

DATE: March 23, 2021

TO: Board of Trustees

FROM: Darrel Robertson, Superintendent of Schools

SUBJECT: Strategic Plan Update: Literacy and Numeracy

ORIGINATOR: Nancy Petersen, Managing Director, Strategic Division Supports

RESOURCE

STAFF: Marnie Beaudoin, Cathy Campbell, Patti Christensen, Husna Foda, Rachel Foley, Amanda Forster, Kim Gerke, Amanda Lau, Ron MacNeil, Leona Morrison, Bob Morter, Ann Parker, Kent Pharis, Elisha Pinter, Suzanne Prefontaine, Rita Sarrate, Soleil Surette, Tammy Thero-Soto, Marian Thompson, Joy Wicks, Jane Williams, Mark Wesner, Greg Wondga, Liz Yule

ISSUE

The purpose of this Strategic Plan Update Report is to provide the Board of Trustees with an overview of the Division's comprehensive approach in support of literacy and numeracy. This approach is framed within a Plan-Act-Observe cycle, which is used in this report to discuss the Division's intentional efforts to support literacy and numeracy learning:

- Plan: Initiatives and professional learning (PL) in support of literacy and numeracy.
- Act: Division strategies, resources, and interventions targeted to literacy and numeracy.
- Observe: Five-year analysis of the Provincial and Division assessments.

BACKGROUND

In 2018, Edmonton Public Schools formally reaffirmed the District Strategic Plan for the 2018-2022 term. The District Strategic Plan has three priority areas with supporting goals and outcomes. The plan provides common direction and alignment between the work of the Board of Trustees, the Superintendent of Schools and Division staff. The plan serves as the foundation for a Division culture of evidence-based decision making, assurance and accountability.

To demonstrate the Division's commitment to transparency and accountability, Strategic Plan Update reports were introduced in 2016–2017 as an extension of the Annual Education Results Report (AERR). The reports are intended to provide the Board of Trustees with detailed progress towards the goals and outcomes of our Strategic Plan.

CURRENT SITUATION

This Strategic Plan Update report highlights the importance of the Division's comprehensive approach to high quality teaching and learning in support of literacy and numeracy and the intentionality in its efforts to fulfill Priority 1, Goal 2 of the Strategic Plan, which states "more students [will] demonstrate growth and achieve learning outcomes, with a specific focus on literacy and numeracy".

KEY POINTS

This Strategic Plan Update Report provides the Board of Trustees with an overview of the Division's comprehensive approach in support of literacy and numeracy.

ATTACHMENTS and APPENDICES

ATTACHMENT I Strategic Plan Update: Literacy and Numeracy

NP:mh



Strategic Plan Update:

Literacy and Numeracy

March 23, 2021

INTRODUCTION

Literacy is defined by Alberta Education as the ability, confidence and willingness to engage with language to acquire, construct and communicate meaning in all aspects of daily living, while numeracy is defined as the ability, confidence and willingness to engage with quantitative and spatial information to make informed decisions in all aspects of daily living. Both are foundational to successful living, learning and participation in today's society (Alberta Education, n.d.). Achievement in literacy and numeracy are key determinants of educational outcomes. Higher levels of achievement in Kindergarten to Grade 12 education are associated with greater school engagement, high school completion and more successful transitions to post-secondary education or the world of work (Rothman and McMillian, 2003). Furthermore, an OECD Report (2013) found that proficiency in literacy and numeracy are positively associated with an individual's economic and social well-being throughout life. Higher levels of proficiency are associated with higher employment and earnings, better health outcomes and higher civic engagement (OECD, 2013). Additional information about the importance of literacy and numeracy can be found in the February 11, 2020, [Strategic Plan Update: Literacy](#) and March 10, 2020, [Strategic Plan Update: Numeracy](#) respectively.

The Division recognizes the importance of literacy and numeracy and is intentional in its efforts to fulfill Priority 1, Goal 2 of the Strategic Plan, which states "more students [will] demonstrate growth and achieve learning outcomes, with a specific focus on literacy and numeracy". The purpose of this Strategic Plan Update Report is to provide the Board of Trustees with an overview of the Division's comprehensive approach used to support literacy and numeracy and the results of a multi-year look at key performance indicators related to literacy and numeracy.

EDMONTON PUBLIC SCHOOL'S COMPREHENSIVE APPROACH

Student success and growth is a collective responsibility; this shared responsibility serves as the foundation to the Division's approach to support student literacy and numeracy. The Division's comprehensive approach is easily framed within a Plan-Act-Observe cycle. This cycle will be used as the framework to describe the Division's efforts in support of literacy and numeracy learning for this report. The following topics will be discussed at the different stages of the cycle:

- Plan: Initiatives and professional learning (PL) in support of literacy and numeracy.
- Act: Division strategies, resources and interventions targeted to literacy and numeracy.
- Observe: Five-year analysis of the Provincial and Division assessments.

Plan

Over the past several years there have been several Division-wide initiatives developed intentionally to support capacity in the areas of literacy and numeracy teaching and learning. Two initiatives that will be highlighted in this report are the Division-wide Focus on Reading (DFR) and the Math Teacher Collaboration Committee (TCC).

The DFR was initiated in the 2015-2016 school year with the intention to further develop and implement practical and effective resources and instructional practices in the area of reading. Since its inception, principals, teachers and staff from central have worked collaboratively in support of a body of practice that reflects a valuing of teacher expertise and professional judgement, includes a strong element of individual and collective accountability and supports the building of teaching capacity for determining students' reading levels and supporting improved student reading through programming and intervention. As part of the DFR there are materials that help assess reading outcomes, inform planning and support working with students and families. The DFR has resources to support literacy learning for Kindergarten to Grade 12.

The Math TCC was hosted by the Superintendent in February 2018 to provide grassroots direction to inform the work of improving mathematical achievement Division-wide. Following the TCC, a committee comprised of 32 teachers and eight principals from across catchments and grade levels, as well as four Division teacher consultants was formed. Using teacher voice and recommendations from the Math TCC as a starting point, this committee helped to identify or create the following resources to support the teaching of mathematics across classrooms.

- **First Steps in Mathematics: an approach to teaching mathematics developed by Pearson Education:** a developmental framework that describes phases of thinking that students progress through as they learn key mathematical concepts. It supports teachers in monitoring and assessing students' mathematics learning and provides links to developmentally appropriate learning activities. The work of the Math TCC supported teachers in exploring this resource and to date in the 2020-2021 school year over 500 school staff have attended First Steps in Mathematics PL.
- **Leaps and Bounds: through Nelson Publishing:** an intervention resource that includes diagnostic assessments and differentiated instruction activities to address gaps in student understanding.
- **A Part A Question Bank** (reflecting the no calculator part of the Grades 6 and 9 Math PATs) for Grades 4-9, that aligns with curriculum and is a tool that teachers can use in identifying where students may need additional practice or instruction in relation to learning basic facts and computational skills.
- **A Numeracy Pyramid of Intervention** modeled after the Literacy Pyramid of Intervention resource. The numeracy pyramid is still under development and reflects the collaborative efforts of staff from Curriculum and Learning Supports and Specialized Learning Supports. This resource addresses numeracy learning across all three tiers of the pyramid.

