

Lincoln Public Schools MCAS Report

October 2021

Introduction

After quickly going remote in March 2020, the Massachusetts Comprehensive Assessment System (MCAS) was cancelled. The 2020-21 school year, when our students most recently took MCAS, was radically different than in years past; thus, this MCAS report is a bit different than ones from prior years. There are two critical areas of difference to foreground:

Our instructional model had significant alterations including:

- shorter school days
- faculty who worked in new roles to enable a fully in-school option
- interruptions for in-school students when a student, cohort, or grade needed to quarantine
- 20% of our students learning remotely for the year by choice with the same curriculum and pacing as in-school students
- significant increase in families choosing to homeschool their children from 27 students district-wide to 60
- students and staff who were in-school utilized a variety of health and safety mitigating measures including masks and mask breaks, distancing, hand hygiene, etc.
- a district-wide honing of standards and curriculum to focus on essential elements

The MCAS test and the testing experience were also radically different:

- even though the test is untimed, with a shorter day last year, students who utilized the entire day had less time to complete it
- for the first time, students were allowed to take MCAS remotely; remote students did not have educators physically in the room to observe them during testing and support them in traditional ways
- the test was halved, so there were far fewer questions; DESE shared in a press release on 9/21/2021 that “students were given shorter than usual tests, which can cause individual student performance to vary more than usual as compared to previous years”
- Student Growth Percentiles were calculated in a new way since scores could not be compared across two years given the fact that no MCAS testing occurred the prior year (more on this later)

All this is to say, analyzing MCAS data this year requires additional thoughtfulness to consider the myriad factors influencing scores, both when they seem positive as well as negative.

Overall achievement in grades 3-8 across the district

One basic indicator for student achievement on MCAS is the percent of students across the district in grades 3-8 who meet or exceed expectations. In the spring of 2021, **61% of our students in ELA, 48% of our students in math, and 53% of our students in science met or exceeded**

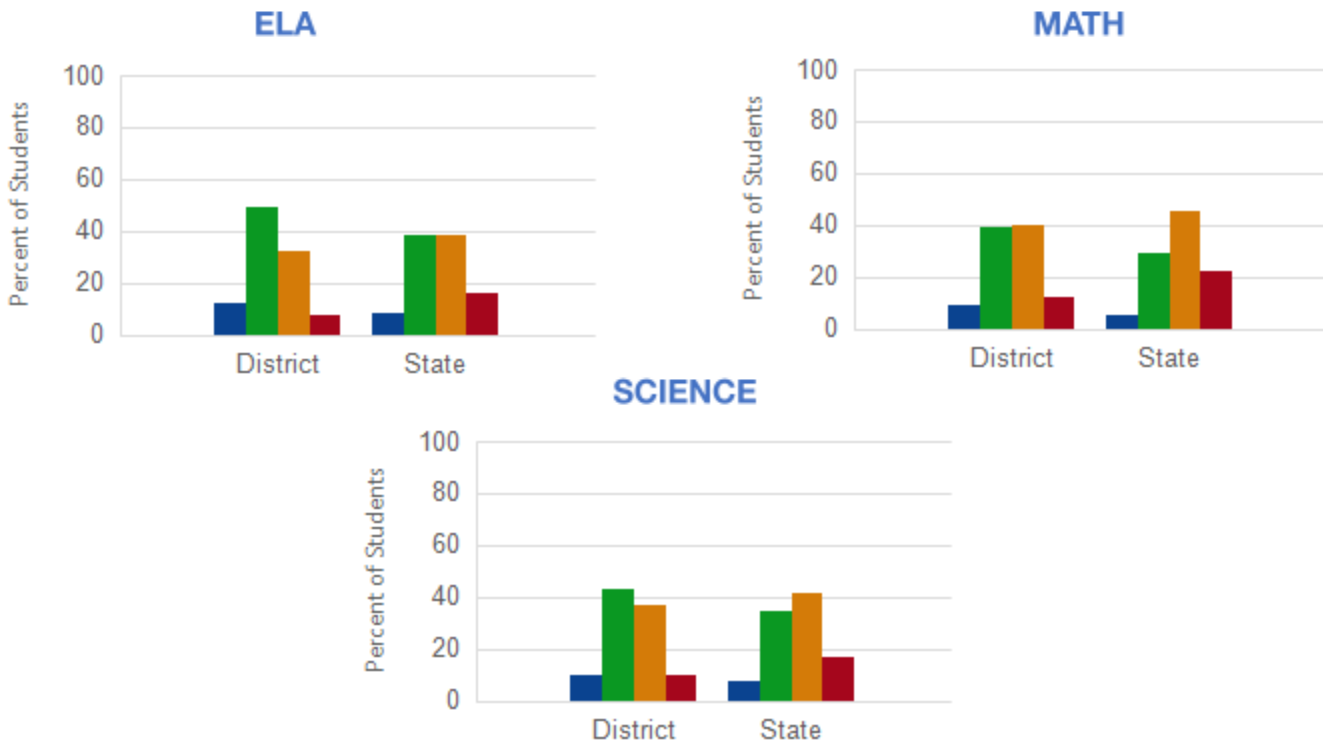
expectations on MCAS as compared to statewide rates of 46% in ELA, 34% in math, and 41% in science. Of the students who did not meet or exceed expectations in our district the majority partially met expectations.

