 5d. Large Districts with Largest Proportion of Multiracial Students	
DISTRICT NAME	PERCENT
WIDEFIELD 3	10%
FOUNTAIN 8	10%
COLORADO SPRINGS 11	8%
FALCON 49	7%
COLORADO DIGITAL BOCES	7%
HARRISON 2	7%
CHERRY CREEK 5	7%

reduced price lunch in the state at 91%. Compare that to districts like Aspen, where fewer than 5% of students qualified for free or reduced-price lunch.

Changes in the proportion of students receiving free or reduced price lunch over the past five years have not been evenly distributed. Some districts have seen dramatic changes as illustrated in Figure 3.

Students with specific learning needs that Colorado prioritizes and explicitly supports include emerging multilingual students, and students needing special education services. The proportion of students in special education is fairly consistent across districts—around 11%, with some notable outliers who serve closer to 20%. The range is much greater when looking at populations of emerging multilingual populations from a high of 46% in Adams 14, to a low of less than 1% in Las Animas.

## Student Diversity By Race and Ethnicity

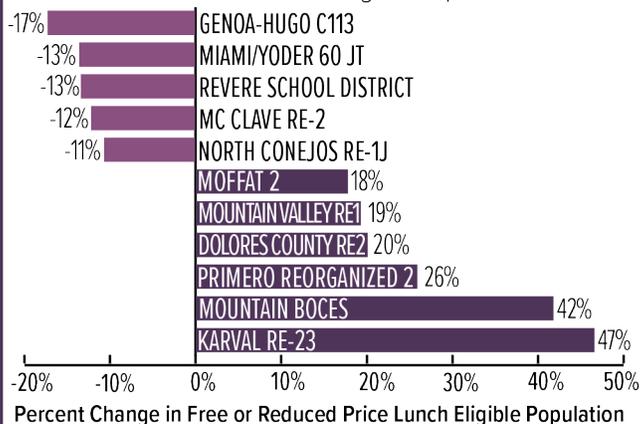
White students continued as the slight majority of the Colorado student population, but the proportion of students who identify as Latinx and multiracial continued to grow over the past five years. The racial and ethnic diversity of Colorado’s student population varied dramatically in districts across the state. The analysis in this report focuses on the four largest racial and ethnic

groups in Colorado—white, Latinx, black, and multiracial students. Asian, Native American, Native Hawaiian or Pacific Islander students make up 3%, 0.7%, and 0.2% of Colorado students respectively.

## Small District Snapshot

Colorado’s small districts are just as diverse in terms of the students they serve as large districts across the state.

**Figure 6.** Small Districts with Largest Change in Free or Reduced Price Lunch Eligible Population



# STUDENT ACHIEVEMENT IN ELEMENTARY AND MIDDLE SCHOOL

For the past 25 years, Colorado has worked to define what a highly qualified graduate would look like after their time in the public education system. These are now defined by the Colorado Academic Standards, which provide clear goals for student learning at each grade level such that students will be ready for college and career by the time they graduate. Student performance on these standards is then measured by a number of assessments, the most critical of which is the Colorado Measure of Academic Success (CMAS).

Understanding whether students are meeting these grade level expectations is critical. Measuring student achievement comes with limitation, because it does not measure where students start. Some students come into the classroom with academic skills and knowledge well beyond their peers. Some students arrive with the opposite. Mastering of grade-level content historically and currently tracks along racial and socioeconomic lines. However, there are school systems that are exceptions to this trend, where more students master academic content.

## Outlier Analysis

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### **Dramatically Improving and High Performing School Districts**

Colorado has several school systems that have greatly increased the proportion of students meeting or exceeding grade level standards and have higher performance than similar districts. In elementary English Language Arts, East Grand, Denver, and Cheyenne Mountain have made big improvements in student achievement across the past three years; students also met or exceeded expectations at a much higher rate than students in similar districts across the state. In elementary Math, Poudre and Eaton are exemplars. In middle school English Language Arts, East Grand, Steamboat, and Littleton warrant praise.

### **Districts on the Rise**

There are districts who have made notable improvement in getting more students to meet or exceed grade-level expectations who started with higher rates of proficiency. There were also districts who had very low rates of students mastering grade-level content that made big improvements. For example, Eaton, East Grand, and Cheyenne Mountain increased already relatively high rates of students meeting or exceeding grade level expectations in 2015. Districts with much lower rates of students meeting expectations that have seen dramatic improvement over the past three years include Lake County in elementary English Language Arts and Math, Moffat 1 and Trinidad in elementary ELA, Woodland Park and Englewood in elementary Math, and Archuleta and Westminster in middle school ELA.

### **Breakthrough Districts**

Despite the well documented correlation between students' backgrounds including family income, home language, disability, and mobility, and academic performance, there is significant variability for student outcomes in districts serving more impacted students. Districts with much higher rates of students meeting or exceeding grade-level expectations, compared to other districts serving equally highly impacted student populations include Las Animas, Fort Morgan, Harrison, Denver, and Ellicott.

### **Excellence Across Grades and Subjects**

Some districts are outliers in multiple grade levels and subjects. More students are meeting grade level expectations in English Language Arts in elementary and middle school and Math in elementary school in Steamboat and Las Animas. Districts where more students are meeting grade level expectations in English Language Arts across elementary and middle school grades include Denver, Cheyenne Mountain, and East Grand. Districts serving elementary students particularly well across English Language Arts and Math include Harrison and Boulder. Students in Salida and Littleton performed well in elementary math and middle school English Language Arts.

## Policy Considerations

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### Data Reporting Practices Limit Our Understanding

Given overly restrictive data suppression, the Colorado Department of Education has made it nearly impossible to have real visibility into the performance of various student groups across the state violating the intent of our standards-based education system.

Since 2015 the Colorado Department of Education (CDE) has implemented complementary suppression rules that mask vast amounts of all achievement data and have a particularly grievous impact on disaggregated data. This irreparably impacts the ability to understand how school systems across the state are serving particular groups of students. This report creates proxies to measure how districts are serving students from different backgrounds and with different learning needs, but it does not replace the invaluable information that Colorado used to provide about whether different groups of students reached state standards that helped schools, districts, and communities identify and address education inequities.

For example, Boulder Valley School District serves nearly 300 students who identify as black, and yet there is no disaggregated information about whether those students are meeting grade-level expectations. In Aspen, where 80 students (5%) qualify for free or reduced price lunch, and in Manitou Springs, where 366 (24%) do, there is little if any publicly available information disaggregated by family income.

A+ Colorado and other organizations believe this is an injustice. Families and educators need to understand how students across the state are performing. A coalition of organizations has mobilized to push CDE towards greater transparency and accountability. At this time, CDE has made some initial promises to improve reporting practices, but we will continue to push them until transparency is restored.

## Small District Snapshot

### There is great variability amongst small districts

Small districts are both more likely to perform significantly better and worse than districts serving similar students. Some of this variability might be due to the fact that a smaller number of students has a larger impact on the overall district performance in small districts than in large districts. That said, it is equally valuable and fruitful to look for best practices in small districts to be shared with smaller and larger communities alike.

Small school districts that are outliers in terms of performance and warrant investigation into their practices include Gilpin, an outlier in both elementary subjects. Telluride, Limon, and Center were outliers in both elementary and middle school English Language Arts. Hanover, Center, and Granada serve more highly impacted student populations and were outliers in elementary English Language Arts.

# Elementary and Middle School Achievement Data

**Figure 7a.** Top 10 Improved Large School Districts -% of Students Who Met or Exceeded Grade Level Expectations, 2015 to 2017 - Elementary English Language Arts

RANK	DISTRICT	Δ 2015-2017	% OF STUDENTS WHO MET GRADE LEVEL - 2017
1	WIDEFIELD 3	14%	48%
2	MOFFAT COUNTY RE:1	12%	33%
2	WOODLAND PARK RE-2	12%	51%
4	ALAMOSA RE-11J	9%	40%
4	LAKE COUNTY R-1	9%	20%
4	EATON RE-2	9%	57%
4	EAST GRAND 2	8%	59%
9	DENVER COUNTY 1	8%	40%
9	TRINIDAD 1	7%	29%
9	DELTA COUNTY 50(J)	7%	47%
9	CHEYENNE MOUNTAIN 12	7%	63%
9	ADAMS 12 FIVE STAR	7%	43%
9	PLATTE VALLEY RE-7	7%	50%
9	LAS ANIMAS RE-1	7%	48%

**Figure 7b.** Top 10 Improved Large School Districts -% of Students Who Met or Exceeded Grade Level Expectations, 2015 to 2017 - Elementary Math

RANK	DISTRICT	Δ 2015-2017	% OF STUDENTS WHO MET GRADE LEVEL - 2017
1	EATON RE-2	18%	58%
2	SALIDA R-32	12%	50%
3	WOODLAND PARK RE-2	11%	35%
4	LITTLETON 6	10%	54%
4	LAKE COUNTY R-1	10%	17%
6	ASPEN 1	9%	39%
6	ROARING FORK RE-1	9%	31%
6	SCHOOL DISTRICT 27J	9%	36%
9	POUDRE R-1	8%	53%
10	CANON CITY RE-1	7%	30%
10	WELD COUNTY S/D RE-3J	7%	37%
10	ENGLEWOOD 1	7%	22%

**Figure 8.** Top 10 Improved Large School Districts -% of Students Who Met or Exceeded Grade Level Expectations, 2015 to 2017 - Middle School English Language Arts

RANK	DISTRICT	Δ 2015-2017	% OF STUDENTS WHO MET GRADE LEVEL - 2017
1	VALLEY RE-1	23%	47%
2	EAST GRAND 2	18%	68%
3	STEAMBOAT SPRINGS RE-2	14%	72%
4	FREMONT RE-2	10%	37%
4	ELLCOTT 22	10%	39%
6	PLATTE VALLEY RE-7	9%	51%
7	ARCHULETA COUNTY 50JT	9%	33%
7	CANON CITY RE-1	9%	43%
9	LITTLETON 6	8%	63%
10	WESTMINSTER P.S.	8%	25%

### How to Read Outliers Scatter Plots

(Figures 9 and 10 on pages 11-13)

1. The District Demographic Index includes students qualifying for free or reduced price lunch, emerging multilingual students, students receiving special education services, and district mobility rates.
2. Each grey dot represents a Colorado school district a) that serves the included grade levels, and b) where the Colorado Department of Education released data about student achievement in at least two grades within the ed level of interest.
3. Labeled districts perform much better or worse similar districts in terms of the proportion of students reaching grade level expectations relative to districts across the state with similar demographics.
4. Green labels indicate large districts that serve 1,000 or more students; purple labels indicate small districts that serve fewer than 1,000 students.