A critical component in supporting student literacy and numeracy learning is the ongoing development of staff capacity. Capacity building occurs at multiple levels in the Division (i.e. school, catchment and Division) and in various formats (e.g. coaching, consultation, professional learning and modeling). Regardless of its format, efforts to build staff capacity are responsive to the professional growth of staff and the learning needs of students. The following is an extensive list of professional learning supported by the Division related to literacy and numeracy:

Table 1. Examples Division Supported Literacy and Numeracy Professional Learning

Literacy	<ul style="list-style-type: none"> ● Literacy Foundations for Kindergarten - Grade 12 ● Building on Foundations for Reading and Writing ● Reading and Writing Workshop ● Supporting English Language Learners ● Literacy Instruction for Students with Special Needs ● Emergent Literacy for Students with Significant Disabilities and Complex Communication Needs ● Strategies for Readers Needing Support in Junior High and High Schools ● Emergent Literacy for the Early Years ● Phonological Awareness for Emergent and Early Readers ● Reading Across Content Areas ● Using Workshop Methods in the Content Areas ● Administering and Interpreting Fountas and Pinnell Benchmark Assessment System ● Deepening Literacy Development Through Inquiry and Project Based Learning ● Supporting Below Grade Level Readers And Writers In The Classroom (Lucy Calkins) 		
Numeracy	<table border="0"> <tr> <td> <ul style="list-style-type: none"> ● First Steps in Math Series ● A Guided Approach to Math ● Building on a Guided Approach to Math ● Foundations of Mathematics ● Math in Makerspaces? Yes! ● Mathematics and the Literacy Progressions </td><td> <ul style="list-style-type: none"> ● Power of Ten ● The Power of Problem Solving ● Writing in the Math Classroom ● Collaboratively Creating Rich Math Tasks ● Foundation for Secondary Mathematics ● Preparing for Success for the Grade 9 PAT </td></tr> </table>	<ul style="list-style-type: none"> ● First Steps in Math Series ● A Guided Approach to Math ● Building on a Guided Approach to Math ● Foundations of Mathematics ● Math in Makerspaces? Yes! ● Mathematics and the Literacy Progressions 	<ul style="list-style-type: none"> ● Power of Ten ● The Power of Problem Solving ● Writing in the Math Classroom ● Collaboratively Creating Rich Math Tasks ● Foundation for Secondary Mathematics ● Preparing for Success for the Grade 9 PAT
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Act

Across the Division teachers identify high quality teaching and programming to support their students' literacy and numeracy learning. To ensure strategies and supports are responsive to the unique learning needs of every student,

programming is informed through the lens of a Pyramid of Intervention. The Pyramid of Intervention represents three tiers in support of student learning:

- **Tier 1-Universal Strategies:** a range of universal instructional strategies and classroom supports that help all students advance in their development.
- **Tier 2-Targeted Strategies:** intentional, targeted supports provided by the classroom teacher that are more specific to small groups or individual learners.
- **Tier 3-Specialized Strategies:** individual supports such as specialized assessments and strategies tailored to the unique learning needs of an individual student.

Teachers have a range of approaches and strategies that they draw upon when working with their students. The following are examples of some of the many ways teachers support literacy and numeracy learning. These examples fall across all three tiers of the Pyramid of Intervention.

	Literacy	Numeracy
Approaches and Strategies	<ul style="list-style-type: none"> ● Heggerty Phonological and Phonemic Awareness Program ● Jolly Phonics (phonics and phonological awareness) ● Flyleaf decodable texts ● Empower Reading ● Guided Reading ● Right to Read ● Reading Assistant ● Fast ForWord ● Structured Literacy ● Orton Gillingham 	<ul style="list-style-type: none"> ● Math Talks ● Jump Math ● Guided Math ● First Steps in Mathematics ● Focused attention to vocabulary (math) ● Mathology ● Math manipulatives ● Math centres

Using data, a diagnostic approach is used in schools to determine where students are at in their skill development. From there instructional and programming strategies and approaches are determined to best meet the learning needs of students. This differentiation of instruction can be very targeted, reflecting the learning needs of the whole class, a group of students or responsive to the needs of individual students.

Additionally, teachers have access to hundreds of Division-created literacy and numeracy resources that cover a range of purposes, grade levels and languages. This year’s work has included the development of K-9 Teacher Support Packs for English Language Arts, Social Studies, Science and Math. The development of the Teacher Support Packs has been informed by research-based resources such as First Steps in Mathematics; a resource that was foundational to identifying and sequencing mathematical concepts in a straightforward manner. These resources have been widely used by Division teachers, with tracking data indicating that the resources have been accessed 566,726 times to date this school year.

Along with high quality teaching and learning strategies, approaches and resources, interventions may be offered to students identified as performing below grade level. Teachers can select from many different intervention and diagnostic tools in reading and mathematics to best suit their context and responsiveness to the needs of their students. Interventions help support students who are below grade level to sustain more growth over the period of the intervention than they would through regular classroom instruction. They can serve as a powerful tool to support student growth and success. The following are examples of the range of interventions based on evidence-informed research being used across Division schools:

Table 2. Reading and Math Interventions

Literacy	Reading Recovery is a short-term, preventative early literacy intervention of one-to-one tutoring for the lowest achieving Grade 1 students to get reading and writing underway. It is designed to prevent ongoing literacy challenges and close the student achievement gap.
	Levelled Literacy Intervention (LLI) is a small-group pull out literacy intervention program for below-grade readers in Grades 1-9.
	Middle Years Literacy Intervention (MYLI) is a pull out small-group literacy intervention program designed to assist students in Grades 3-9 who are at-risk in their literacy learning.
	Adapted Literacy Intervention (ALI) is a small group intervention in French Immersion and bilingual programs designed to support the lowest achieving students in Grades 1-9 in the target language.
	Differentiated Literacy Programming is available in Grades 10 to 12 through Locally Developed Courses such as Reading 15, 25 and Academic Achievement Through English Language Development 15, 25, 35.
	High School Literacy Intervention (HSLI) is a high school literacy intervention approach currently being explored; HSLI is modeled after other Division literacy interventions and is supported through the work of Curriculum and Learning Supports as high school teachers implement this developing approach with students.
	Referral and Support from Specialized Learning Supports: when schools have tried a range of tier one and/or tier two strategies and interventions and a student is not progressing as expected in their literacy or numeracy growth, schools are able to access the expertise and support of Division reading specialists and psychologists who will do a review of the student's learning and determine what additional specialized assessment may be needed. This work will result in further programming recommendations for the students. The work of SLS generally falls into tier two and three of the Pyramid of Intervention.
Numeracy	Leaps and Bounds (Nelson) is an intervention resource that includes diagnostic assessments and differentiated instructional resources to address gaps in student learning.

With respect to the importance and impact of these interventions, the following charts provide a multi-year summary of student growth as a result of Reading Recovery, LLI and MYLI. This data represents Division schools that participate in a centrally supported cohort group intended to build capacity and monitor the effectiveness of these interventions. The Division has built teacher capacity around both LLI and MYLI and there would be other schools implementing LLI and MYLI interventions as a tier two or tier three response to student reading growth that are not reflected in this data.

Table 3. Reading Recovery

	2018-19	2017-18	2016-17	2015-16
Number of students	43	35	42	42
Average reading growth (months)	7.8	7.3	7.6	8.2
Average number of lessons	74	69	71	68
Extrapolated reading growth in five months of interventions (months)	6.9	7.6	7.4	8.9
Extrapolated reading growth in four months of interventions (months)	5.5	6	5.9	7.1

Table 4. Levelled Literacy Intervention

	2018-19	2017-18	2016-17	2015-16	2014-15
Number of students	1,067	935	722	561	511
Average reading growth (months)	7.7	6.7	7	6.4	6.7
Average number of lessons	44	41	43	48	49
Extrapolated reading growth in four months of interventions (months)	8	7	7.2	6.8	6.7

Table 5. Middle Years Literacy Intervention

	2018-19	2017-18	2016-17	2015-16	2014-15
Number of students	114	101	61	98	110
Average reading growth (months)	13	8	9	11	13
Average number of lessons	46	38	63	48	47
Extrapolated reading growth in four months of intervention (months)	11	9.8	7	10.8	12.2

Observe

The Division uses assessments to guide instruction, improve learning, meet students' individual educational needs, as well as to measure and report on student achievement and growth. With the disruption of assessment for the 2019-2020 school year due to the pandemic, the Division approached analyzing literacy and numeracy achievement through the lens of a historical, multi-year look at our literacy and numeracy data.

A preliminary look at this data showed an emerging pattern of decline across some of the data sets. This led to a more comprehensive dive into literacy and numeracy achievement to better understand how students were doing and identify which students were thriving and which students were at-risk. This deeper look included triangulating

achievement data with the Division’s High Social Vulnerability data linked to school enrolment. The following set of charts and analysis is a high level summary of findings from this work.

The Division uses both provincial assessments (i.e., Provincial Achievement Tests and Diplomas) and local assessments (i.e., Highest Level of Achievement Test, Benchmark Assessment System and Math Intervention/Programming Instrument) to support and monitor literacy and numeracy teaching and learning. The following table provides a descriptor of each of these three local assessment tools.

