

ENDS 2: Academics and Foundations
PART 2
January 26, 2023

Upon graduation, students will be academically prepared and confident to pursue higher education or specialized career training.

Interpretation

Following graduation, students will be prepared for employment, enlistment, and enrollment in post-secondary institutions. Students will demonstrate and apply the skills, knowledge, and thinking habits that empower them to fulfill their personal, academic, and career interests and ambitions after graduation.

Reasonable progress

Achievement of Ends 2 implies that from pre-school through transition to college and career, students will either achieve benchmark expectations described by grade-level standards or demonstrate gap-closing growth toward meeting expectations by graduation.

Indicators that students in all demographic and program groups are meeting, or are on track to meet, the targets of E-2 include the following:

- Students achieve academic benchmarks or accelerated growth in literacy and math on standards-aligned, validated assessments.
- Students meet standard on elementary report cards.
- Students earn credit in secondary courses aligned to E-2.
- Students select courses that support post-secondary studies and/or pursuit of their career choices.
- Students earn an Issaquah School District (ISD) diploma, based on graduation requirements aligned to E-2.
- Students access post-secondary opportunities according to their college and career plans.
- Students persist in their post-high school pursuits for employment, enlistment, or enrollment as indicated in successful attainment of degrees, certification, employment and/or enrollment.

Data Workbooks

[Benchmark Summary](#)

This workbook provides a summary and disaggregated data for selected cohorts on key benchmarks indicating progress toward academic achievement outcomes.

[Additional Data for Ends 2](#)

This workbook summarized additional data referred to in this monitoring report. (ex: Education, Research & Data Center (ERDC) highlights, survey data, PSAT, advanced course enrollment...)

[SBA Summary](#)

This workbook summarizes Smarter Balanced Assessment (SBA) data, used by the school board and district leadership.

[Demographic Data](#)

This workbook provides the official demographics of ISD from Office of Superintendent of Public Instruction (OSPI).

Executive Summary: Ends 2 Monitoring Report Part 2

The monitoring of part 2 of Ends 2 continues to build on the findings described in the monitoring report for [Ends 2 part 1](#):

1. ISD provides a broad range of programs informed by professional standards and evidence-based research. Programs are designed to meet a diverse range of educational needs and interests.
2. ISD students continue to achieve at very high levels. [see Benchmark Summary - 4-yr Grad tab].
3. Students access and succeed in post-secondary educational and occupational pursuits at high levels.
4. Pandemic related trauma, difficulties, fiscal constraints, and mitigation measures continued to impact teaching and learning.
5. During the 2021-22 school year, assessment data indicated areas of progress toward academic recovery while also identifying persistent recovery needs.
6. Academic disproportionality persists. Systemic and institutional inequities existed prior to the pandemic and frequently increased during pandemic-related school disruptions.

Part 2 monitors progress in the areas of math, science, technology, and application to life skills.

Additional considerations in these areas that apply across sections of this report:

Implementation of common grading practices

Implementation of common grading practices will be described in the monitoring of Executive Limitation 12. Establishing district-wide grading expectations is relevant to Ends 2. One aspect of the common grading practices focuses on providing students opportunities to recover from below standard work and for that work to be graded on proficiency. In this second part of Ends 2 monitoring data is provided on disproportionality in grades achieved by demographic groups. To achieve equitable outcomes, opportunities for recovery of learning and for earning a grade that reflects recovered learning is critical. Collaboration and training on grading practices occurred in 2021-22 for a fall 2022 initial implementation of common practices.

Positive Behavior and Social Emotional Supports (PBSES)

Continued implementation of culturally responsive PBSES systems and practices supports achievement and addressing disproportionality in all content areas. Barriers to engagement and achievement frequently relate to social, emotional, and behavioral factors. Sometimes the best academic intervention is a social-emotional intervention.

High Leverage Instructional Practices

As described in part 1 of the Ends 2 monitoring report, ISD is investing in instruction in areas such as science by integrating research-informed [High Leverage Practices](#) (HLPs).

- High Leverage Practices are informed by research in...
 - Universal Design for Learning
 - Culturally Responsive Education
 - Trauma Informed Practices
- High Leverage Practices are being used to guide...
 - Professional Development and team collaboration
 - Selection of new instructional materials
 - Revisions to the Scope and Sequence of ISD courses
 - Program improvements
- High Leverage Practices are part of the progression of implementing the ongoing ISD commitment to...
 - Inclusionary Practices
 - Cultural Competency
 - Positive Behavior and Social Emotional Supports (PBSES)
- High Leverage Practices are designed to...
 - Address barriers to learning
 - Provide access to opportunities
 - Differentiate for student learning interests, needs and strengths
 - Provide a common framework for evidence-based instructional practices

2.7 Students will know and apply mathematics to a level of fluency that ensures a broad range of post-secondary opportunities and career choices;

Interpretation

I interpret 2.7 to mean:

- a. each student will demonstrate knowledge and skills in mathematics that meet or exceed the state standards at key moments in their educational development, and
- b. students who score below standard in mathematics will experience accelerated growth and be provided supports for sustaining grade and age-appropriate engagement in math, and
- c. students will select courses in math that empower their personal choice of continued education and career opportunities.