*See methodology in appendix for more information.*

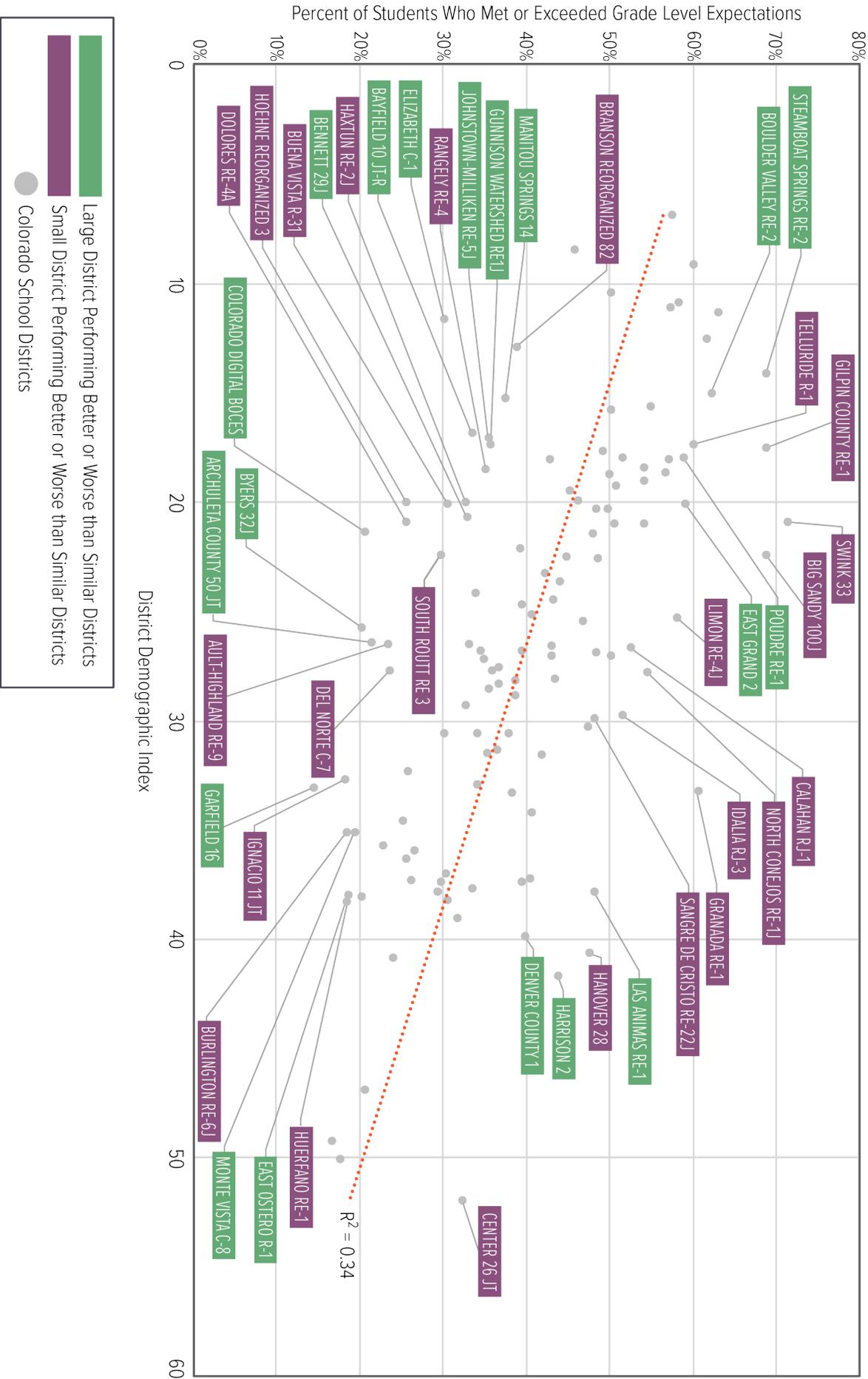
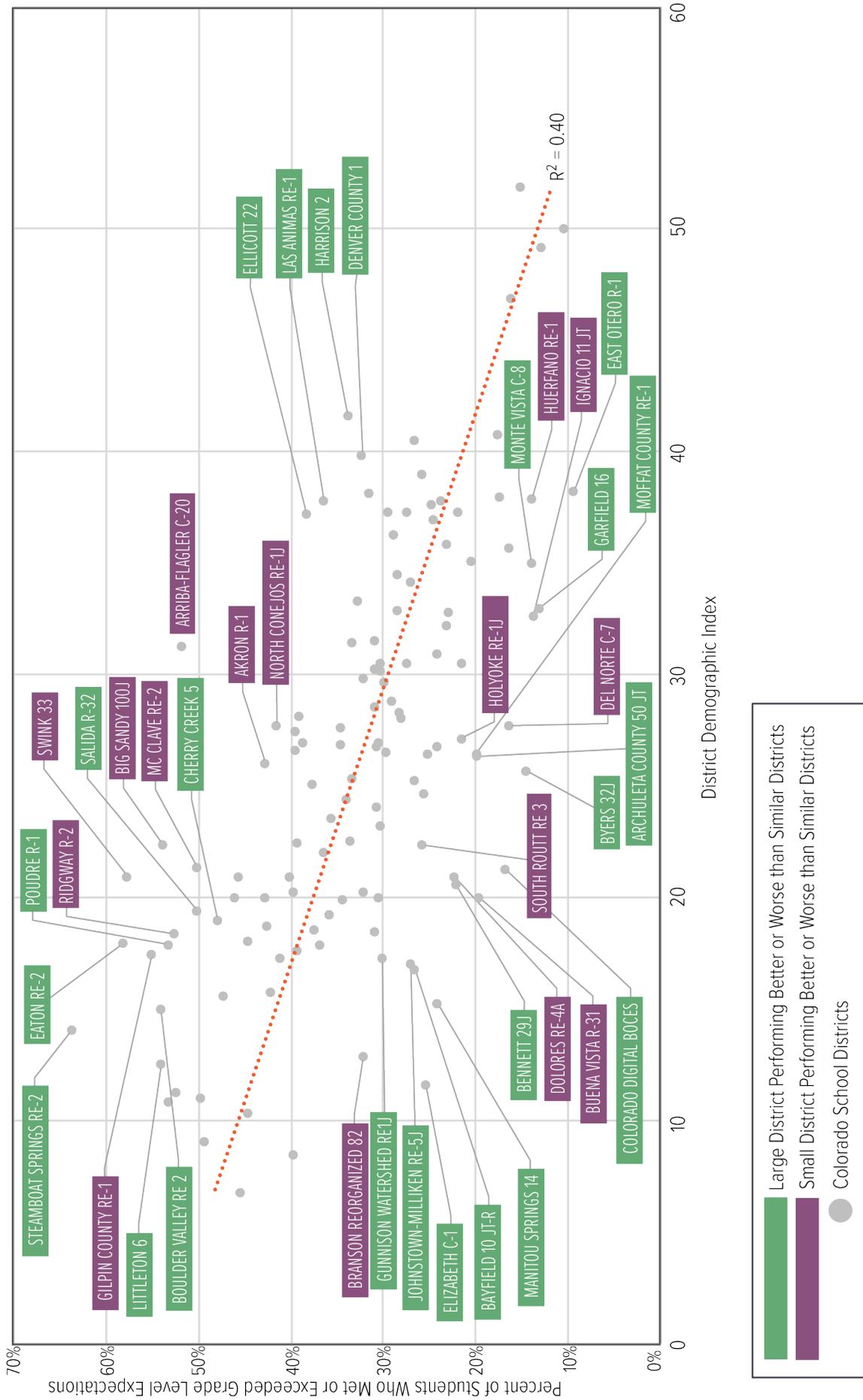