Table 6. Local Assessments

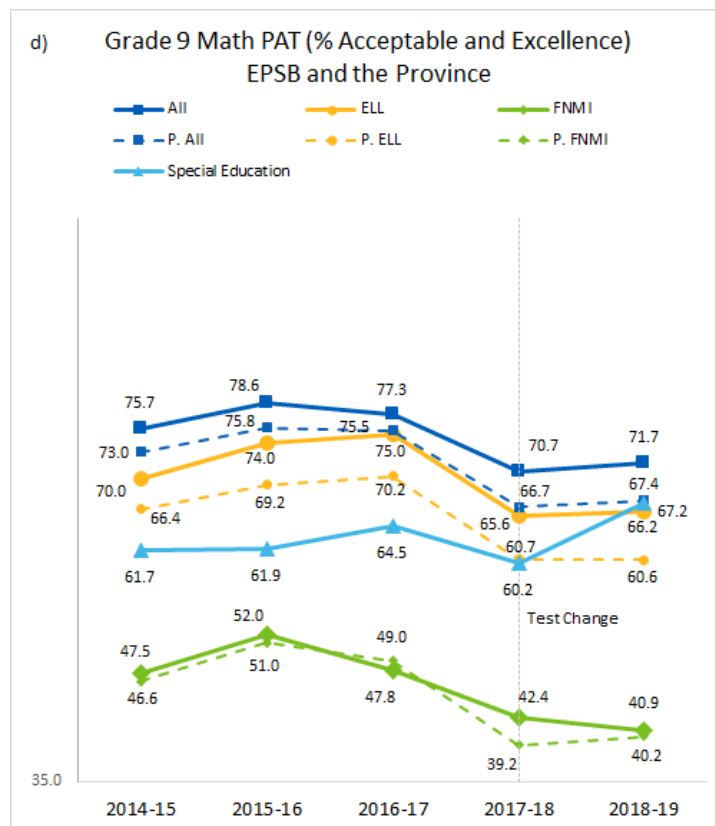
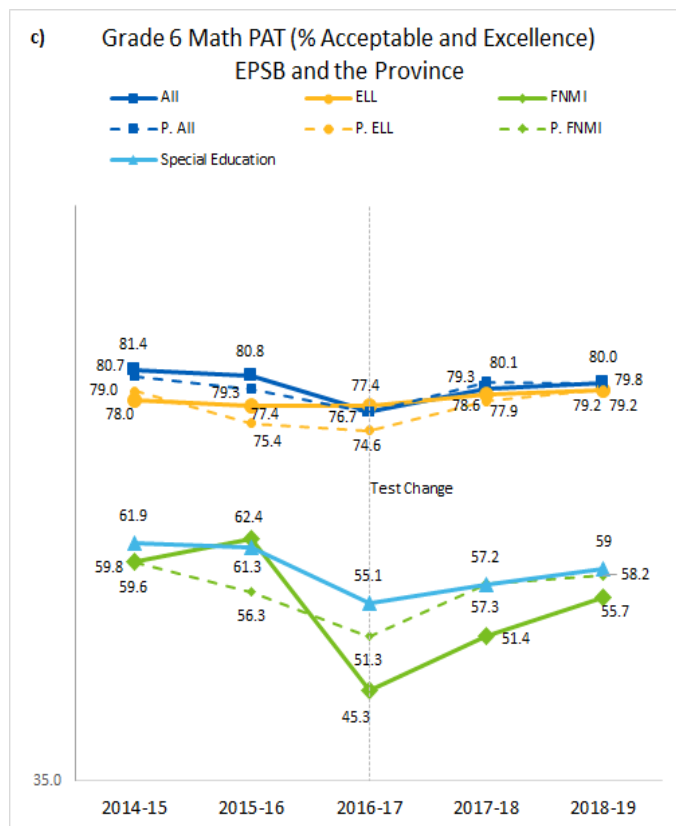
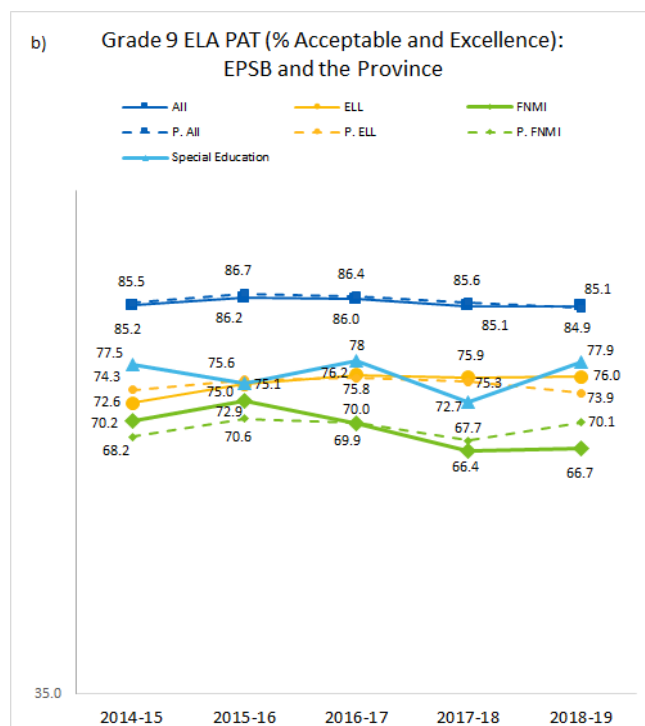
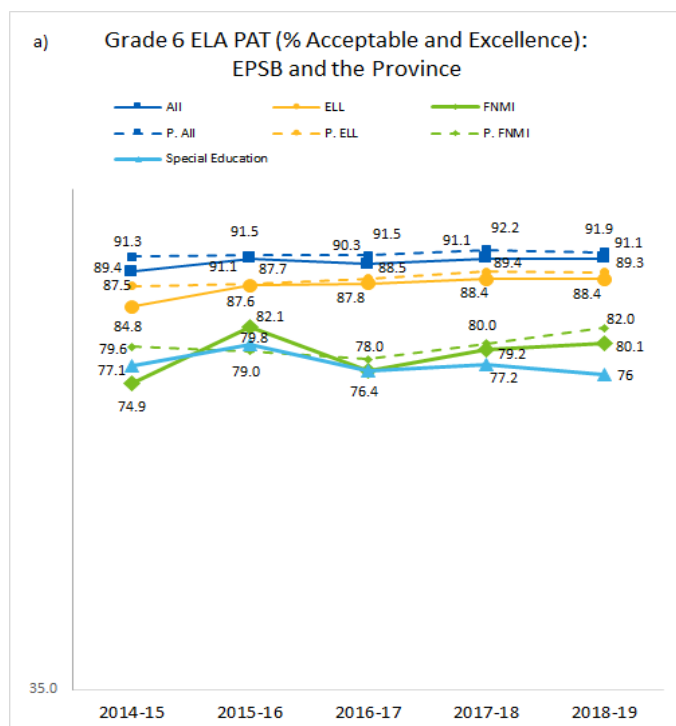
Literacy	<p>Highest Level Achievement Test (HLAT): an annually administered Division assessment used to measure a student’s progress in Grades 1 to 9 against the Alberta English Language Arts program of studies in the area of writing.</p> <p>Benchmark Assessment System (BAS): a tool created by Fountas and Pinnell. The Division uses the BAS to assess Grades 1 to 3 students learning in-person and reading below grade level. BAS results are used to inform programming and interventions for individual students and comparison of the fall and spring BAS administration is used to monitor student growth in literacy. In 2020-2021, the use of BAS has been expanded to include Grades 4 to 6 students learning in-person and reading below grade level.</p>
Numeracy	<p>Math Intervention/Programming Instrument (MIPI): a Division assessment tool used to assist with planning for and implementing interventions to support individual students from Grades 2-10. The tool has been designed to reflect selected learning outcomes from the previous grade based on the Alberta Program of Studies.</p>

A five-year analysis of both provincial and Division-level literacy and numeracy assessments are provided below. The analyses includes the following ways of looking at specific cohorts of Division students, with cohorts being compared to their provincial counterpart where there is provincial data available:

- All Division students (blue square).
- Students with special education coding¹ (turquoise triangle).
- Self-Identified First Nation, Métis and Inuit students (FNMI) (green diamond).
- English Language Learners (ELL) (yellow circle).
- Provincial comparison is the dashed line of the same colour.