Rationale:

The [Washington State Common Core Math Standards](#) are designed to prepare students for college and career readiness. Standards combine core skill fluency with depth of conceptual understanding and the expectation that students can apply their math understanding to real-world applications. The state and district graduation requirements ensure a level of math achievement for students to pursue their personal choice of continued education and career and life opportunities.

Evidence

Impact of pandemic on math achievement. Math achievement was impacted significantly during pandemic related closures. In grades K through 4, spring 2022 proficiency rates were close our pre-pandemic rates. As with ELA, many students who demonstrated high levels of proficiency in math prior to the pandemic, returned to performing at high levels by the spring of 2022. In 4th and beyond, our proficiency rates are below pre-pandemic levels and with continued or increased disproportionality in achievement outcomes for BIPOC students and students with disabilities. Though during the course of the 2021-22 school year there were signs of accelerated growth across populations, the growth did not lead to full recovery to 2019 proficiency rates.

Key Math Benchmarks:

The following key benchmarks for math are used for this monitoring report. Additional data is available in the linked workbooks.

1. **5th Grade math achievement.** Metrics include proficiency rates and growth indicators on state and district assessments.
2. **Middle School math course selection.** The ISD Middle School math program offers students the opportunity to select their math courses. Metrics used from monitoring include proportionality in course selections, and the rate in which students pass and thrive in each course as demonstrated by achievement on state and district assessments and rates at which students receive an A or B grade.
3. **Algebra 2 completion and proficiency.** Most students meet graduation requirements by completing Algebra 2 or Applied Algebra 2. This course also prepares students for advanced math studies in preparation for college or career opportunities. Metrics for monitoring include Algebra 2 pass rates, A/B rates and the year in which students complete the Algebra 2 requirement.

Math Program Overview:

Elementary Math

Tier 1 Core Curriculum. The ISD elementary math curriculum was adopted in 2016. Eureka Math, and the digital resources through Zearn, are aligned with the state standards and provide a comprehensive learning opportunity. In 2019, ISD piloted i-Ready Math progress monitoring assessments and personalized learning resources to identify and address skill and knowledge gaps. In 2020-21 this program was expanded district wide. It is currently used to provide adaptive digital learning opportunities,

During the 2021-22 school year ISD adjusted the scope and sequence and pacing guides to focus on numbers and operations and algebraic sense. These areas are considered power standards, meaning that they include the key cumulative skills upon which future math content is built. Areas of geometry, measurement and statistics are important and much easier to accelerate in future learning once students establish a strong foundation in numbers, operations, and algebra. Since teachers did not focus on teaching geometry and measurement to pre-pandemic levels, i-Ready domain data indicated students experienced stronger growth in numbers, operations and algebra, and less growth or proficiency in geometry and measurement. SBA domain, or strand, scores are no longer provided by OSPI.

Tiered Supports & Interventions. Classroom-based extended learning and interventions are provided through differentiated and small group instruction. ISD continues to provide resources and training on the effective use of adopted materials for extended learning and intervention. Resources include the following:

- i-Ready pre-requisite skill report which provides teachers identify which students may benefit from pre-teaching at the start of a unit
- Targeted small group lessons to help address knowledge and skill gaps.
- Zearn, the digital resource aligned with Eureka Math.

During the 2021-22 school year, ISD conducted a review of math intervention materials and selected two intervention programs to pilot at two of our Title schools whose data indicated the greatest level of need for interventions. Selected programs are currently being expanded to other Title schools for delivery through their Title I-A services.

Additionally, ISD worked with i-Ready partners to develop targeted interventions for use with summer school and after-school programs (ASAP). Summer school for elementary was expanded to meet the increased need for extended learning. Students were offered summer school based on assessed need.