Figure 9a. The Outliers: Elementary English Language Arts 2017

Figure 9b. The Outliers: Elementary Math 2017



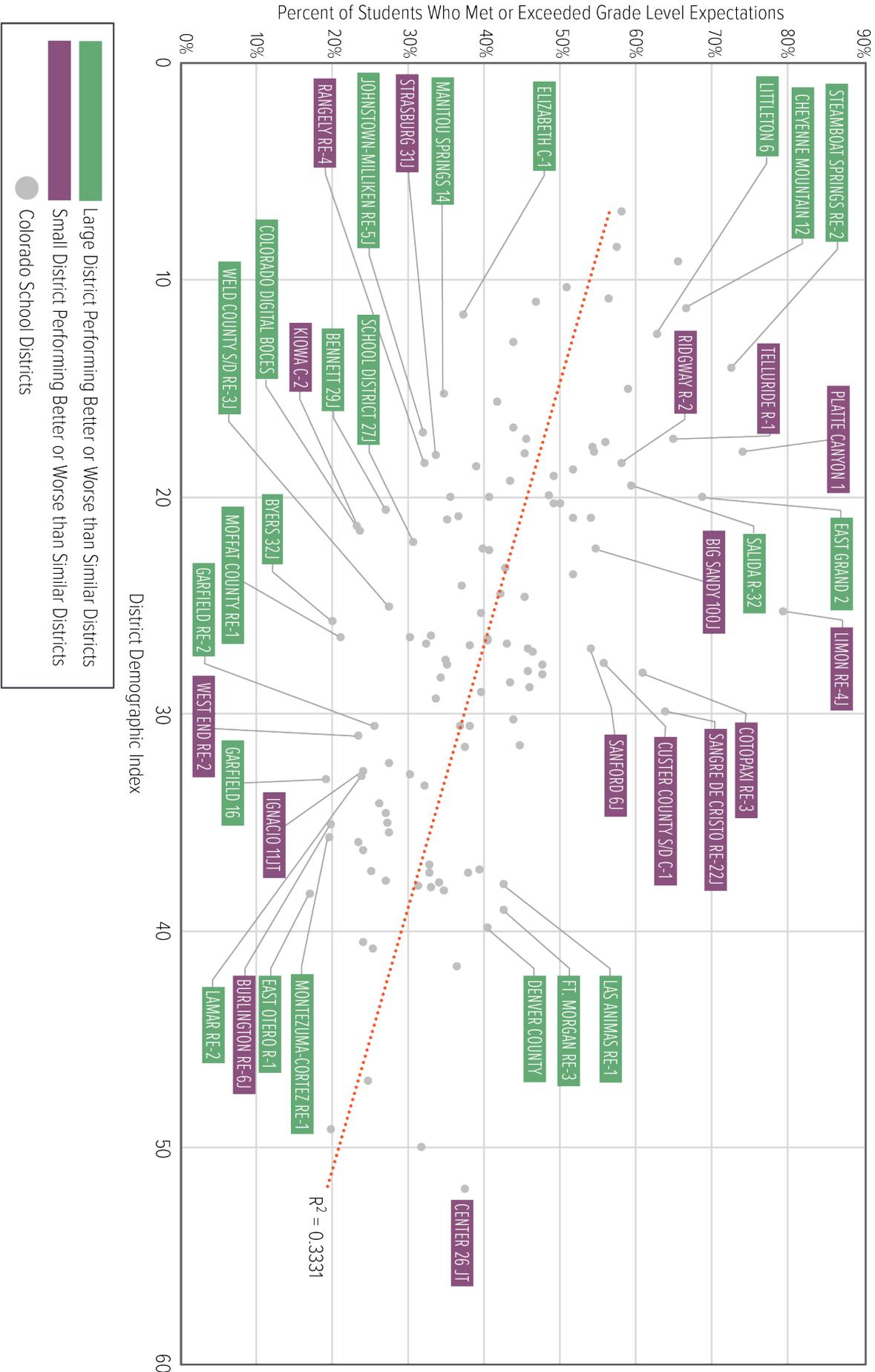


Figure 10. The Outliers: Middle School English Language Arts 2017

# STUDENT ACADEMIC GROWTH

Achievement growth should be a primary measure of quality for schools and districts. Unlike an absolute measure of whether or not students met grade level expectations, growth sheds light on whether students learned more than their peers across a single year, regardless of whether they came in well ahead or well behind the grade level expectations.

This section explores the systems where, on average, students learned the most relative to their academic peers in 2017. It also explores the systems with the largest growth gaps, where certain groups of students from a particular background are learning more than their classmates of another background.

## Outlier Analysis

---

### High Growth Districts

While some districts showed particularly high growth for a certain group of students in certain subjects, there are some systems where all students learned more than their peers across the state. Of note, both students eligible and ineligible for free or reduced price lunch in Steamboat Springs, Salida, and Lake County saw the highest growth in the state in math.

### Students Grow Across Districts

District setting does not seem to impact the growth that students achieve within a year. High growth districts include districts on the eastern plains, the front range, and the high country. Conversely, districts where students experienced the lowest growth are also located across the state.

### Digital Schools Do Not Promote Student Learning for Most Students Relative to Traditional School Districts

Not only did districts that serve large proportions of online students perform significantly lower than districts serving similar populations in brick and mortar schools, but students in online schools seem to learn much less

than their peers in brick-and-mortar schools across the year. Byers, where 82% of students attend online schools, and Colorado Digital BOCES had some of the lowest growth for multiple groups of students across subjects.

## Policy Considerations

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### Measure What Matters

Growth is a critical concept, yet our tools to understand it are limited. This section explores the median growth percentile of students in different districts. Each student who has taken an assessment for two consecutive years receives a growth percentile that compares how they performed on the assessment relative to their academic peers, or students who scored the same as them on the assessment the year prior. The median growth percentile is the average of these student growth percentiles in a particular school system. While this measure tells us how the average student did in comparison to their academic peers across the state last year, it does not tell us if students are making sufficient progress each year to reach the standards that will prepare them for college and career.

Growth to standard is another measure that must be but is rarely considered when evaluating schools or school districts. The CO Department of Education used to calculate whether or not students were getting closer to reaching grade-level expectations, or if they were falling behind. We urge the state to calculate and release this information so that educators and communities alike have more information about whether or not school systems are enabling all students to reach grade level expectations regardless of their background.

### Understanding the Opportunity Gap

Growth, unlike measures of absolute academic achievement, takes into account students' past academic achievement and is arguably a better judge of how much students are learning across the year than

looking at a single year of achievement. For that reason, gaps in annual growth between groups of students is particularly concerning. Growth gaps also show how powerful factors outside of the classroom can be in terms of their impact on student learning in the classroom. For example, if students from low-income families are learning significantly less than their more affluent peers, it can highlight both that factors outside the classroom effect not only where students come into the classroom, but their learning on a day-to-day basis, and that school systems can do much more to better support those students' learning.

## Small District Snapshot

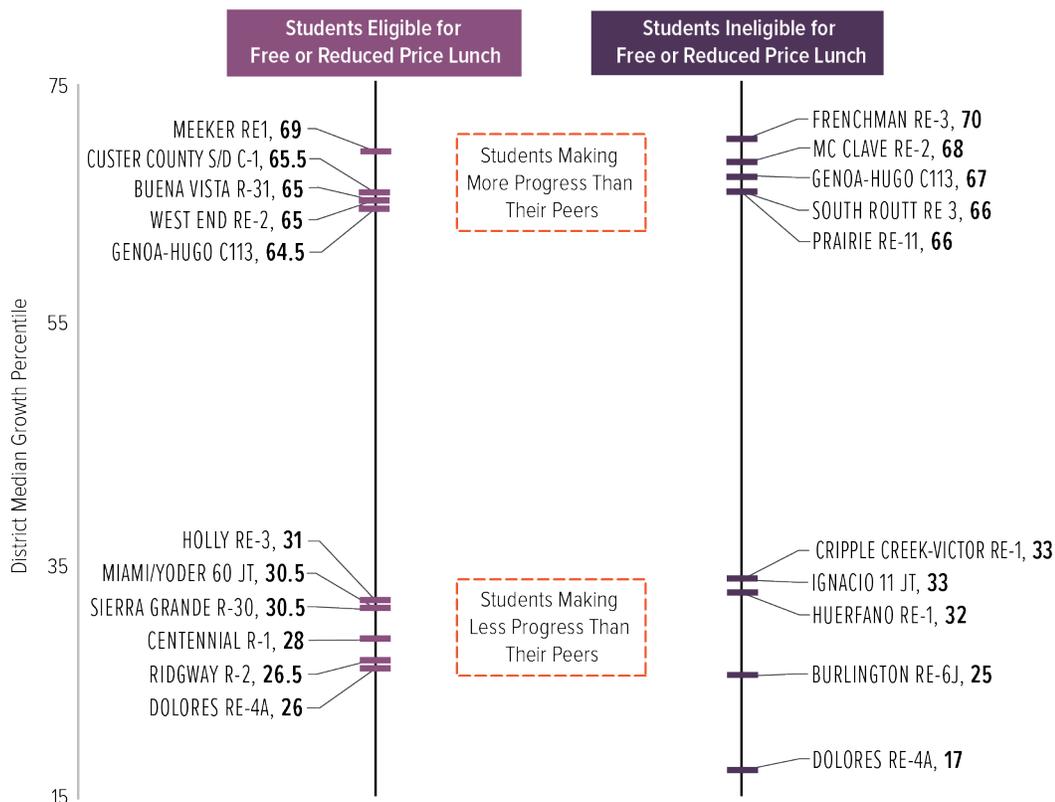
### Growth Varies Enormously in Small Districts

Because small districts by definition serve fewer students, the median of a smaller sample is more variable. For this reason, it is unsurprising that the small districts with the highest and lowest growth is markedly higher and lower respectively than their large district counterparts. But this does not diminish the fact that students in many small districts are learning more across the school year than their peers in other parts of the state. In fact, it highlights that the search for best practices are just as relevant in small communities as in larger school systems.

**Figure 12.** Biggest Growth Gaps in Small Districts: Students Ineligible for Free or Reduced Price Lunch Compared to Students Eligible for Free or Reduced Price Lunch - Math 2017