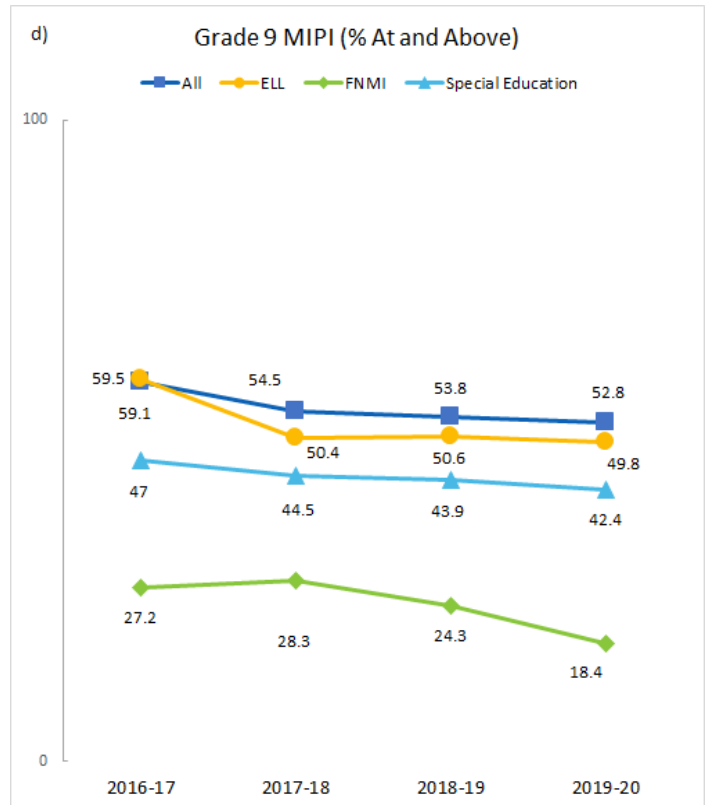
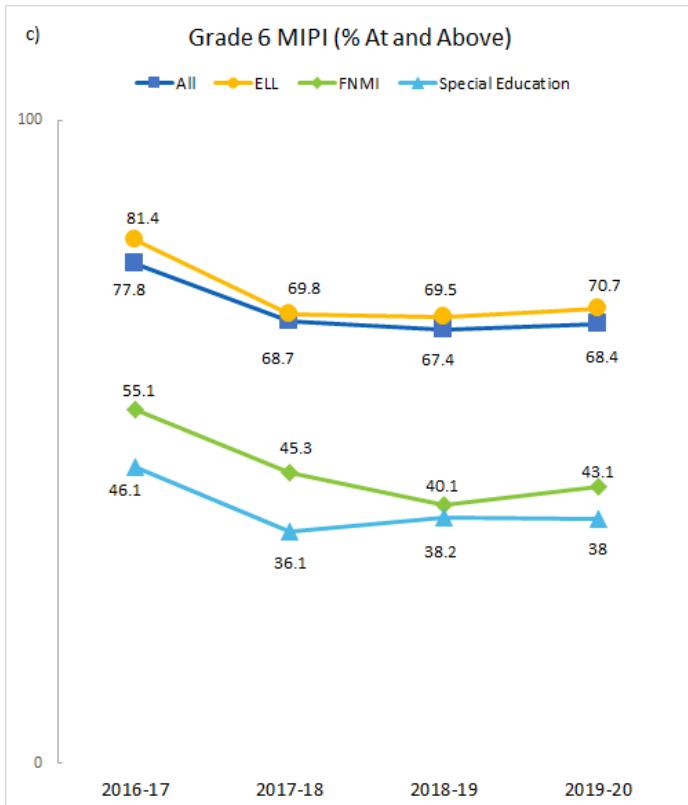
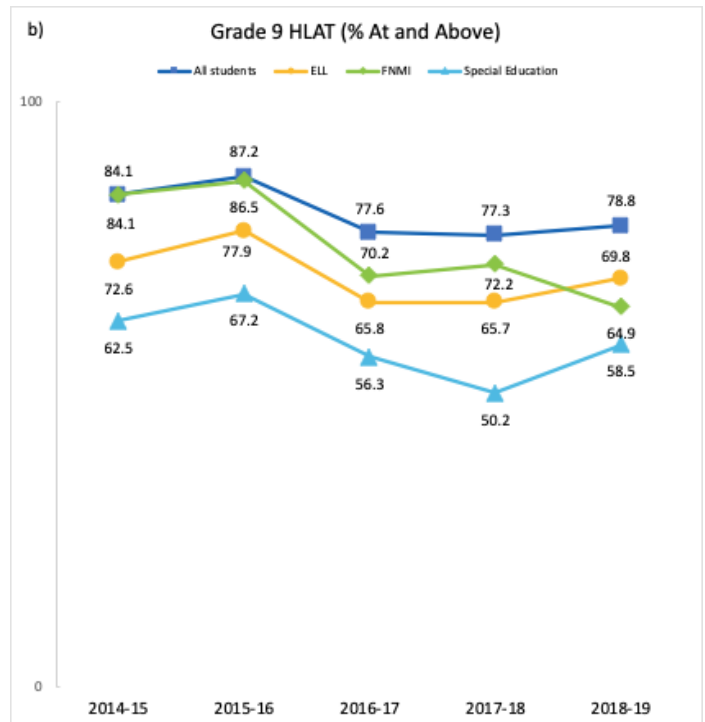
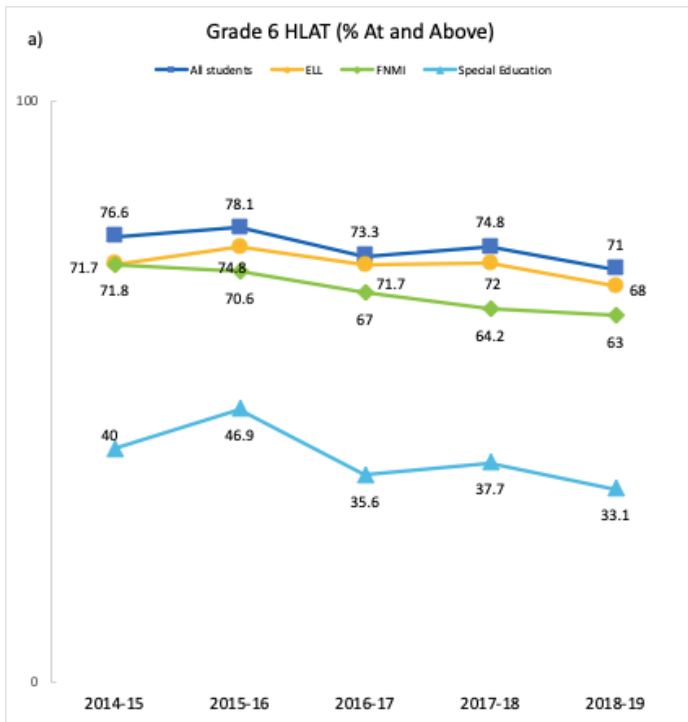
¹ This includes students coded as Gifted and Talented (Code 80)

Graphs 1a-d. Grades 6 and 9 English Language Arts (ELA) Math PATs vs Provincial Achievement²