	ELA		Math		Science	
	% LPS	% MA	% LPS	% MA	% LPS	% MA
Exceeding Expectations	12	8	9	5	10	7
Meeting Expectations	49	38	39	29	43	34
Partially Meeting Expectations	32	38	40	45	37	41
Not Meeting Expectations	7	16	12	22	10	17

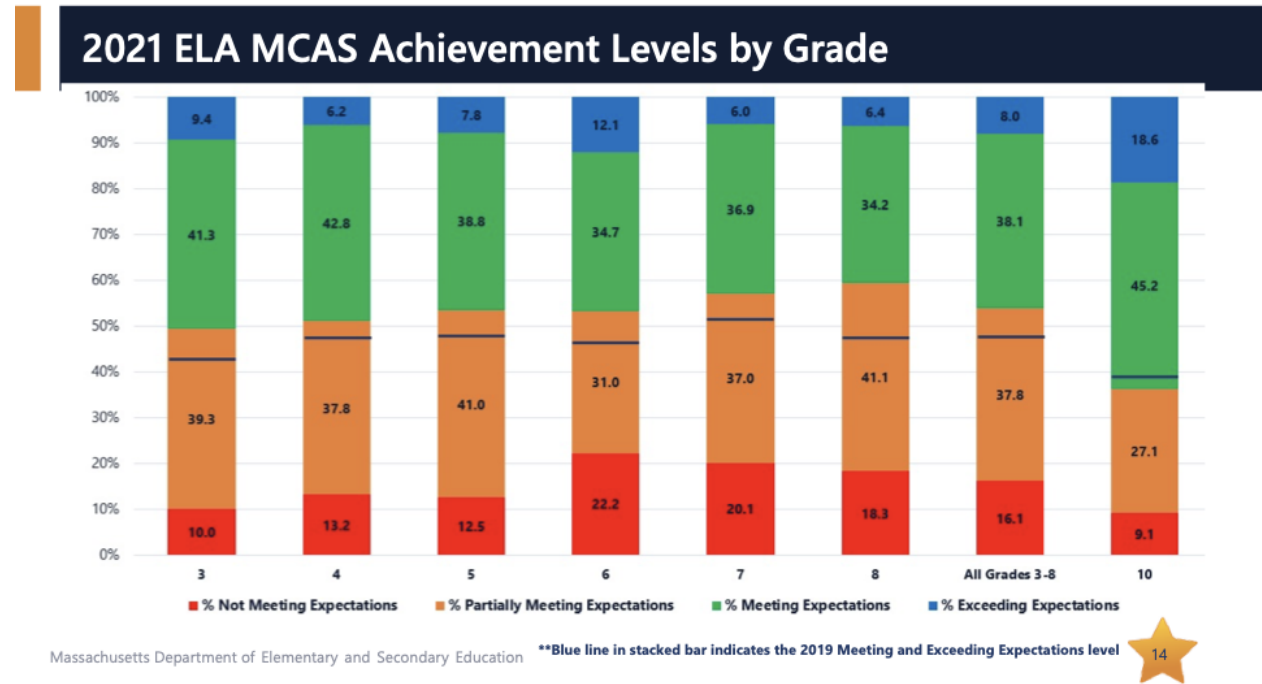
Lincoln students performed 12-15 percentage points higher than the state in all three content areas.

% of 3rd-8th graders Meeting or Exceeding Expectations	Lincoln	State	Difference
ELA	61	46	+15
Math	48	34	+14
Science	53	41	+12

The following three charts illustrate the same data visually.