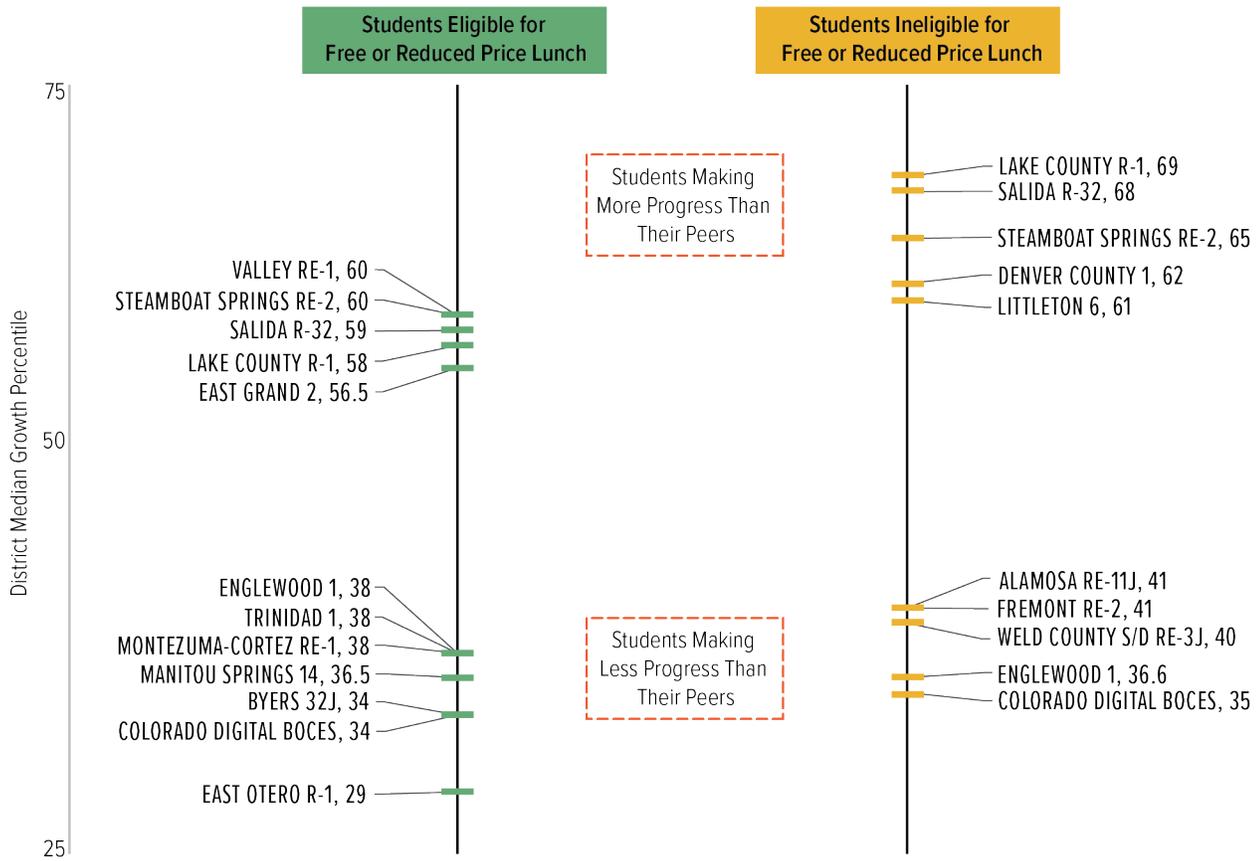
DISTRICT	STUDENTS INELIGIBLE VS. ELIGIBLE FOR FREE OR REDUCED PRICE LUNCH
HOLLY RE-3	28.5 points
FRENCHMAN RE-3	22 points
RIDGEWAY R-2	20.5 points
CENTENNIAL R-1	17.5 points
MC CLAVE RE-2	17 points

**Figure 11.** Small Districts with Highest and Lowest Growth (MGP) in Math by Eligibility for Free or Reduced Price Lunch - 2017



# Academic Growth Data

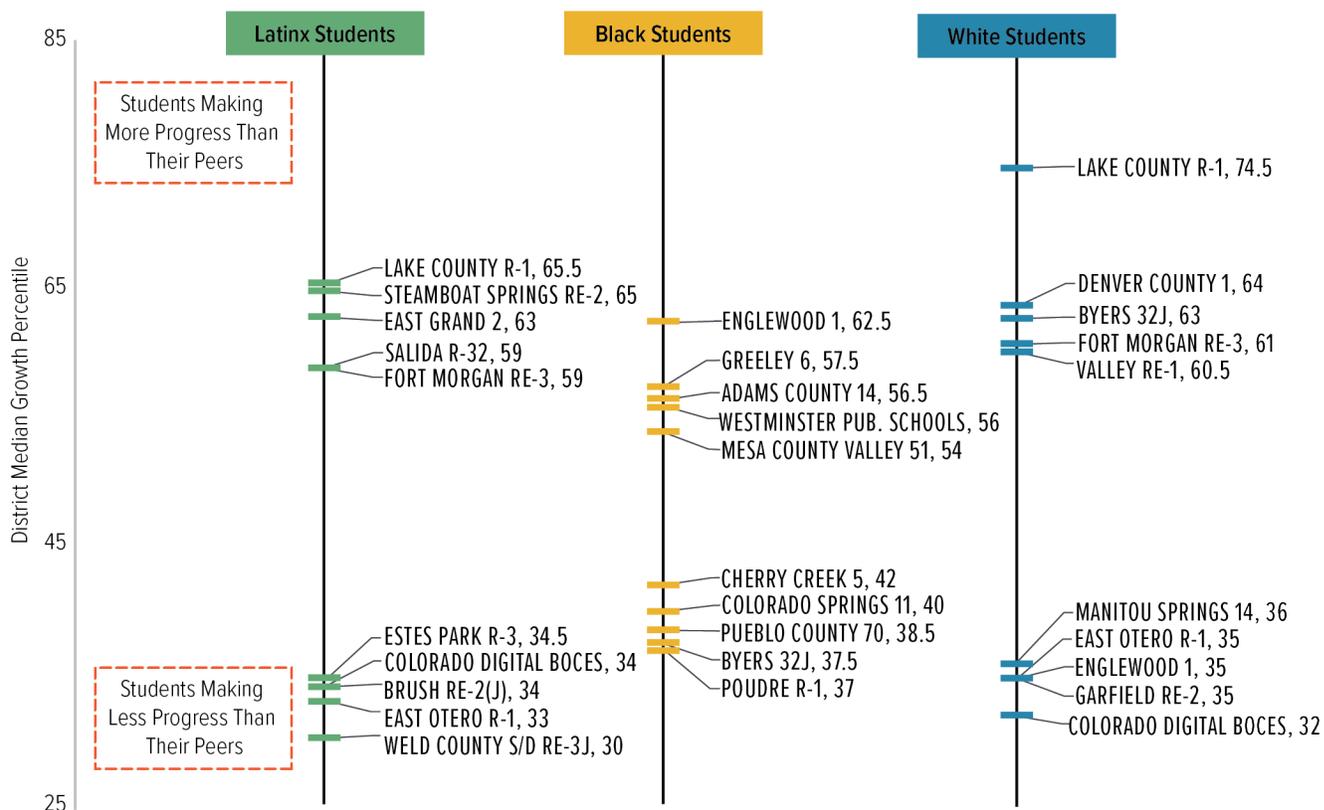
**Figure 13.** Large Districts with Highest and Lowest Growth (MGP) in Math by Eligibility for Free or Reduced Price Lunch - 2017



**Figure 14.** Biggest Growth Gaps in Large Districts: Students Ineligible for Free or Reduced Price Lunch Compared to Students Eligible for Free or Reduced Price Lunch - Math 2017

DISTRICT	STUDENTS INELIGIBLE VS. ELIGIBLE FOR FREE OR REDUCED PRICE LUNCH
EAST OTERO R-1	17 points
MANITOU SPRINGS 14	16.5 points
DENVER COUNTY 1	13 points
GUNNISON WATERSHED RE1J	13 points
MONTEZUMA-CORTEZ RE-1	11.5 points

**Figure 15.** Large Districts with Highest and Lowest Growth (MGP) in English Language Arts by Student Race or Ethnicity - 2017



**Figure 16a.** Biggest Growth Gaps in Large Districts: White Students Compared to Latinx Students

DISTRICT	WHITE VS. LATINX STUDENTS
BYERS 32J	24 points
ESTES PARK R-3	15.5 points
ARCHULETA COUNTY 50 JT	15 points
DURANGO 9-R	12 points
DENVER COUNTY 1	10 points

**Figure 16b.** Biggest Growth Gaps in Large Districts: White Students Compared to Black Students

DISTRICT	WHITE VS. BLACK STUDENTS
BYERS 32J	25.5 points
LITTLETON 6	14 points
POUDRE R-1	13 points
PUEBLO COUNTY 70	12.5 points
DENVER COUNTY 1	11 points

# COLLEGE & CAREER READINESS

High schools should open doors for students for life, career, and college. Earning a high school diploma is a significant milestone for individual students and their lifetime economic prospects. In December 2017, less than 1% of job openings in Colorado had no minimum education requirement; just less than half required a high school degree; and the majority required some educational qualification beyond high school.<sup>2</sup> Research has also shown that the economic penalty for not finishing high school is nearly \$9,000/year.<sup>3</sup>

This section identifies districts that are best supporting students to graduate from high school in four years, which continues to be the predominant expectation of communities and educators alike, and how most schools are organized.<sup>4</sup>

Graduating is still connected more to seat time than to measures of student achievement. Therefore, improved graduation rates do not necessarily signal that graduates are actually prepared for postsecondary opportunities. For that reason, information about graduation should be connected to student achievement and how well students are prepared to access opportunities after high school.

This section explores whether students are able to meet the graduation requirement as measured by the SAT. In contrast to the rest of the report, this section explores results at the high school level rather than district level to determine where students were best prepared for college and career, as measured by the SAT. We look at schools here because particularly at the high school level, there is significant variability between high school student achievement within large districts. We explore this variability.

## Outlier Analysis

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### **Urgent Action Needed for Students Experiencing Homelessness**

The lowest graduation rate for any group of students was for students experiencing homelessness. There are important lessons to be learned in how school systems are supporting these students, particularly in districts that have seen a dramatic increase in the number of students experiencing homelessness.<sup>5</sup> In Fountain 8 in the Colorado Springs metro area, 81% of students who experienced homelessness graduated on-time. Districts that have made the most improvement in their graduation rates over the past five years for students experiencing homelessness are Sheridan 2 and Mapleton 1.

While Colorado has been a leader in reporting on students experiencing homelessness by including them in their graduation reporting, it is also true that this group of students is one of the most difficult to identify and track. Going forward, how schools are identifying and supporting students experiencing homelessness will only become more evident, as Every Student Succeeds Act requires schools, districts, and the state to report on academic outcomes for these students. There are as many lessons to be learned in how schools are identifying these students as there are in the current outcomes.

### **Few Districts Prepare Students with Disabilities for College and Career**

Colorado does not report graduation data separately for students with mild-moderate disabilities and more severe disabilities, making it difficult to figure out the systems that are struggling to support students to graduate on-time, and districts where more students are eligible for longer-term programming in the K-12 system. That said, importantly, there are school districts that are better preparing students on an IEP to access postsecondary education. Students on IEPs in Boulder Valley and Lewis-Palmer had the highest average SAT scores, and those two districts are amongst the districts that had the highest graduation rate for that group of

students. However, even in the districts with the highest SAT scores for students with IEPs, the average student did not meet the graduation guidelines benchmark.