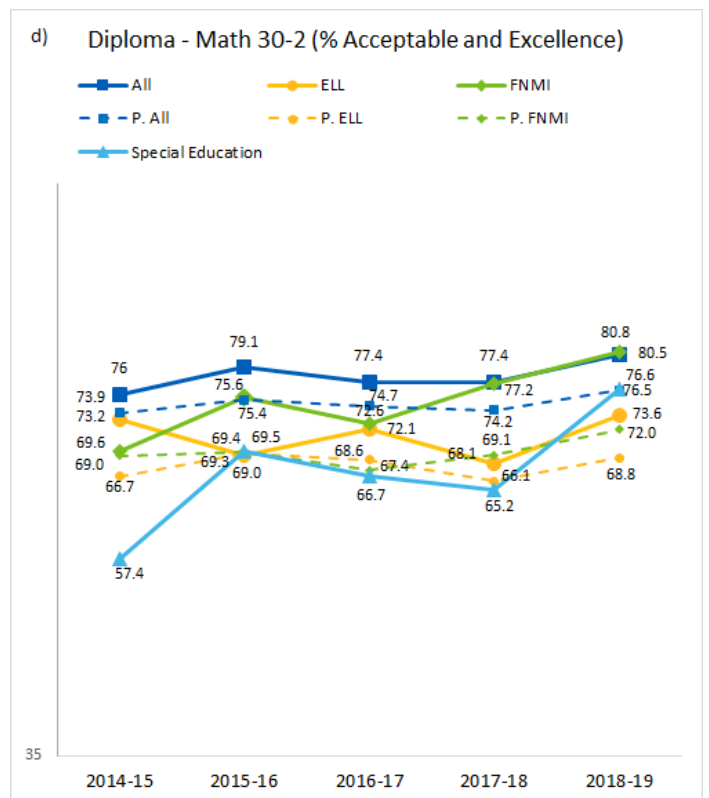
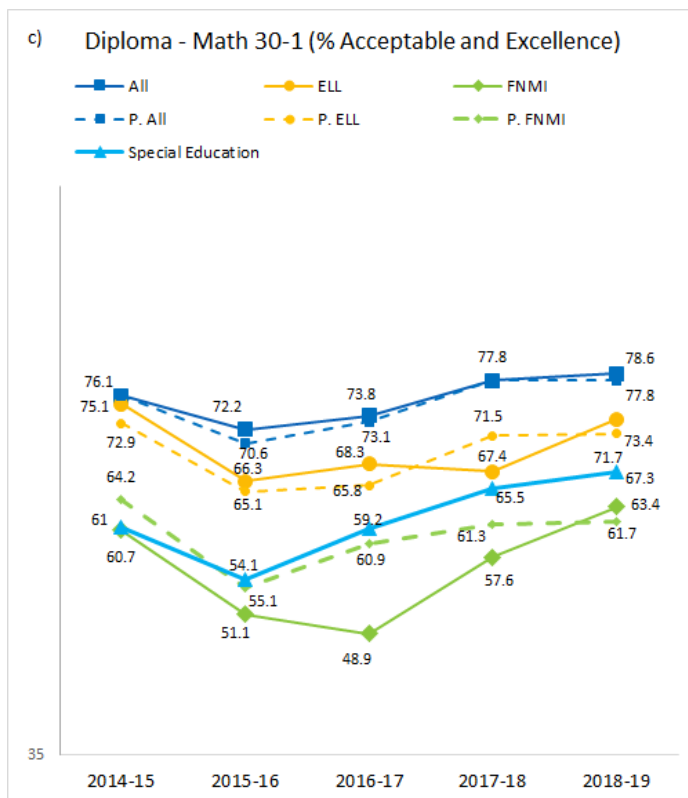
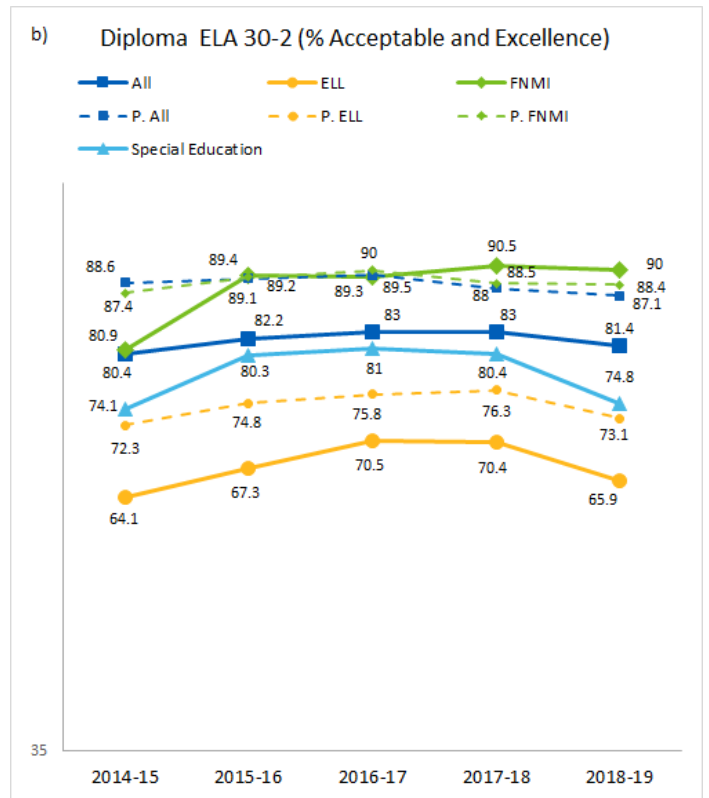
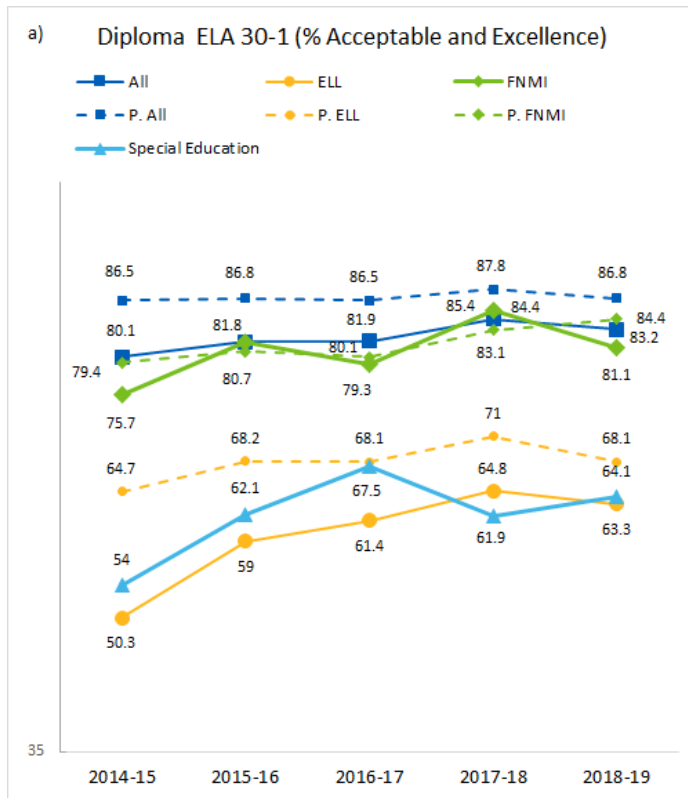


² In 2016-2017 and 2017-2018, Alberta Education added Part A component to the Grades 6 and 9 Math PAT respectively. This addition is indicated in the graphs as "Test Change." No provincial comparator is available for students with special education coding.

Graph 2a-d. Grades 6 and 9 HLAT and MIPI



Graph 3a-d. English Language Arts (ELA) and Math 30-1 and 30-2 Diplomas



This initial look at Division data showed some areas of decline over the five-year period and though the achievement of the Division tends to parallel that of the province, this trending towards decline was concerning. Administration took the analysis of the data one step further and looked at student achievement within the context of high social vulnerability.

There is a significant body of research demonstrating that socioeconomic status is a major predictor in educational achievement (Dietrichson, Bøg, Filges, and Jørgensen, 2017). Thus, to gain a better understanding of Division results, a more in-depth analysis was completed using the lens of high social vulnerability, a measure related to the socioeconomic status of schools based on the demographic profile of their student enrolment.

One way the Division defines and examines high social vulnerability is through the Social Vulnerability Index (SVI). The SVI is a research and evidence-based measure that takes into account three factors that research has demonstrated have a direct impact on school success:

- Student mobility (Division data).
- Median family income (Census data).
- Lone parent family status (Census data).

To inform a better understanding of the impact of high social vulnerability within the Division, these three factors are applied to the demographic profile of Division students. Based on this information, all Division schools are then ranked, resulting in a listing of Division schools from the most to least socially vulnerable; this list is calculated on an annual basis. The information from the list is used to determine the allocation of provincial funding targeted to address high social vulnerability; annually this funding is provided to the Division's 60 most socially vulnerable schools. Additionally, information from the list is used to help inform decisions around other community supports and partnerships intended to support students who are at-risk.