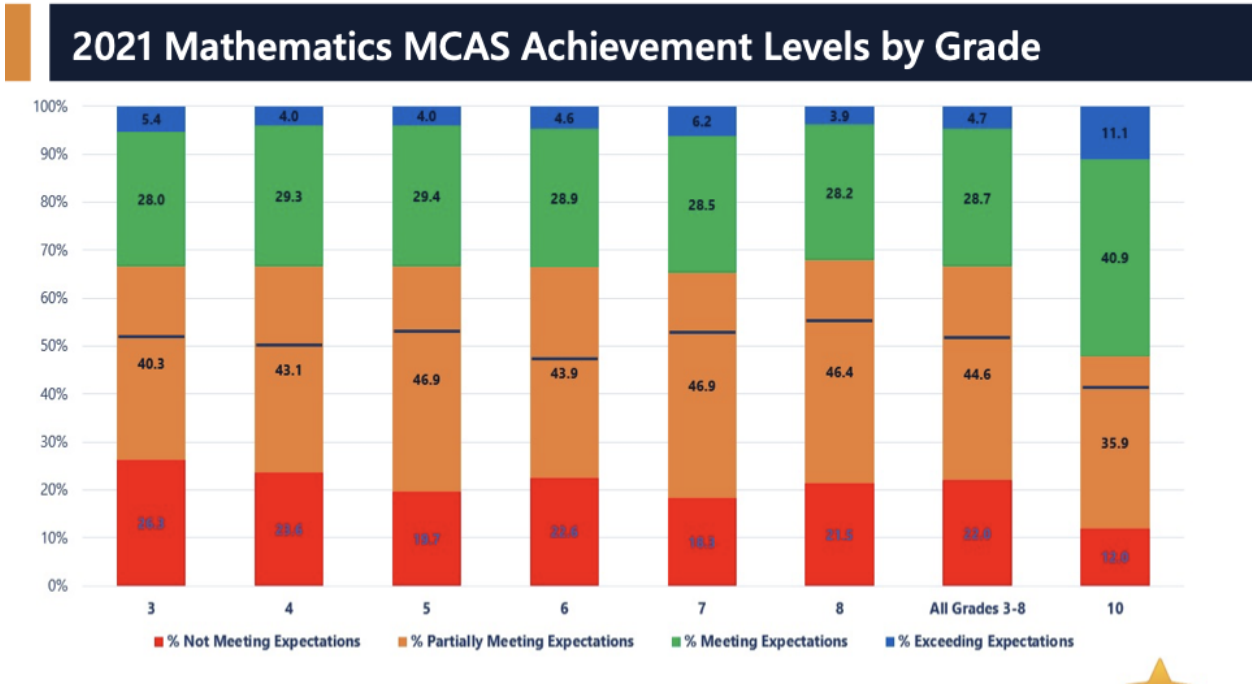


Across the state the overall achievement level of students Meeting or Exceeding Expectations decreased from 2019. Each individual grade level from 3-8 had lower percentages of student achievement in the top two categories as well as the total percentage of students Meeting or Exceeding Expectations. In ELA the percentage of students scoring in these categories decreased 6 percentage points from 2019-2021. Below is a slide and chart provided by DESE on September 21, 2019 illustrating the trends from 2019-2021 in ELA.



ELA					
Grade	Not Meeting	Partially Meeting	M&E Trend	Meeting	Exceeding
3	+2%	+3%	-6%	-5%	-1%
4	+4%	-1%	-3%	0%	-3%
5	+4%	+2%	-5%	-6%	+1%
6	+9%	-2%	-7%	-6%	-1%
7	+7%	-1%	-5%	-3%	-2%
8	+4%	+6%	-11%	-7%	-4%
3-8 Total	+5%	+1%	-6%	-4%	-2%

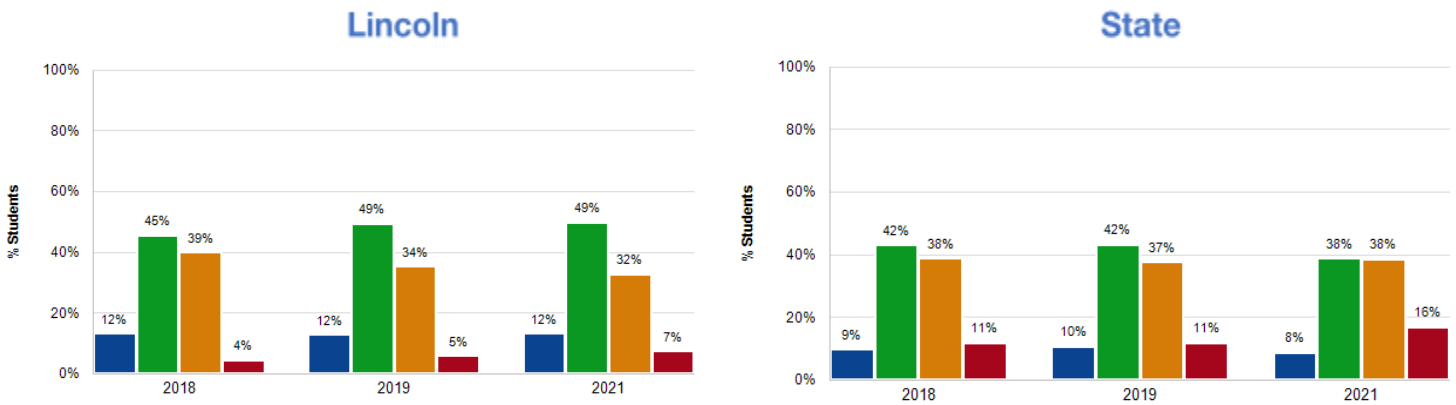
DESE also provided a slide and chart illustrating a significantly larger downward trend in math across the state, decreasing 15 percentage points.