### **Schools Where Students of Color Reach SAT College Readiness**

At only 26 Colorado high schools did the average black student meet the Reading and Writing cut score in 2017; and only at 4 high schools did the average black student meet the Math cut score. At 99 high schools the average Latinx student met the Reading and Writing cut score; at 38 high schools the average Latinx student met the Math cut score. The average white student met the Reading and Writing cut score at 241 high schools, and met the Math cut score at 155 high schools. This section explores the schools that are doing best by these students in terms of preparing them to graduate prepared for the next step. See Figure 20.

### **Schools Supporting All Students to Access College**

While there are significant gaps that continue to exist between groups of students within schools, some schools are doing a better job at narrowing those gaps, and setting all students up to access postsecondary educational opportunities. DSST: Stapleton High School saw Colorado's highest average SAT score for white students, for black students, and for students eligible for free or reduced price lunch, and amongst the highest average scores for Latinx students and students ineligible for free or reduced price lunch. D'Evelyn High School saw the highest average score for Latinx students, and students ineligible for free or reduced price lunch, and amongst the highest scores for white students.

### **Schools Outside of the Denver Metro Area Best for College Preparation**

Across groups of students, the vast majority of schools with the highest average SAT scores are in the Denver Metro Area. Exceptions are Liberty Common Charter School in Poudre, and a handful of schools in the Colorado Springs metro area including Liberty High School in Academy 20, Thomas MacLaren Charter School, Colorado Springs Early College, and The Vanguard School in Cheyenne Mountain.

### **Proof Point at Victory Prep Academy**

Victory Preparatory Academy is a charter school located within the Adams 14 school district in Commerce City yet is authorized by the Charter School Institute. Adams 14 has struggled to support its students and has been on the accountability clock for 7 years. Notably, Latinx students at Victory Preparatory Academy had the third highest average SAT score in 2017 of all schools serving Latinx students. Indeed, the average at Victory

Preparatory Academy (1133.8) is more than 250 points higher than Adams City High School (870.2), the district-run high school in Adams 14. It is worth understanding how students are being supported so differently in two schools serving the same community and share those lessons.

## **Policy Considerations**

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### **Make Graduation Meaningful**

In an attempt to push Colorado to a competency-based system rather a "time-in-the-seat" system, the Colorado legislature passed House Bill 07-1118 to outline guidelines that students would have to meet to show they had mastered the academic skills they are intended to gain during their time in the K-12 education system. These requirements will first impact the freshmen class of 2017-18.

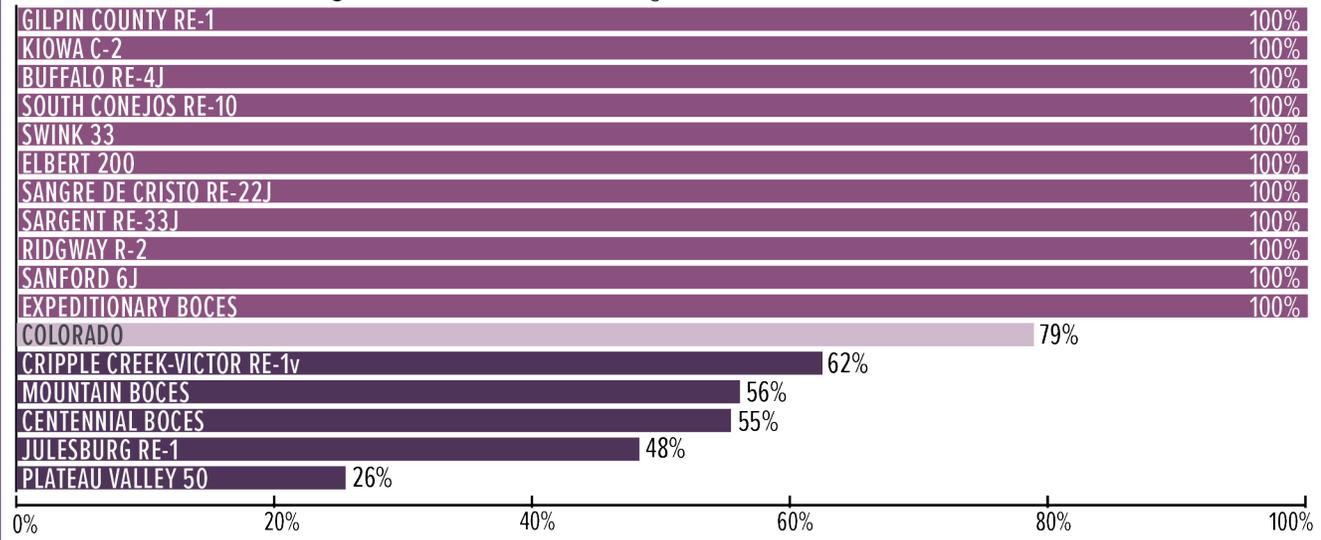
As it currently stands, the menu of options for students to demonstrate their college and career-readiness is not particularly comparable in terms of their rigor. While we recognize that there are many ways to show mastery of academic standards, many of the options are defined at the local level without clarity around what the state expectation of rigor is. This does a disservice to students because it perpetuates the current challenge that a diploma in one community in Colorado is not the same as a diploma in another community. As students, schools, and districts are held to the standards set out by the graduation requirements, the state must play a critical role of ensuring systems are setting students up to meet high expectations that will prepare them for college, career, and beyond.

# Small District Snapshot

## Some Small Districts Supporting All Students to Graduate

Eleven districts in the state had a graduation rate of 100% for the class of 2016. It is worth digging further into how these communities built cultures and supports to ensure every student in their community graduated from high school on-time, which would be relevant in small rural schools and large urban and suburban schools alike.

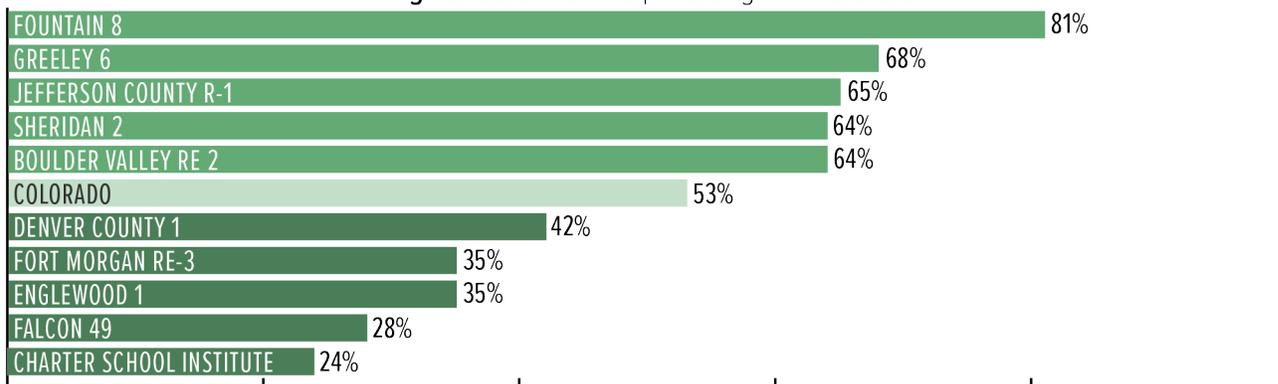
**Figure 17.** Small Districts with Highest and Lowest Graduation Rates



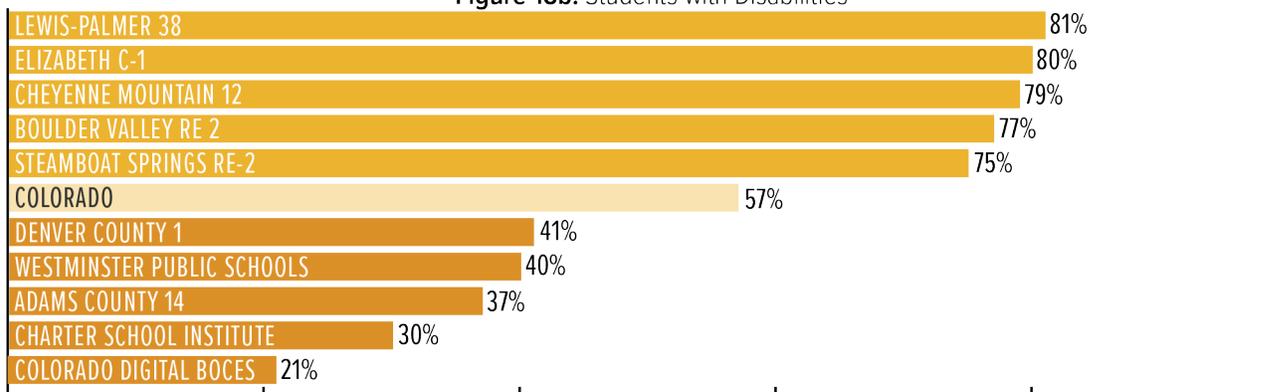
# College and Career Readiness Data

**Figure 18.** Large Districts with the Highest and Lowest Graduation Rates - Students with Specific Services

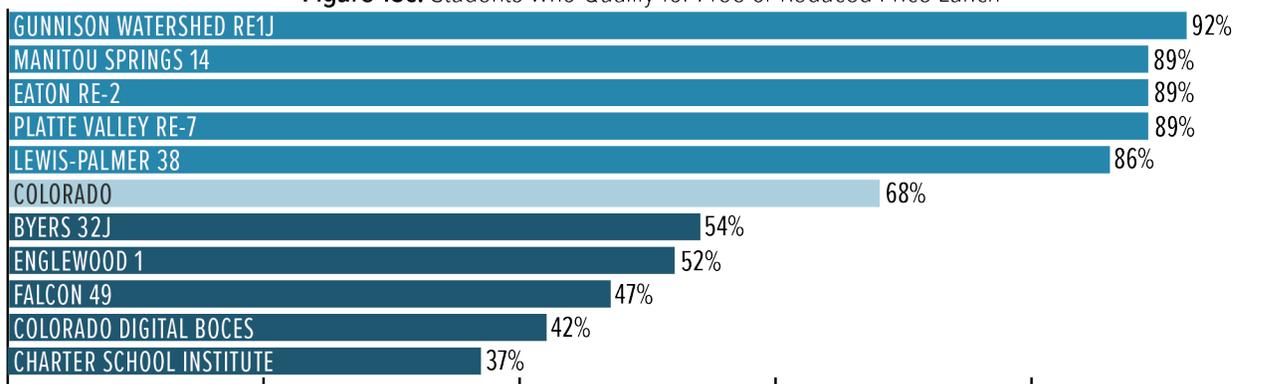
**Figure 18a.** Students Experiencing Homelessness