The following analyses use the SVI rankings from the 2018-2019 school year. To frame the analysis, the Division schools were divided up into four school groupings:

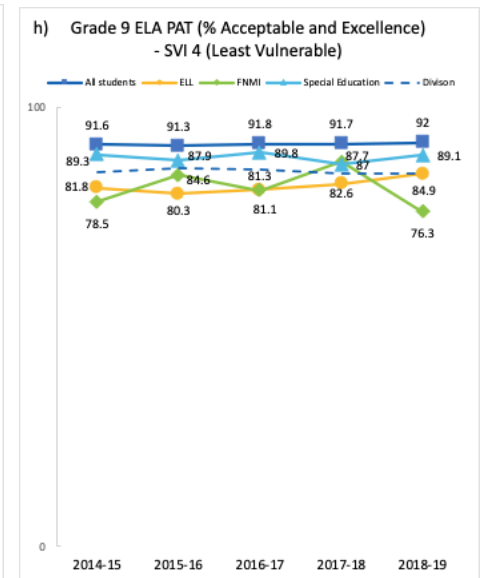
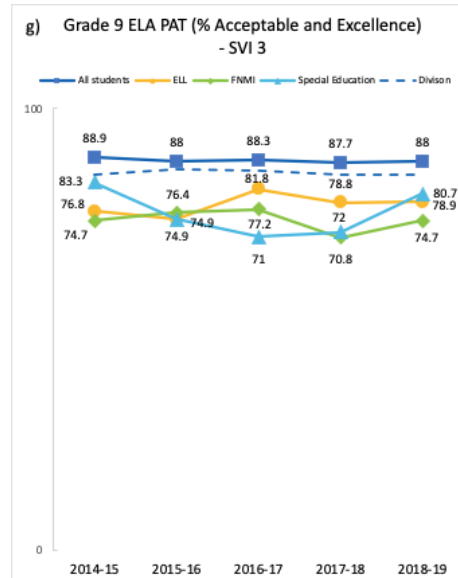
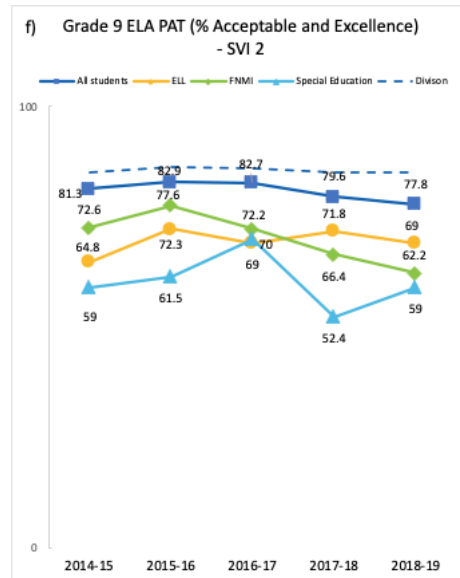
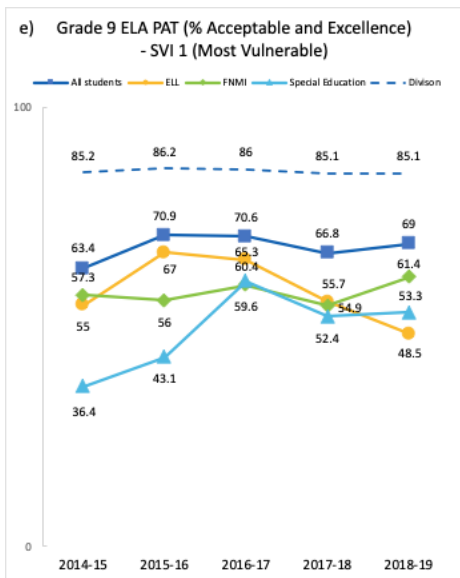
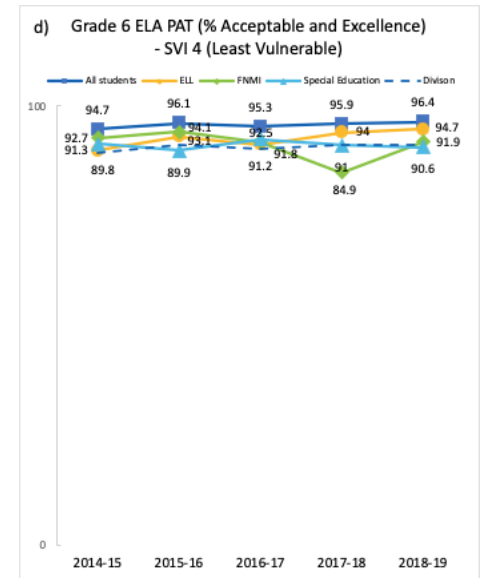
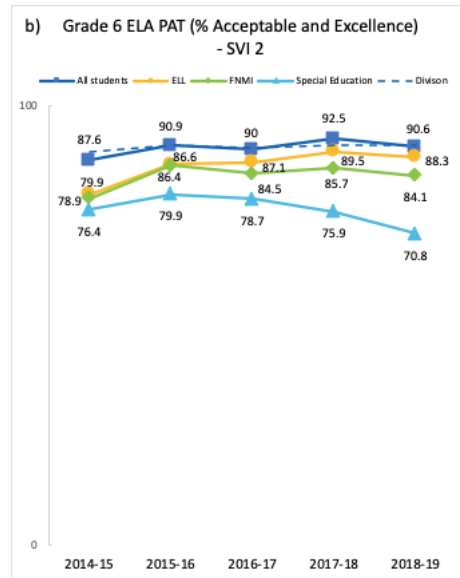
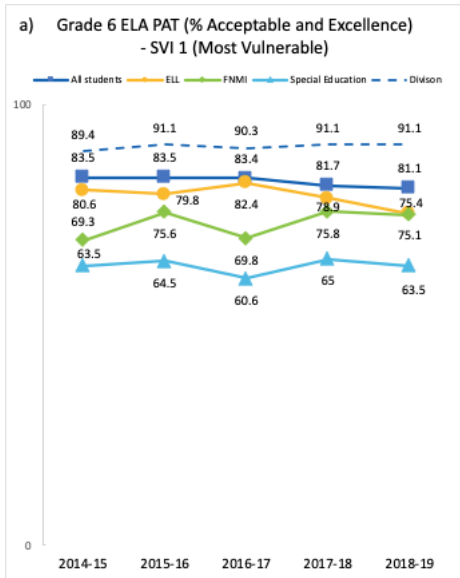
- SVI 1 includes the top 60 schools on the 2018-2019 High Social Vulnerability List (i.e. the most vulnerable).
- SVI 2 makes up one third of the remaining Division schools based on the 2018-2019 list.
- SVI 3 makes up the next third of remaining Division schools based on the 2018-2019 list.
- SVI 4 makes up the final third of remaining Division schools based on the 2018-2019 list (this final group represents the Division's least socially vulnerable students).

Similar to the analyses above, the academic achievement results for the SVI groups of schools were charted over a five-year period; and as for above, these results were again broken out by the following cohorts of students:

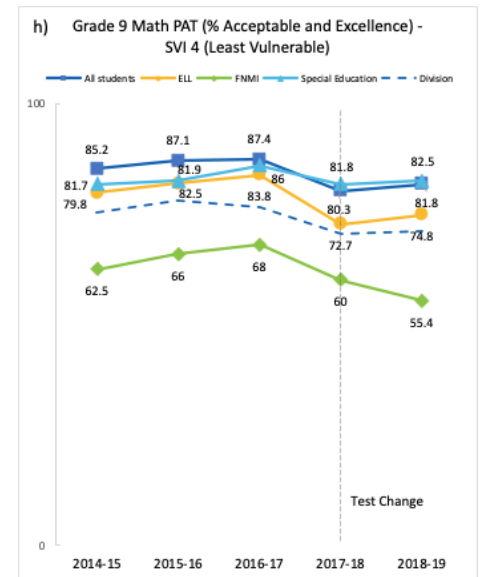
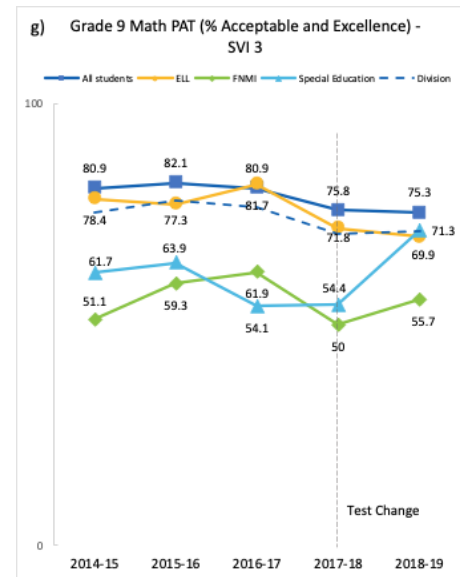
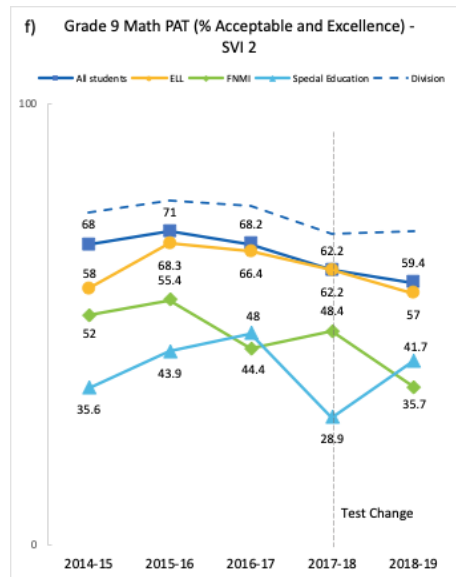
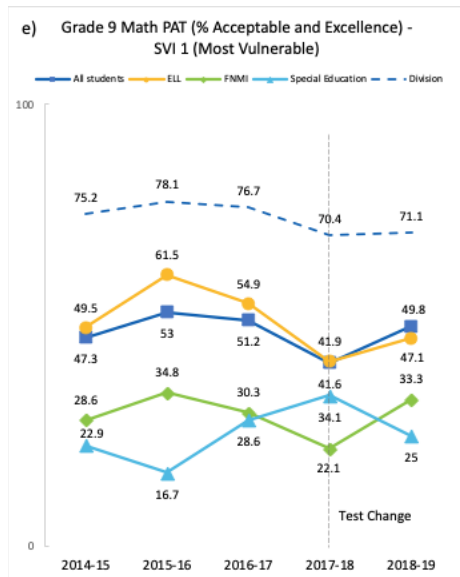
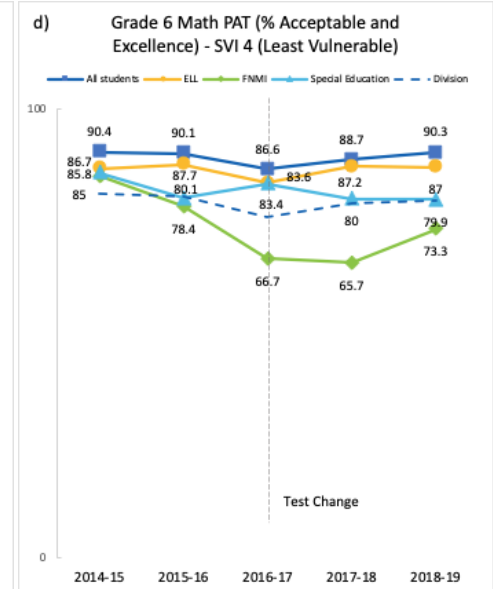
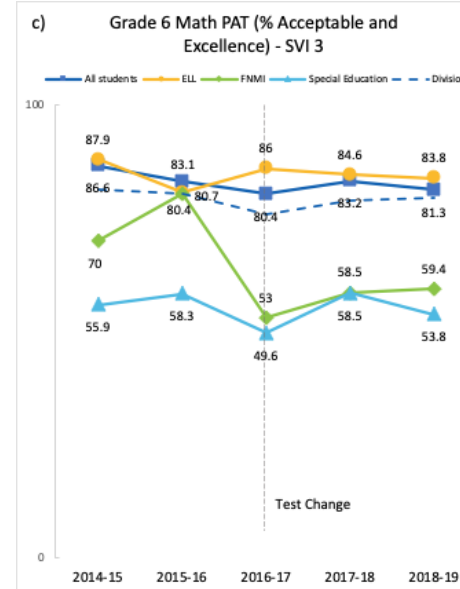
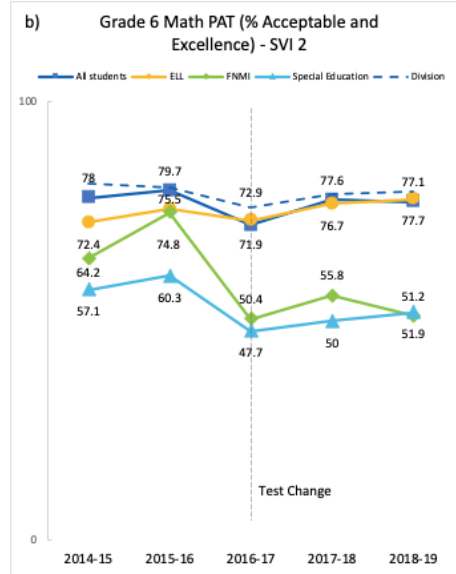
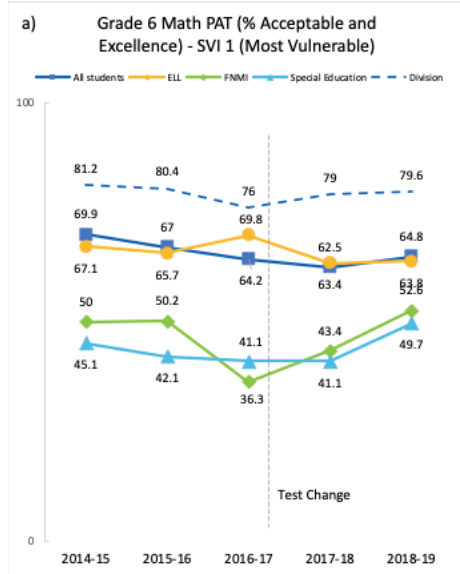
- All students in the SVI grouping (blue square).
- Students with special education coding (turquoise triangle).
- Self-Identified First Nation, Métis and Inuit students (FNMI) (green diamond).
- English Language Learners (ELL) (yellow circle).

To provide further context to these results, the achievement of all Division students irrespective of their SVI is also included (dashed blue line).

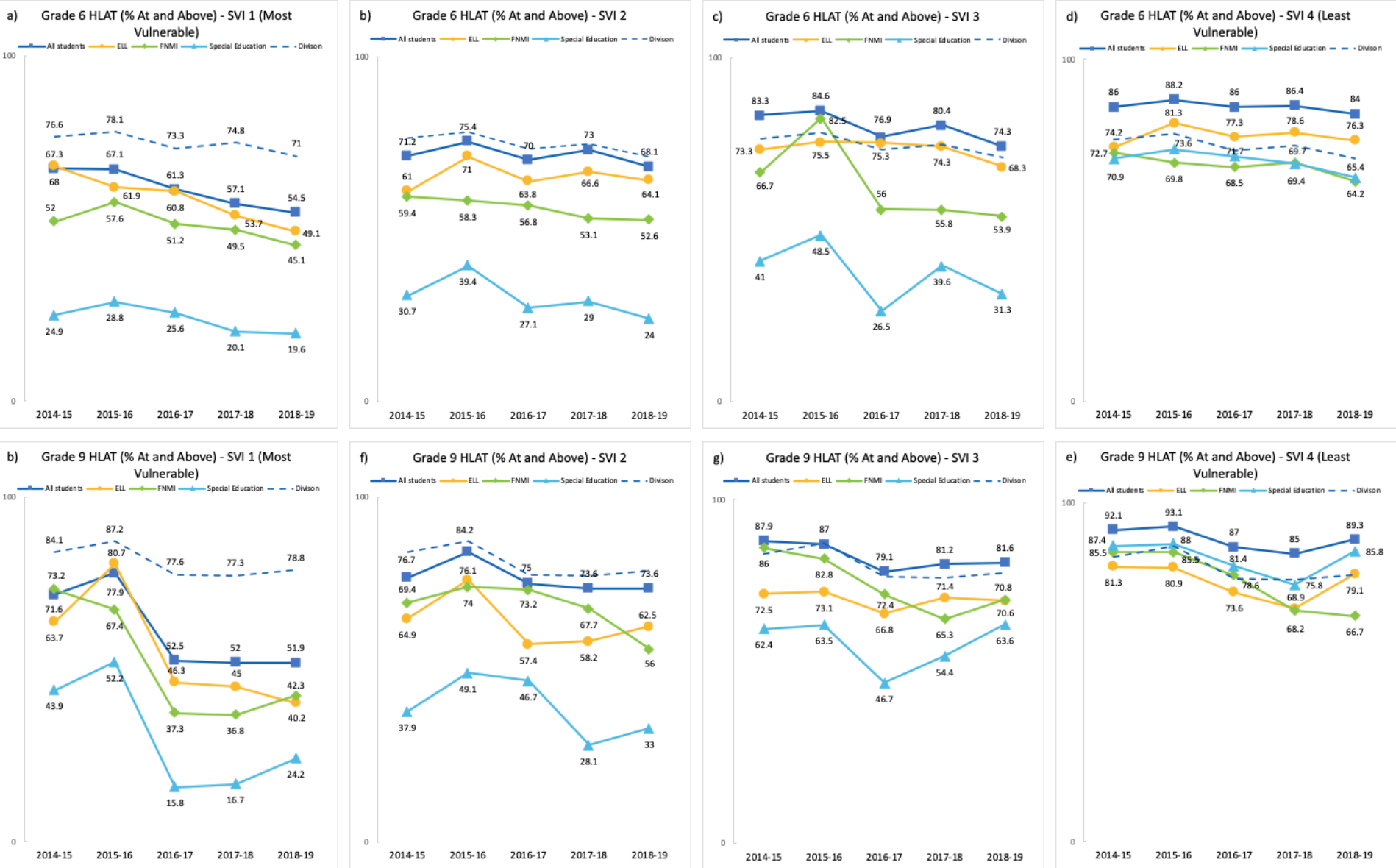
Graphs 4a-h. Grades 6 and 9 English Language Arts (ELA) PAT by SVI