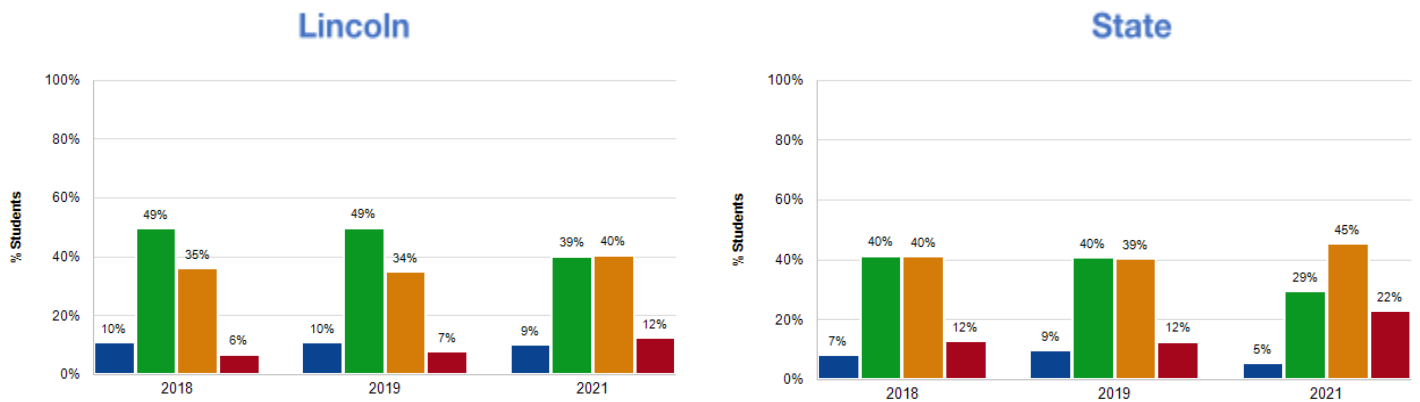
Math					
Grade	Not Meeting	Partially Meeting	M&E Trend	Meeting	Exceeding
3	+13%	+3%	-16%	-12%	-4%
4	+12%	+4%	-16%	-12%	-4%
5	+10%	+5%	-16%	-14%	-2%
6	+13%	+5%	-17%	-12%	-5%
7	+5%	+8%	-13%	-8%	-5%
8	+10%	+5%	-15%	-9%	-6%
3-8 Total	+10%	+6%	-15%	-11%	-4%

Lincoln students showed no dip whatsoever in terms of the percentage of students Meeting or Exceeding Expectations in ELA from 2019-2021. In math, our students' scores mimicked statewide math trends, decreasing by 11 percentage points. The state does not provide this data for science because we have not had three years of data utilizing the recently revised science test. The charts below show three years of data in ELA and math for Lincoln as well as for the state.

Three-year ELA 3-8 Achievement Distribution



Three-year Math 3-8 Achievement Distribution



Overall growth in grades 5-8 across the district

MCAS Student Growth Percentiles (SGP) have historically been a measure of how students perform on MCAS relative to other students state-wide who performed similarly in prior years. Typically, students are grouped by performance from prior years of MCAS. Students are then given a percentile rank within that group based on their performance on the latest MCAS assessment to determine a “cohort model SGP.” Each year, the cohort group changed (depending on the performance of the current year population), which resulted in the state average SGP of about 50.

Students in grade 3 and new students to the state do not have a SGP because they have not previously taken an MCAS assessment in order to compare growth across years. In prior years the state has defined SGPs of 40-60 to indicate Moderate Growth, SGPs below 40 to be Low or Very Low Growth, and SGPs above 60 to be High or Very High Growth.