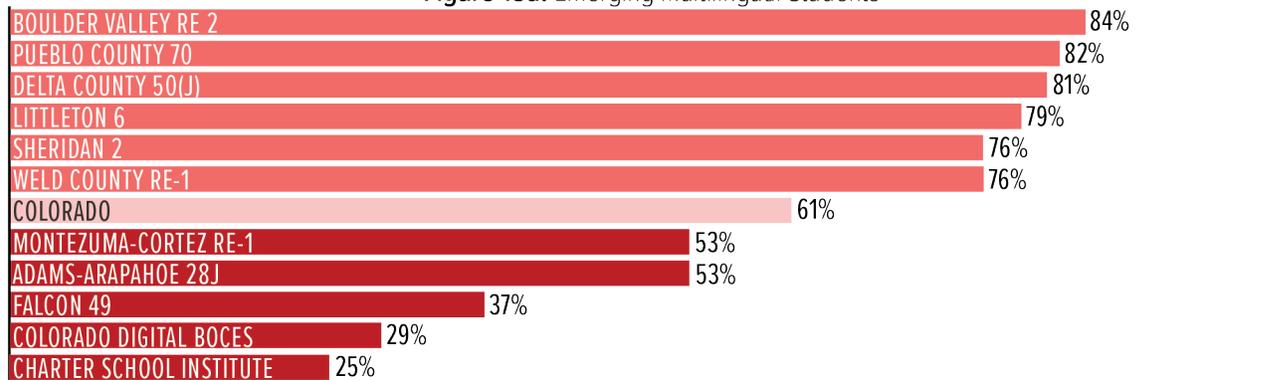
**Figure 18b.** Students with Disabilities



**Figure 18c.** Students Who Qualify for Free or Reduced Price Lunch



**Figure 18d.** Emerging Multilingual Students



0% 20% 40% 60% 80% 100%

**Figure 19.** High Schools with the Highest SAT Scores by Student Group

Figure 19a. Latinx Students		
DISTRICT NAME	SCHOOL	OVERALL SCORE
JEFFERSON COUNTY R-1	D'EVELYN JUNIOR/SENIOR HS	1243.9
DENVER COUNTY 1	DENVER SCHOOL OF THE ARTS	1191.1
CHARTER SCHOOL INSTITUTE	VICTORY PREP ACADEMY	1133.8
DENVER COUNTY 1	DSST: STAPLETON HS	1132.2
JEFFERSON COUNTY R-1	RALSTON VALLEY SENIOR HS	1129.4
DENVER COUNTY 1	DSST: GREEN VALLEY RANCH HS	1114.1
CHERRY CREEK 5	CHERRY CREEK HS	1101.8
JEFFERSON COUNTY R-1	CONIFER SENIOR HS	1098.8
JEFFERSON COUNTY R-1	EVERGREEN HS	1096.9
LEWIS-PALMER 38	LEWIS-PALMER HS	1091.9

Figure 19b. Black Students		
DISTRICT NAME	SCHOOL	OVERALL SCORE
DENVER COUNTY 1	DSST: STAPLETON HS	1097
DENVER COUNTY 1	DSST: GREEN VALLEY RANCH HS	1089.5
DENVER COUNTY 1	DSST: COLE HS	1087.3
CHERRY CREEK 5	CHERRY CREEK HS	1023.8
CHERRY CREEK 5	CHEROKEE TRAIL HS	993.9
ADAMS-ARAPAHOE 28J	LOTUS SCHOOL FOR EXCELLENCE	986.3
CHERRY CREEK 5	GRANDVIEW HS	983.5
ACADEMY 20	LIBERTY HS	982.2
CHERRY CREEK 5	EAGLECREST HS	961.6
CHERRY CREEK 5	SMOKY HILL HS	960.5

Figure 19c. White Students		
DISTRICT NAME	SCHOOL	OVERALL SCORE
DENVER COUNTY 1	DSST: STAPLETON HS	1325.6
JEFFERSON COUNTY R-1	D'EVELYN JUNIOR/SENIOR HS	1319.8
CHEYENNE MOUNTAIN 12	THE VANGUARD SCHOOL (HIGH)	1283
CHARTER SCHOOL INSTITUTE	THOMAS MACLAREN STATE CHARTER	1267.5
POUDRE R-1	LIBERTY COMMON CHARTER	1254.7
BOULDER VALLEY RE 2	FAIRVIEW HS	1250.9
BOULDER VALLEY RE 2	PEAK TO PEAK CHARTER	1232.4
DENVER COUNTY 1	GEORGE WASHINGTON HS	1228.3
BOULDER VALLEY RE 2	BOULDER HS	1227
DENVER COUNTY 1	EAST HS	1224.1

Figure 19d. Multiracial Students		
DISTRICT NAME	SCHOOL	OVERALL SCORE
BOULDER VALLEY RE 2	BOULDER HS	1280.9
BOULDER VALLEY RE 2	FAIRVIEW HS	1280.9
JEFFERSON COUNTY R-1	CHATFIELD HS	1201.7
DOUGLAS COUNTY RE 1	MOUNTAIN VISTA HS	1199
CHERRY CREEK 5	CHERRY CREEK HS	1196.2
JEFFERSON COUNTY R-1	RALSTON VALLEY SENIOR HS	1178.8
ADAMS 12 FIVE STAR	LEGACY HS	1178.1
LITTLETON 6	ARAPAHOE HS	1176.2
JEFFERSON COUNTY R-1	LAKESWOOD HS	1154.3
DOUGLAS COUNTY RE 1	ROCK CANYON HS	1152.1

Figure 19e. Free or Reduced Price Lunch Eligible Students		
DISTRICT NAME	SCHOOL	OVERALL SCORE
DENVER COUNTY 1	DSST: STAPLETON HS	1243.9
DENVER COUNTY 1	DSST: GREEN VALLEY RANCH HS	1191.1
JEFFERSON COUNTY R-1	RALSTON VALLEY SENIOR HS	1133.8
DENVER COUNTY 1	DSST: COLE HS	1132.2
CHERRY CREEK 5	CHERRY CREEK HS	1129.4
BOULDER VALLEY RE 2	MONARCH HS	1114.1
DOUGLAS COUNTY RE 1	ROCK CANYON HS	1101.8
DOUGLAS COUNTY RE 1	CHAPARRAL HS	1098.8
DOUGLAS COUNTY RE 1	MOUNTAIN VISTA HS	1096.9
CHARTER SCHOOL INSTITUTE	COLORADO SPRINGS EARLY COLLEGES	1091.9

Figure 19f. Free or Reduced Price Lunch Ineligible Students		
DISTRICT NAME	SCHOOL	OVERALL SCORE
JEFFERSON COUNTY R-1	D'EVELYN JUNIOR/SENIOR HS	1313.2
DENVER COUNTY 1	DSST: STAPLETON HS	1274.6
CHEYENNE MOUNTAIN 12	THE VANGUARD SCHOOL (HIGH)	1267.1
POUDRE R-1	LIBERTY COMMON CHARTER	1253.2
BOULDER VALLEY RE 2	FAIRVIEW HS	1250.8
BOULDER VALLEY RE 2	PEAK TO PEAK CHARTER	1231.9
CHARTER SCHOOL INSTITUTE	THOMAS MACLAREN STATE CHARTER	1228.6
CHERRY CREEK 5	CHERRY CREEK HS	1225.8
BOULDER VALLEY RE 2	BOULDER HS	1219.4
DOUGLAS COUNTY RE 1	STEM SCHOOL	1217.3

**Note:** 2017 marked the first year that 11th graders took the SAT rather than the ACT. According to Colorado's graduation guidelines, for students to demonstrate that they have met the requirement, they must score at least a 470 on Evidence-based Reading and Writing, and a 500 on Math.

Figure 20. Gaps in College Readiness: SAT 2017

	COLORADO HIGH SCHOOLS WITH AT LEAST 16 VALID SCORES FOR THE STUDENT GROUP	COLORADO HIGH SCHOOLS WHERE THE AVERAGE STUDENT MET THE GRAD GUIDELINE IN EVIDENCE-BASED READING AND WRITING (470)	COLORADO HIGH SCHOOLS WHERE THE AVERAGE STUDENT MET THE GRAD GUIDELINE IN MATH (500)
LATINX STUDENTS	235	99	38
BLACK STUDENTS	37	16	4
WHITE STUDENTS	279	241	155
FREE OR REDUCED PRICE LUNCH ELIGIBLE	253	110	20
NOT FREE OR REDUCED PRICE LUNCH ELIGIBLE	289	242	151

# SUCCESS AFTER HIGH SCHOOL

High school diplomas matter; yet postsecondary credentials are increasingly important for access to economic opportunities and upward mobility. Nearly half of all current job openings in Colorado require some sort of education beyond high school.<sup>6</sup> That number is only projected to increase. This section explores the proportion of students who are matriculating to two- and four-year degrees directly following their graduation in the spring, and the extent to which those students require remediation after they enroll in those degree programs. These data points are clearly not exhaustive of the opportunities that students can access after high school, but they provide helpful insight into select pathways for students.

## Outlier Analysis

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### High Matriculation Rates Are Spread Across the State

Some of the districts with the highest matriculation rates for a number of groups of students include the usual suspects; matriculation rates are high in suburban districts like Littleton, Boulder, Douglas County, Academy 20, and Cheyenne Mountain with highly educated populations where students are more likely to have at least one parent with a college degree, a highly correlated factor to student matriculation.