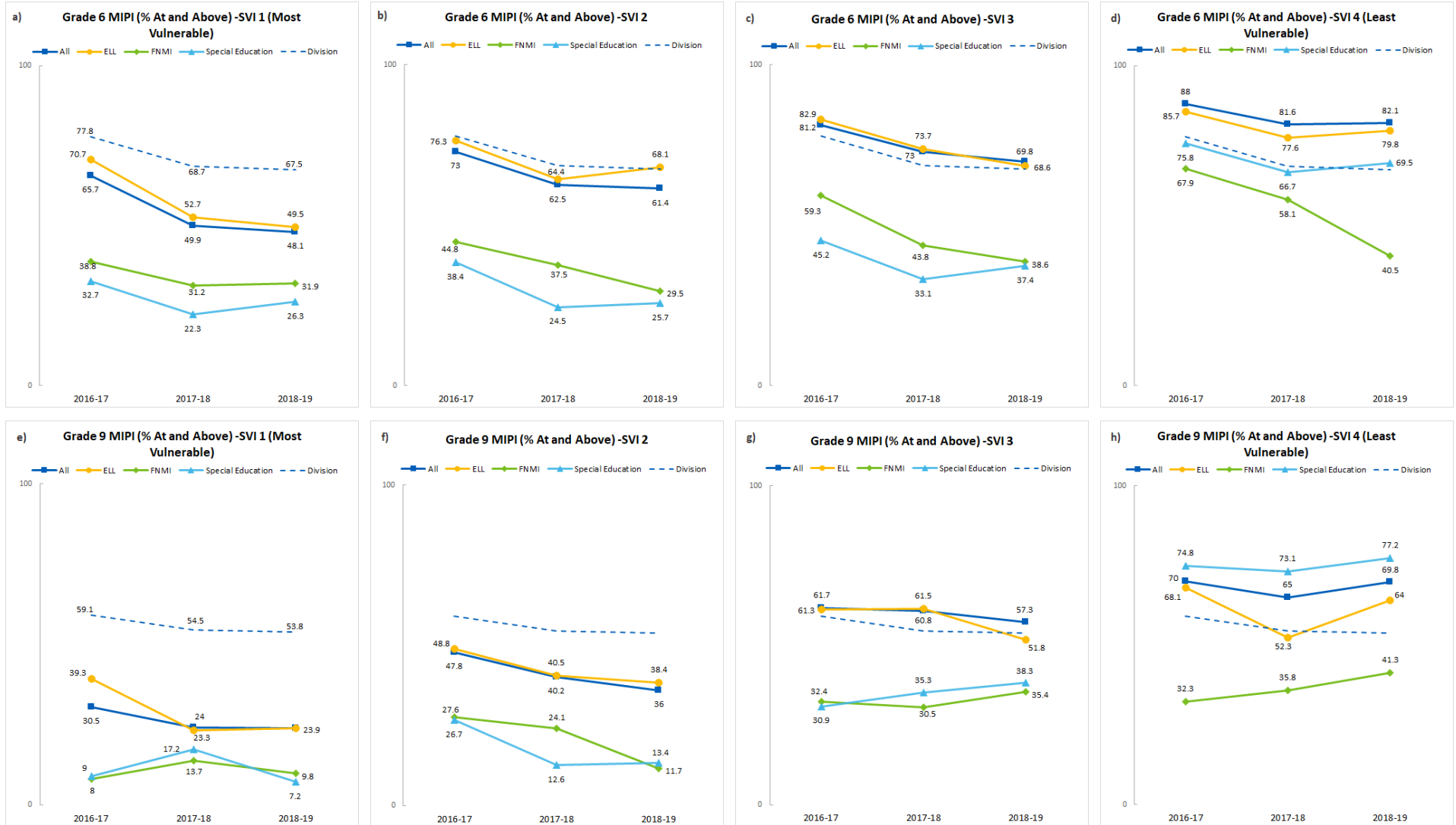
Graphs 5a-h. Grades 6 and 9 Math PAT by SVI



Graphs 6a-h. Grades 6 and 9 HLAT by SVI



Graphs 7a-h. Grades 6 and 9 MIPI by SVI³



³ MIPI data has only been collected centrally through Student Information beginning in 2016-2017.

The SVI analysis provides a perspective of Division achievement that aligns with the body of research examining the relationship between socioeconomic status and educational achievement. Generally, as the SVI of the school increases (i.e. decreasing vulnerability), students in those schools have higher levels of achievement. This pattern is predictable across assessment measures, grades (i.e., Grades 6 and 9), and across specific student cohorts (English Language Learners, self-identified First Nation, Métis and Inuit students and students with special education coding).

A few observations can be made:

- In SVI 4, groups of students are consistently achieving above the Division average (dashed blue line).
- In SVI 3, students are achieving similar to the Divisional average and in most cases, English Language Learners and all student are achieving above the Divisional average.
- In SVI 1, students are consistently achieving below the Divisional average.
- In SVI 2, students consistently achieve higher than their peers in SVI 1, but often achieve below Division average.
- HLAT and MIPI data demonstrate the same pattern of concern and success across the four SVI student groupings.

This work provides the Division with a much better understanding of where students are meeting grade level achievement and benchmark standards and where students are not yet. This information enables the Division to remain focused on continuous improvement where students are experiencing success and to be intentional and responsive where students require additional support.

NEXT STEPS

- To support assessment in the fall, as a means to inform programming and interventions for the school year ahead, the Division is extending its work with the Canadian Achievement Test (CAT)-4. This work will see students in Grades 2 through 9 writing the CAT-4 this fall. Results will identify where students are at in respect to literacy and numeracy learning and identify for teachers those students who are starting the year off achieving below grade level.
 - The CAT-4 is a testing system that assesses the essential learning outcomes across a range of basic skills in the areas of literacy and numeracy. It evaluates how well students perform in comparison to other students across the Division, region or in Canada as a whole.
 - The CAT-4 will be administered again in the spring. Data from the spring will provide the Division with an indication of growth for every student in the same school year.
- Administration will work in collaboration with school leadership to examine opportunities that support continuous improvement in the areas of literacy and numeracy.
 - Through the lens of evidence-based decision-making, data will provide opportunities for schools and catchments to analyze their results to inform which classroom strategies, approaches and interventions have the greatest impact on student success.
 - This work will build upon existing research based strategies, approaches and interventions and explore emerging new practices.
- The Division will take intentional, research-informed steps to address equity for students impacted by the challenges and complexities of high social vulnerability. There is the opportunity for an intentional response to the SVI data to be prioritized at the school, catchment and central levels of the Division.

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