This year, DESE made a significant change to how growth is determined. SGPs for 2021 are not true percentiles among a peer cohort taking the same assessment. This year, SGP was calculated using a historical academic peer group to determine “baseline model SGP.” Students were compared to the 2019 MCAS performance of a similar peer group, and the SGP represents what percentile the student’s 2021 score would have fallen in, had it been a 2019 score. Due to this change, there is not an even distribution of growth percentiles across the state indicating low, moderate, and high growth rates; whereas in prior years the average state-wide SGP was always approximately 50, this year it is 35.8 in ELA and 34.4 in Math. Given this change in methodology, it is necessary to use caution when directly comparing SGPs in 2021 to prior years, as this is not an apples-to-apples comparison. However, there is still value in considering this data, as it is the best representation available of growth, and we believe it is important to consider the progress students make from year to year and not solely achievement. The chart below shows mean growth percentiles in ELA and Math for Lincoln 5th-8th graders in 2021 and 4th-8th graders for the prior three testing years.

Year	ELA		Math		Type of SGP calculation
	Lincoln ELA SGP	State ELA SGP	Lincoln Math SGP	State Math SGP	
2021	52.4	35.8	41	30.4	<i>baseline model SGP</i>
2019	53.7	49.9	44.5	49.9	<i>cohort model SGP</i>
2018	53.1	50	50.5	50	<i>cohort model SGP</i>
2017	54	50	60	50	<i>cohort model SGP</i>

Achievement and growth as compared to other districts

Comparing districts is always somewhat challenging; while the districts that we included in this report are ones we consider to be our peers it is important to note that Lincoln is unique among this group. Over half of our students reside on Hanscom Air Force Base. These students frequently arrive throughout the school year, come to us with unique and diverse prior learning and life experiences, and rarely stay with us for longer than a few years. Typically, our Hanscom campus has one of the highest churn rates¹ amongst traditional public districts in the state. Relatedly, our student population has some of the lowest stability rate² out of traditional public districts across Massachusetts. Serving our students at Hanscom is something our district is proud, committed, and

¹ Churn rate measures the number of students transferring into or out of a public school or district throughout the course of a school year.

² Stability rate measures how many students attending school on October 1 remain in the school for the entirety of the school year.

honored to do. We are developing better ways to track the growth of our students so that we can monitor their success in ways that feel appropriate and helpful.

Comparing MCAS scores across districts is even more complicated this year than in the past. Every district's students, families, and faculties were affected differently and disproportionately based on location, economics, and race. In response, every district constructed a different and often dynamic educational model. It is important to keep in mind all of these differences when examining comparative data across districts.

On the following page are two charts that show the median SGP and the percent of students who Met or Exceeded Expectations for fifteen fellow districts. While our district math SGP is in “the middle of the pack” so to speak (being 7th among the 15), the Lincoln campus had the third highest math SGP. Additionally, Lincoln had the highest mean SGP in ELA compared to all our neighboring districts.

Comparison ELA -- sorted by SGP*		Comparison ELA -- sorted by % M & E	
District/School	SGP	District/School	% M & E
<i>Lincoln Campus</i>	55.6	Weston	76
Lincoln District	52.4	Carlisle	76
Needham	48.5	Belmont	76
Arlington	48.5	Lexington	75
Lexington	48.2	Wellesley	75
Sudbury	47.4	Westwood	75
<i>Hanscom Campus</i>	45.1	Sudbury	73
Bedford	44.9	Wayland	73
Weston	44.8	Winchester	73
Wayland	43.9	<i>Lincoln Campus</i>	72
Wellesley	43.8	Needham	72
Westwood	43.7	Bedford	72
Natick	43.4	Arlington	71
Carlisle	43.2	Concord	70
Acton-Boxborough	43.2	Acton-Boxborough	69
Belmont	39.4	Natick	65
Concord	37.3	Lincoln District	61
Winchester	36.7	<i>Hanscom Campus</i>	52
State	35.8	State	46

*Note: using “baseline model growth” as compared to typical “cohort model growth”

Comparison Math -- sorted by SGP*		Comparison Math -- sorted by % M & E	
District/School	SGP	District/School	% M & E
Acton-Boxborough	53.1	Lexington	72
Needham	48.5	Carlisle	69
<i>Lincoln Campus</i>	45.9	Weston	69
Carlisle	45.8	Sudbury	67
Bedford	44.7	Belmont	67
Lexington	44.4	<i>Lincoln Campus</i>	66
Arlington	41.7	Bedford	66
Lincoln District	41.0	Wayland	66
Sudbury	40.4	Acton-Boxborough	65
Weston	40.1	Needham	62
Natick	37.6	Wellesley	62
Wayland	37.1	Westwood	62
Wellesley	34.4	Winchester	61
Belmont	34.0	Concord	60
Westwood	31.2	Arlington	59
Winchester	30.4	Natick	54
State	30.4	Lincoln District	49
<i>Hanscom Campus</i>	29.9	<i>Hanscom Campus</i>	35
Concord	28.4	State	33

*Note: using "baseline model growth" as compared to typical "cohort model growth"

LINCOLN – Achievement and Growth by Campus

On the Lincoln campus, nearly three-quarters of students in grades 5-8 met or exceeded expectations in ELA and two thirds performed just as strongly in math. Students in grades 5-8 met or exceeded expectations 1.5 times as much as students across the state and twice as much in math.