Yet for different groups of students, access to postsecondary educational programs are more scattered. For example, Valley Re-1 in Logan County, Durango, and Alamosa have the highest matriculation rates for students who qualify for free or reduced price lunch. This highlights that all communities can and do open doors for students. Indeed look to Sterling, served by Valley Re-1, where fewer than 1 in 6 adults have a bachelor's degree or higher, and is one of the communities that most effectively opened pathways to postsecondary programs for their low-income students anywhere in the state.

### Districts That Provide Opportunities to All Students

Many districts that are the most effective in getting white or more affluent students to enroll in college programs after graduation are not amongst the top districts for students of color, or for lower-income students. Yet there are exceptions to that trend. In particular Alamosa, and Academy 20 appear to be particularly effective in helping all students access postsecondary opportunities.

Alamosa had the highest matriculation rate in the state for students who were not eligible for free or reduced price lunch; Alamosa's matriculation rate for students eligible for free or reduced price lunch was also amongst the top five larger districts in the state. And Alamosa saw some of the highest matriculation rates for white and Latinx students. Academy 20 in Colorado Springs had some of the highest matriculation rates for students eligible for free or reduced price lunch, for Latinx students, and for black students.

### Districts with the Highest Matriculation Rates and Most Prepared Students

Accessing postsecondary programs is important, yet being prepared for those programs is even more critical if students are to achieve the learning and credentials promised by a college education. Of note, Cheyenne Mountain, Summit, Valley Re-1, and Boulder are amongst the top districts in terms of getting graduates to access college programs; they are also amongst the districts whose graduates have the lowest remediation rates.

### Districts That Send Students to College Prepared

Conversely, some districts with the lowest matriculation rates have the highest remediation rates. In fact Adams County 14, Westminster 50, and Sheridan send the fewest graduates to postsecondary programs; those graduates who do actually enroll in a postsecondary program take some of the highest rates of developmental education—classes that cover high-school level material at a cost to students.

### **Districts with Improvements and Low Remediation Rates**

Bennet, East Grand, Bayfield and Steamboat all saw vast improvements in the remediation rates from the class of 2013 to the class of 2015, ranging from 11 to 27 point decreases in the percent of students who needed developmental education courses when they went to college.

### **Districts with High Remediation Rates and Improvement**

Eight of the ten districts with the highest remediation rates in the state in 2015 have seen these rates climb in the past few years. It is clear that these districts are not setting the vast majority of their students up to be ready for college, and it does not appear to be moving in the right direction. This means fewer students will be able to succeed in postsecondary programs, at great cost to students themselves.

are available to students. In terms of access to advanced coursework, the rigor and quality is highly variable. For example, Advanced Placement classes have clear standards, but concurrent enrollment is highly variable across the state and thus participation in that program is not a comparable measure. Additionally, little workforce data is connected to the state's education data, so understanding employment opportunities for students after graduation is nearly impossible.

These are all important pathways for students that families, educators, and policymakers alike need to better understand, but the current data is limited, disconnected, of dubious quality, inaccessible, or non-existent.

## **Policy Considerations**

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### **Communicate Postsecondary Quality**

This report presents limited information about students who enroll in any 2- or 4-year degree program immediately after graduating from high school and explores how well prepared those students are. However, there is little information about the quality of programming that students are accessing after high school. Not all college programs are created equally, and it is critical to help students, families, educators, communities, and policymakers understand the quality of colleges students access after high school, whether those programs support students to get a degree, and what outcomes are for students after they finish their degree. We urge the state to better measure and communicate the quality of postsecondary options to high school students and their families.

### **Lack of Information on Postsecondary Options**

This section does not explore students' access to Career and Technical Education, access to advanced coursework in high school, or employment outcomes after high school. This decision is not because these are not important, but because the data is not comparable across geographies. There is little information on students who enter directly into the workforce after high school, or who attend non-traditional postsecondary programs, or who enlist in the military.

It is difficult to understand due to tracking systems challenges when and what career and technical offerings

# College and Career Readiness Data

**Figure 21.** Districts with the Highest and Lowest Matriculation Rates by Student Group

**Figure 21a. All Students- Large Districts**

	DISTRICT NAME	MATRICULATION RATE
Highest	BOULDER VALLEY RE 2	72.3%
	LITTLETON 6	70.3%
	ACADEMY 20	70.1%
	DOUGLAS COUNTY RE 1	70.1%
	CHEYENNE MOUNTAIN 12	69.9%
	FREMONT RE-2	36.7%
Lowest	FALCON 49	35.8%
	ADAMS COUNTY 14	32.3%
	WESTMINSTER 50	30.1%
	SHERIDAN 2	21.0%

**Figure 21b. All Students- Small Districts**

	DISTRICT NAME	MATRICULATION RATE
Highest	FRENCHMAN RE-3	100%
	SANGRE DE CRISTO RE-22J	86.4%
	SARGENT RE-33J	85.2%
	SIERRA GRANDE R-30	76.5%
	TELLURIDE R-1	74.5%
	IGNACIO 11 JT	32.4%
Lowest	JULESBURG RE-1	25.2%
	CRIPPLE CREEK-VICTOR RE-1	20.0%
	MIAMI/YODER 60 JT	18.8%
	PLATEAU VALLEY 50	18.5%

**Figure 21c. Students Eligible for Free or Reduced Price Lunch**

	DISTRICT NAME	MATRICULATION RATE
Highest	VALLEY RE-1	62.5%
	DURANGO 9-R	60.0%
	ALAMOSA RE-11J	57.1%
	CHERRY CREEK 5	55.4%
	ACADEMY 20	55.2%
	FALCON 49	23.4%
Lowest	ARCHULETA COUNTY 50 JT	22.9%
	SHERIDAN 2	22.0%
	FREMONT RE-2	20.0%
	SALIDA R-32	20.0%

**Figure 21d. Students Ineligible for Free or Reduced Price Lunch**

	DISTRICT NAME	MATRICULATION RATE
Highest	ALAMOSA RE-11J	78.7%
	BOULDER VALLEY RE 2	76.6%
	EATON RE-2	74.7%
	LITTLETON 6	73.2%
	SUMMIT RE-1	72.8%
	ENGLEWOOD 1	40.4%
Lowest	BYERS 32J	37.7%
	WESTMINSTER 50	35.5%
	ADAMS COUNTY 14	30.0%
	SHERIDAN 2	16.7%

**Figure 21e. Latinx Students**

	DISTRICT NAME	MATRICULATION RATE
Highest	VALLEY RE-1	72.0%
	CHEYENNE MOUNTAIN 12	68.8%
	ALAMOSA RE-11J	65.6%
	ACADEMY 20	64.4%
	LEWIS-PALMER 38	63.9%
	WESTMINSTER 50	28.8%
Lowest	ARCHULETA COUNTY 50 JT	26.7%
	FALCON 49	26.4%
	ESTES PARK R-3	17.6%
	SHERIDAN 2	17.3%

**Figure 21f. Black Students**

	DISTRICT NAME	MATRICULATION RATE
Highest	ACADEMY 20	70.0%
	SCHOOL DISTRICT 27J	68.8%
	DOUGLAS COUNTY RE 1	66.7%
	WIDFIELD 3	63.5%
	PUEBLO CITY 60	63.3%
	GREELEY 6	50.0%
Lowest	DENVER COUNTY 1	49.9%
	FALCON 49	48.0%
	CHARTER SCHOOL INSTITUTE	37.5%
	COLORADO SPRINGS 11	36.4%

**Figure 21g. White Students**

	DISTRICT NAME	MATRICULATION RATE
Highest	BOULDER VALLEY RE 2	75.3%
	EATON RE-2	74.1%
	LAKE COUNTY R-1	73.7%
	ALAMOSA RE-11J	73.3%
	SUMMIT RE-1	72.2%
	GARFIELD 16	38.2%
Lowest	MAPLETON 1	36.8%
	FREMONT RE-2	34.6%
	WESTMINSTER 50	25.0%
	ADAMS COUNTY 14	20.8%

**Figure 22.** Districts with the Lowest and Highest Remediation Rates

**Figure 22a.** Districts with the Lowest Remediation Rates

DISTRICT	CLASS OF 2015 % TAKING DEVELOPMENTAL EDUCATION (REMEDIATION)	$\Delta$ 2013-2015
BENNETT 29J	9.7%	-12.2%
ASPEN 1	14.8%	3.7%
EAST GRAND 2	15.8%	-27.1%
CHEYENNE MOUNTAIN 12	17.3%	-0.4%
SUMMIT RE-1	18.2%	-0.8%
PEYTON 23 JT	19.2%	-7.7%
BAYFIELD 10 JT-R	20.0%	-17.8%
VALLEY RE-1	20.8%	-5.2%
BOULDER VALLEY RE 2	21.5%	3.1%
STEAMBOAT SPRINGS RE-2	21.6%	-11.2%

**Figure 22b.** Districts with the Highest Remediation Rates

DISTRICT	CLASS OF 2015 % TAKING DEVELOPMENTAL EDUCATION (REMEDIATION)	$\Delta$ 2013-2015
TRINIDAD 1	83.3%	25.8%
CENTER 26 JT	73.7%	14.6%
WESTMINSTER 50	71.6%	16.8%
ADAMS COUNTY 14	69.5%	6.7%
WELD COUNTY S/D RE-8	65.5%	16.8%
MONTE VISTA C-8	65.4%	-13.4%
NORTH CONEJOS RE-1J	61.8%	11.8%
SHERIDAN 2	55.6%	3.2%
PUEBLO CITY	54.9%	-0.2%
SCHOOL DISTRICT 27J	54%	10.0%

**Note:** Includes all districts where the cohort > 16 (large and small), because the tracked cohorts, while still loosely related to overall district size, are a bit more variable. (i.e. some "large districts" actually have fewer kids that matriculate to college than "small districts")

# CONCLUSION

It is critical that every Colorado student have access to an excellent education, yet those opportunities are not available to every student in every community. Across the state there continue to be groups of students who are largely left behind by the education system. Yet this report elevates bright spots for students across Colorado, and in particular for students from historically marginalized communities, in districts large and small, on the front range and beyond.

We offer the following thoughts on how policymakers, educators, and communities can impact the education system, and ensure that excellent education opportunities reach every Colorado student.