While it is always the case that 3rd graders do not receive a growth percentile since it is the first time they take MCAS, this year no 4th graders could receive a growth percentile either, since when they were 3rd graders in the spring of 2020, MCAS was cancelled. The median SGP for ELA was 55.6, nearly 20 percentile points above the state. The median SGP for math was 45.9, over 15 percentile points above the state. One can see a range of growth across grade levels once disaggregated. It is important to note that when we examine groups of students within a grade-level at a particular campus, the number of students included in the data is smaller, so it can be more variable year to year.

	ELA		Math	
Grade	SGP	% M & E	SGP	% M & E
3	-	71	-	58
4	-	68	-	73
5	60.5	73	54	78
6	52.7	68	17.3	35
7	60.8	84	42.7	70
8	47	66	73.2	82
Grades 5-8	55.6	72	45.9	66
State	35.8	46	30.4	33

HANSCOM – Achievement and Growth by Campus

On the Hanscom campus, 6% more students met or exceeded expectations in ELA and 2% more students did the same in math when compared to students across the state.

Hanscom students displayed 10 percentile points more growth when compared to students across the state and 0.5 less growth in math. All 3rd and 4th graders in the state and in our district had their very first experience taking MCAS in 2021 since there was no testing in 2020. But, at Hanscom, 82 out of the 172 5th-8th graders last spring (48%) were also taking MCAS for the first time since they joined our district after locating to Hanscom with their families some time between the spring of 2019 and the spring of 2021. When we compare that to the Lincoln campus where 12 out of the 215 5th-8th graders (<1%) took MCAS for the first time, it helps to put into perspective just how much our military students move in and out of our district as their families receive orders and assignments. This also impacts the number of students who can be included to determine SGP since nearly 50% of students at HMS in grades 5-8 would not be eligible for an SGP. This means that within these charts achievement data (percentage of students meeting or exceeding expectations) includes all students who took MCAS in 2021 but about half of those students are included in calculating the SPG, significantly reducing the n-size and sometimes resulting in incomplete data.

	ELA		Math	
Grade	SGP	% M & E	SGP	% M & E
3	-	54	-	23
4	-	50	-	54
5	33.7	47	-	57
6	37.8	54	6	12
7	60.3	63	-	32
8	48.8	46	35.1	26
Grades 5-8	45.1	52	29.9	35
State	35.8	46	30.4	33

Gaps Between Subgroups Across the District

Lincoln, like many other districts in the area and in the country, has gaps between subgroups of students. For many years we have paid careful attention to these differences because they often illustrate inequitable outcomes for students. By examining our systems and practices, our goal is to close these gaps in the pursuit of ensuring all of our students are successful. The following charts illustrate seven subgroup comparisons in which gaps are present in our data including:

1. Students with **disabilities** and non-disabled students.
2. **Female-identifying** and **male-identifying** students (the n-sizes for other genders and gender non-conforming students are too small to include). Our male-identifying students have historically performed better than female-identifying students in math and the inverse in ELA, showing gaps for each gender by content.
3. Students with **high-needs** and those without (the category of “high-needs” is an unduplicated count of all students belonging to at least one of the following individual subgroups: students with disabilities, English Learners and former English Learners, or economically disadvantaged students).
4. **Economically disadvantaged** and non-economically disadvantaged students (in Lincoln, “economically disadvantaged” includes almost entirely students who attend the Lincoln School and nearly no students at Hanscom because the measure is based on a student's participation in one or more of the following state-administered programs: the Supplemental Nutrition Assistance Program (SNAP); the Transitional Assistance for Families with Dependent Children (TAFDC); the Department of Children and Families' (DCF) foster care program; and MassHealth (Medicaid); students on HAFB generally do not participate in these state-based programs even though some would qualify as economically disadvantaged under prior measures).
5. Students who have ever been identified as **English Learners** (Ever EL) and those who have never been classified as English Learners (Non EL).
6. For the first (and hopefully only time) we are also able to show the difference between students who took MCAS **remotely** and those who attended and tested **in-person**.
7. Lastly, in 2019 DESE created a subgroup for **military students**; unfortunately, they do not provide a comparative data point with a “non-military” subgroup within our district, so we compared our military students with other military students across the state in order to include this data.