## State Policy Recommendations

### **1. Honest, accessible, and timely information about how students are performing.**

This report explored the systems that are best serving students. Understanding what is working and for whom is the foundation of improving our state's education system for every student. Individual student privacy must be protected, but current protocols go well beyond ensuring privacy. Current practices around data reporting and information sharing at the state-level has devalued system improvement in that it is increasingly impossible to understand how schools serve all students, and in particular to focus on inequities by race, class, gender, language background, or diverse learning needs. This practice masks successes, and undermines finding best practices. It also enables systems to hide behind masked data when they are not doing right by their students, and in particular their most highly impacted students.

Colorado must fix this problem to ensure educators and communities alike are able to learn what works in our state. The current reporting practices were implemented by Colorado Department of Education staff, without explicit direction from either the Colorado State Board of Education or from the Colorado legislature. The solution to this problem and need to strike a better balance

between protecting individual privacy and ensuring transparency about system efficacy, could be driven by CDE staff, the State Board of Education, or the state legislature.

### **2. Ensure equity-driven state accountability and support systems.**

This report raises deep questions about unequal outcomes and inequitable opportunities for different groups of students within school systems. It begs the question about whether our accountability and support systems are structured to fundamentally change how these students are served in schools. There are promising signs in some districts that were once on the state's accountability clock that have made vast improvements. In other districts currently or previously on the accountability clock that is not the case. In these cases, the state must continue to intervene and ensure local policy and practices are actually changed to better provide students access to quality schools. It is not clear if the current accountability and support systems are structured to ensure schools and districts prepare students for college and career success, or if they are structured to just help schools and districts to be better than the school down the street or on the other side of the Continental Divide.

### **3. Rethink network learning.**

What is clear in this report is that there are many places to look for practices in schools and districts that are best supporting students. What is less clear is whether there are ways to collect and share those best practices. The CDE would be an important place to start. Multiple functions at the CDE gather information about how schools and districts are serving students. The Department should look for ways to partner with local communities to unlock and share that information so it is useful for districts and families alike, helping local educators and communities identify, contextualize, and implement lessons learned.

## District Policy Recommendations

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### **1. School improvement must be a community strategy.**

What is clear from the data explored in this report is that schools do not exist in a silo separate from society. Schools are a reflection of their community, and improvement must be rooted in an ecosystem of educators, families, elected officials, service providers, and community members. But creating these ecosystems is equally dependent on the school system as it is on the community. Schools and districts must prioritize engaging and empowering communities, giving families and students a voice in the direction of their schools and education, and rallying around strategies that support student learning and growth.

### **2. School districts are the front line for communicating student performance to families.**

Information about student performance, particularly by different groups of students, is an essential responsibility of a school district. Families use this information to decide where to send their student; families and communities advocate for supports that their schools and students need; educators target resources and interventions to better support students. Without data transparency and accessibility at the local level about how students are being served, these decisions are hard or impossible and undermine collective efforts to improve schools. School districts must communicate with families about the quality of local schools in a way that reflects and resonates with the local community, enabling full understanding and participation of all stakeholders.

### **3. Ensure students have access to high quality schools that meet their learning needs.**

Developing different learning options for students looks different in every community across the state. Students have different learning needs, and deserve access to schools and programs that meet their needs, that engage them in the pursuit of learning, and that are high quality. From this report it is clear that some communities do not have sufficient quality options that meet the needs of students. We encourage local communities to evaluate the learning opportunities, school models, and program designs that families can access.

## Final Thought

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We hope that this report can contribute to best practice sharing; it is our hope that the information gleaned from these pages spark shared learning across systems. We celebrate this year's Outliers, and hope that educators, communities, and policymakers dig into the excellent work happening across the state.

# APPENDIX A: METHODOLOGY

## Data

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Data in The Outliers 2018 section on “Achievement in Elementary and Middle School” relies on results from the 2017 administration of Colorado Measures of Academic Success (CMAS) in English Language Arts (ELA) and Math. The standardized statewide assessment measures students’ mastery of grade-level content standards. There are five performance levels of CMAS, with levels 4 and 5 indicating that students have either “met” or “exceeded” expectations respectively. Students in grades 3-9 took CMAS in 2017.

The Colorado Department of Education publicly releases the performance levels of students by grade-level within schools and districts. Yet much of this data is suppressed due to reporting rules implemented by CDE. Data is reported when there is a cohort of students of 16, and when all individual cells have 4 or more observations.

When possible, A+ aggregated grade-level results of students who met or exceeded expectations at the education-level within schools and districts. A+ Colorado defines education-levels as follows:

- Elementary School: grades 3-5
- Middle School: grades 6-8

The percent of students who met or exceeded expectations was calculated as follows:

$$\frac{\text{sum[Ed Level Grades]Students who Scored Level 4 or 5 on CMAS in the District}}{\text{sum[Ed Level Grades]Valid Scores in the District}}$$

To be included in any achievement analysis by A+, a district must have had student performance publicly reported in at least two grades within the education level of interest. Districts with only one grade level of reported data were omitted from the analysis, because there is no way to verify if the reported grade was representative of student performance in the rest of the district in the education level.

A+ Colorado analyzes Elementary ELA and Elementary Math. A+ analyzes Middle School English Language Arts. Middle School Math results are not included in the analysis because students take end of course assessments that are not necessarily comparable. A+ relies on different data at the high school level, given that 9th grade results on CMAS are not necessarily representative of the performance of 9th-12th graders.

## Methodology to Calculate Improvements Over Time

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Colorado has administered CMAS for the past three years, beginning in 2015, when the state switched from its previous assessment CSAP/TCAP. Since this first release, A+ has relied on the public release to calculate the percent of students meeting or exceeding grade-level expectations by education-level.

A+ tracked the change over the past three years of the percent of students at an education level (elementary or middle) who met or exceeded expectations.

To be included in the analysis, districts must have had at least two grades of data publicly reported to be aggregated at the education level of interest.

Districts were identified as making improvements if they showed either years of positive progress within the ed level and subject of interest, or had one year of positive progress and stability the other year. Districts could have had stable proficiency rates for one year, but could not have experienced any decline in the percent of students who met or exceeded expectations from 2015 to 2016 or from 2016 to 2017.

The method of calculating 2016 CMAS results mirrored the method used in this report on the 2017 scores. Data was included in the analysis of 2015 CMAS results when a) there were more than 15 valid scores, b) results of the valid scores were reported or results could be estimated. This change in methodology in 2015 to 2016 and 2017 was due to changed reporting rules from the Colorado Department of Education.

## Methodology to Calculate Similar District Comparisons

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To better compare like-districts based on the demographics of the students they serve. Every district was assigned a District Demographic Index score between 1 and 100. Research shows that the included factors are often highly correlated to student academic performance on standardized assessments.

$$\begin{aligned} \text{District Demographic Index} = & \\ & (40\% \text{ SY16-17 District FRL Population}) + \\ & (20\% \text{ SY16-17 District SPED Population}) + \\ & (20\% \text{ SW16-17 District ELL Population}) + \\ & (20\% \text{ Average District Mobility Incidence Rate SY13-14} \\ & \text{ to 15-16}) \times 100 \end{aligned}$$

The percent of students qualifying for free or reduced price lunch was accessed through CDE publicly available data. The percent of students receiving SPED or ELL services in each district was accessed through a data request to the CDE. Mobility incidence rates were accessed through CDE publicly available data. A+ included an average over the past 3 years to control for dramatic fluctuations year to year; additionally, at the time of the analysis 16-17 mobility data was not yet available.

Using the calculated education level CMAS results, A+ then conducts a linear regression to look at the relationship between the district demographic index and the percent of students meeting or exceeding expectations on CMAS.

To be included in the analysis, districts must have had at least two grades of data publicly reported to be aggregated at the education level of interest.

To identify outlier districts compared to similar districts, A+ analyzed the residuals: the observed or actual value of students meeting expectations versus the predicted value. A+ considered districts as outliers if their residual was a full standard deviation from the average residual value.

# ENDNOTES

- 1 Teacher.scholastic.com. (2018). *Interview with Dr. Mae Jemison | NASA: Challenging the Space Frontier | Scholastic.com*. [online] Available at: [http://teacher.scholastic.com/space/mae\\_jemison/interview.htm](http://teacher.scholastic.com/space/mae_jemison/interview.htm) [Accessed 10 Jan. 2018].
- 2 Colmigateway.com. (2018). *LMI Gateway: Colorado Department of Labor and Employment Office of Labor Market Information*. [online] Available at: <https://www.colmigateway.com/> [Accessed 15 Dec. 2018].
- 3 Carnevale, A., Rose, S. and Cheah, B. (2011). *The College Payoff: Education, Occupations, Lifetime Earnings*. The Georgetown University Center on Education and the Workforce.
- 4 There are two notable exceptions to the common expectation of graduating from high school in four years. One is special education students who are served in the system until they are 21. In 2016 1,644 students ages 19-21 were receiving special education services through their local administrative unit. Because graduation data for students receiving special education services does not distinguish between students who are eligible for additional services, and those who should be supported to graduate within four years, we cannot break out this group separately. The second exception is students who participate in ASCENT, a program where students receive both a high school degree and a full year of credit at a local college program after five years. In 2015-16, 485 students in Colorado participated in this program. While the graduation data included in this report still reflects these students as not graduating on-time, this will be changed in state reporting beginning in the 2017-18 school year, when ASCENT students will get credit for a 4-year on-time graduation and still receive support for their 5th year.
- 5 *LMI Gateway: Colorado Department of Labor and Employment Office of Labor Market Information*. [online] Available at: <https://www.colmigateway.com/> [Accessed 15 Dec. 2018].
- 6 *American FactFinder - Results*. [online] Factfinder.census.gov. Available at: [https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_16\\_5YR\\_DP02&prodType=table](https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_DP02&prodType=table) [Accessed 6 Jan. 2018].



## ABOUT A+ COLORADO

The mission of A+ Colorado is to sharpen public education by building public will and advocating for the changes necessary to dramatically increase student achievement in schools and districts in Colorado. We are an independent, nonpartisan 501(c)(3) organization working to bring the power of data and research to challenge ourselves, educators and policymakers to rethink public education.

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