<i>ELA</i>				
<i>Gaps between subgroups</i>	<i>SGP</i>	<i>% M & E</i>	<i>Growth Difference</i>	<i>Achievement Difference</i>
Students with Disabilities	50	27	-5	-44
Non-disabled Students	55	71		
Male-identifying	54.4	55	+1.4	-13
Female-identifying	53	68		
High Needs	49.9	36	-5.5	-38
Not High Needs	55.4	74		
Economically Disadvantaged	42.9	34	-11.5	-31
Non-economically Disadvantaged	54.4	65		
Ever EL*	49.2	35	-4.5	-28
Non EL	53.7	63		
Remote	56.6	72	+5	+12
In-person	51.6	60		
Military students in LPS	45.8	49	+9.3	+1
Military students across MA	36.5	48		

Ever EL includes any student who was ever identified as an English Learner. If we only look at **currently identified EL students, 10% met or exceeded expectations in the spring of 2021, but they did not have an SGP.*

When examining ELA MCAS data from 2019 we find that most gaps remained nearly identical throughout the pandemic except the gap between students who are economically disadvantaged and those who are not; while the mean SGP remained the same (acknowledging that the calculations to determine SGPs was very different across these two years) the gap in percentage of students meeting or exceeding expectations increased substantially from -18 in 2019 to -31 in 2021. Military students had higher levels of growth in ELA at Hanscom during the pandemic compared to military students across the state and even more growth than in 2019 (going from +2.5 in 2019 to +9.3 in 2021).

<i>Math</i>				
<i>Gaps between subgroups</i>	<i>SGP</i>	<i>% M & E</i>	<i>Growth Difference</i>	<i>Achievement Difference</i>
Students with Disabilities	35.8	16	-6.7	-42
Non-disabled Students	42.5	58		
Female-identifying	41.7	48	+1.4	-1
Male-identifying	40.3	49		
High Needs	38.7	25	-4	-35
Not High Needs	42.7	60		
Economically Disadvantaged	36.4	25	-5.2	-27
Non-economically Disadvantaged	41.6	52		
Ever EL*	39.7	34	-1.5	-16
Non EL	41.2	50		
Remote	37.8	50	-3.9	+1
In-person	41.7	49		
Military students in LPS	30	30.7	0	-13.3
Military students across MA	30	44		

Ever EL includes any student who was ever identified as an English Learner. If we only look at **currently identified EL students, 10% met or exceeded expectations in the spring of 2021, but they did not have an SGP.*

Similar to when examining ELA data from 2019, in math we find that most gaps remained relatively consistent throughout the pandemic, though nearly all gaps in growth increased slightly. There are three outliers to highlight:

1. The gap between students who are economically disadvantaged and those who are not in terms of meeting or exceeding expectations grew from -11 in 2019 to -27 in 2021.
2. The gap of students who have ever been identified as English Learners meeting or exceeding expectations shrunk from -23 in 2019 to -16 in 2021.
3. Military students in Lincoln closed the gap throughout the pandemic related to their SGPs in math when compared to military students across the state (in 2019 the gap was -9.2 and in 2021 it was 0), but lost ground on the percentage of students meeting or exceeding expectations as compared to military students across the state (the gap increased from -4 to -13.3 from 2019 to 2021).

We also examine differences in growth and achievement levels when disaggregating MCAS data by race. Please note that DESE suppresses certain racial groups' data due to smaller n-sizes to protect confidentiality and so only five racial groups are listed.

<i>Racial subgroups</i>	<i>SGP</i>	<i>% M&E</i>	<i>Growth difference between students of color and White students</i>		<i>Achievement difference between students of color and White students</i>	
			<i>ELA</i>	<i>Math</i>	<i>ELA</i>	<i>Math</i>
Asian - ELA	-	85	-	-	+5	+35
Asian - Math	-	88				
Black - ELA	45.9	42	-7.6	-8.3	-28	-28
Black - Math	33.1	25				
Latinx - ELA	46.4	42	-7.1	-5	-28	-22
Latinx - Math	36.4	31				
Multi-race, non-Latinx - ELA	52.4	65	-1.1	+3.6	-5	-15
Multi-race, non-Latinx - Math	45	68				
White - ELA	53.5	70				
White - Math	41.4	53				

When examining MCAS data from 2019 we find that most racial gaps remained stagnant during the pandemic. It is especially troubling to see the significant difference between math achievement scores, which have the widest range and differential amongst racial groups.

Gaps Between Subgroups on Each Campus

Often educators and families want to view campus-based data that disaggregates subgroups since our campuses have different populations. Below are three charts for Lincoln and three charts for Hanscom that replicate the district data.

<i>Lincoln Campus ELA</i>				
<i>Gaps between subgroups</i>	<i>SGP</i>	<i>% M & E</i>	<i>Growth Difference</i>	<i>Achievement Difference</i>
Students with Disabilities	49.2	39	-8.2	-41
Non-disabled Students	57.4	80		
Male-identifying	54.4	66	-2.4	-12
Female-identifying	56.8	78		
High Needs	51	45	-7.1	-41
Not High Needs	58.1	86		
Economically Disadvantaged	43.9	34	-13.9	-45
Non-economically Disadvantaged	57.8	79		
Remote	57.7	80	+2.5	+10
In-person	55.2	70		

<i>Lincoln Campus Math</i>				
<i>Gaps between subgroups</i>	<i>SGP</i>	<i>% M & E</i>	<i>Growth Difference</i>	<i>Achievement Difference</i>
Students with Disabilities	37.3	28	-11.1	-47
Non-disabled Students	48.4	75		
Female-identifying	45.8	65	+0.3	-1
Male-identifying	46.1	66		
High Needs	39.7	39	-9.6	-40
Not High Needs	49.3	79		
Economically Disadvantaged	37.2	29	-10.3	-44
Non-economically Disadvantaged	47.5	73		
Remote	49	70	+3.6	+5
In-person	45.4	65		

<i>Lincoln campus</i>			<i>Growth difference between students of color and White students</i>		<i>Achievement difference between students of color and White students</i>	
<i>Racial subgroups</i>	<i>SGP</i>	<i>% M&E</i>	<i>ELA</i>	<i>Math</i>	<i>ELA</i>	<i>Math</i>
Asian - ELA	-	85	-	-	+4	+20
Asian - Math	-	90				
Black - ELA	43	34	-14	-6.8	-47	-41
Black - Math	38.1	29				
Latinx - ELA	-	48	-	-	-33	-28
Latinx - Math	-	42				
Multi-race, non-Latinx - ELA	-	77	-	-	-4	+19
Multi-race, non-Latinx - Math	-	89				
White - ELA	57	81				
White - Math	44.9	70				

<i>Hanscom Campus ELA</i>				
<i>Gaps between subgroups</i>	<i>SGP</i>	<i>% M & E</i>	<i>Growth Difference</i>	<i>Achievement Difference</i>
Students with Disabilities	-	22	-	-39
Non-disabled Students	47.6	61		
Female-identifying	46.6	58	-3.4	-12
Male-identifying	43.2	46		
High Needs	42.1	29	-3.9	-32
Not High Needs	46	61		
Remote	-	74	-	+26
In-person	43.1	48		

<i>Hanscom Campus Math</i>				
<i>Gaps between subgroups</i>	<i>SGP</i>	<i>% M & E</i>	<i>Growth Difference</i>	<i>Achievement Difference</i>
Students with Disabilities	-	9	-	-34
Non-disabled Students	29.3	43		
Female-identifying	33	29	+7	-11
Male-identifying	26	40		
High Needs	-	14	-	-29
Not High Needs	28.1	43		
Remote	-	33	-	-2
In-person	32.2	35		

<i>Hanscom campus</i>			<i>Growth difference between students of color and White students</i>		<i>Achievement difference between students of color and White students</i>	
<i>Racial subgroups</i>	<i>SGP</i>	<i>% M&E</i>	<i>ELA</i>	<i>Math</i>	<i>ELA</i>	<i>Math</i>
Black - ELA	-	69	-	-	+13	-12
Black - Math	-	25				
Latinx - ELA	44.7	41	+1.1	-	-15	-4
Latinx - Math	-	33				
Multi-race, non-Latinx - ELA	-	50	-	-	-6	+2
Multi-race, non-Latinx - Math	-	39				
White - ELA	43.6	56				
White - Math	30.8	37				

Closing gaps between subgroups so that all students meet expectations is more important than perhaps any other achievement indicator related to MCAS. This fall our literacy and math specialists led new approaches to gathering screening and diagnostic data on every student in K-5 to better understand each child's foundational skills. They worked with principals to identify which students in each grade would most benefit from targeted interventions to support their literacy or numeracy. They are eager to work in small groups and individually with students to support their growth since they all acted as classroom teachers in the 2020-21 school year and we were unable to provide

general education interventions for students. In the middle school grades an office hours block was expanded in the schedule based on positive results during the last school year. This is an opportunity for 6th-8th graders to get support in areas they most need twice a week. Special educators continue to provide individual academic goals through specialized instruction to support student progress and increase access to the general education curriculum. All of our faculty are growing their understanding of deeper learning to engage all students in relevant, meaningful, culturally responsive tasks and are working on strengthening the sense of belonging students have to their classrooms and school, knowing that both of these components are central to student learning and success. We believe the combination of these efforts is what our students most need to be successful--not just on MCAS, but in life.