Progress Monitoring. Elementary math achievement at the individual, classroom, school, and district level are monitored using a variety of assessments and data-based decision-making protocols. Highlights include:

- i-Ready Math Diagnostic was administered in Fall, Winter, and Spring. Staff accessed results through a teacher dashboard that provides growth monitoring for their students. Tiered Teams reviewed data to inform interventions. ISD continues to expand and refine protocols and training for tiered teams to effectively use data.
- School Improvement Data Dashboards are used to monitor rate of growth and proficiency disaggregated by demographic and program groups to inform school improvement goals and action plans.
- Metrics for monitoring progress include the following (some of the following are emerging metrics)
 - SBA and i-Ready Proficiency Rates
 - Student growth rates (% on track to meet typical or growth goals in i-Ready Math)
 - 20th percentile growth, median score growth
 - Eureka module assessments (individual and classroom-based measures)

Middle School Math

Tier 1 Core Curriculum. ISD adopted CMP math in 2014. CMP requires supplementation to achieve the depth of knowledge in the state standards. Currently, teachers use open source curricular materials to enhance CMP. In 2020, and continuing through spring 2023, ISD provided ALEKS math for middle school instruction. ALEKS is a digital supplement for curriculum, initially introduced to provide a platform for remote learning. Data below suggests the need for a more coherent and consistent Middle School curriculum aligned with research-informed practices and the current state standards.

As with the elementary scope and sequence, TLS staff and teacher leaders have monitored and adjusted the scope and sequence for ISD middle school courses to focus on essential pre-algebra (numbers and operations) and algebra skills and knowledge.

A curriculum adoption process was initiated in the spring of 2020. This process was interrupted during the pandemic and is currently suspended due to fiscal constraints.

Math Pathways, A Work in Progress. During the 2021-22 school year, the curriculum adoption team reviewed and evaluated math course selections and pathways as part of the initial phase of the material selection process. The adoption team recommended changes to the [MS Math Pathways](#), including the following:

- Offer a new compacted math option beginning in 6th grade. Currently compacted math options begin in 7th grade.
- Phase out the CC8/Algebra compacted course in favor of a full year, stand-alone Algebra course.
- Timeline:
 - 2022-23: Course redesign
 - Winter 2023: Communication and student enrollment. 6th grade course selection from the new math courses.
 - Fall 2023-Fall 2025: Phase out current courses and phase in new course offerings.

The objectives of the change in Middle School Pathways includes the following:

- Increase proficiency rates on SBA and district assessment for student enrolled in the on-grade level, standards aligned courses (Math 1,2,3)
- Increase accessibility of math courses that lead to advanced math studies (Math 1/2, Math 2/3, Algebra)
- Increase proportional representation among BIPOC students in advanced math courses
- Avoid students skipping content
- Ensure all students receive a full year of Algebra
- Clearly provide and communicate opportunities for students to adjust their math pathways to align to their education and career plans over their middle and high school career.

Additional works in progress for Middle School Math

- Continued planning for a new curriculum adoption when resources are allocated.
- In 2021 ISD expanded the use of i-Ready Math for recovery services. As a result of continued evaluation of available math resource ISD is piloting, in 2022-23, the further expansion of i-Ready Math at IMS, selected based on elevated need for extended learning and classroom-based interventions in Math. i-Ready Math provides a validated progress monitoring assessment aligned with MTSS guidelines, and provides extended and personalized learning to address skill and knowledge gaps.
- Continued training and collaboration on the use of Study Skills classes to provide intervention and supports for student success in math classes.

Progress Monitoring. Progress of middle school students is monitored through SBA, math course selections and math course grades. ISD is piloting i-Ready math, an additional progress monitoring tool at the Middle School level.

High School Math

Tier 1 Core Curriculum. In 2018 ISD adopted the *enVision* Common Core aligned curriculum for the Algebra-Geometry-Algebra 2 series. This series is standards-aligned. Students demonstrating proficiency in these courses meet most college entrance requirements and are prepared to enroll in advanced and interest-based math options.

Upon completion of Algebra 2, students have a range of options for continuing math studies or applying math studies in support of their High School and Beyond Plan. Data in the High School tab of the [Benchmark Summary](#) workbook indicates that students taking courses beyond Algebra 2 in high school pass at a high rate.

In addition to math enrollments beyond Algebra 2, students enroll in CTE courses and Science courses described in the sections below to apply mathematical understanding in preparation for college and career choices.

Tiered Supports & Interventions. During remote learning, many students demonstrated significant challenges learning algebra and pre-algebra content and skills. In 2021-22, pass rates for Algebra 1 were 80.3%, the lowest among core courses.

In response, ISD has taken the following actions:

- Students needing additional support in Algebra 1, Geometry, and Algebra 2 are provided the learning recommendation to take a Math Lab elective.
- Addition of pre-Algebra classes.
- Increased integration of Algebra content in Geometry courses to address weaknesses in Algebra skills and prepare for Algebra 2.
- Increased credit recovery courses.
- Continued no-cost credit recovery summer program.

Teaching and Learning Services (TLS) meets regularly with math department leaders to monitor and adjust programs. Additionally, ISD leaders, school leaders and math representatives meet annually to make recommendations for allocation of resources to address issues related to math achievement and disproportionality. Examples include strengthening learning recommendations for course selection, providing targeted math classes such as pre-algebra and off-cycle math courses, Math 180, etc.

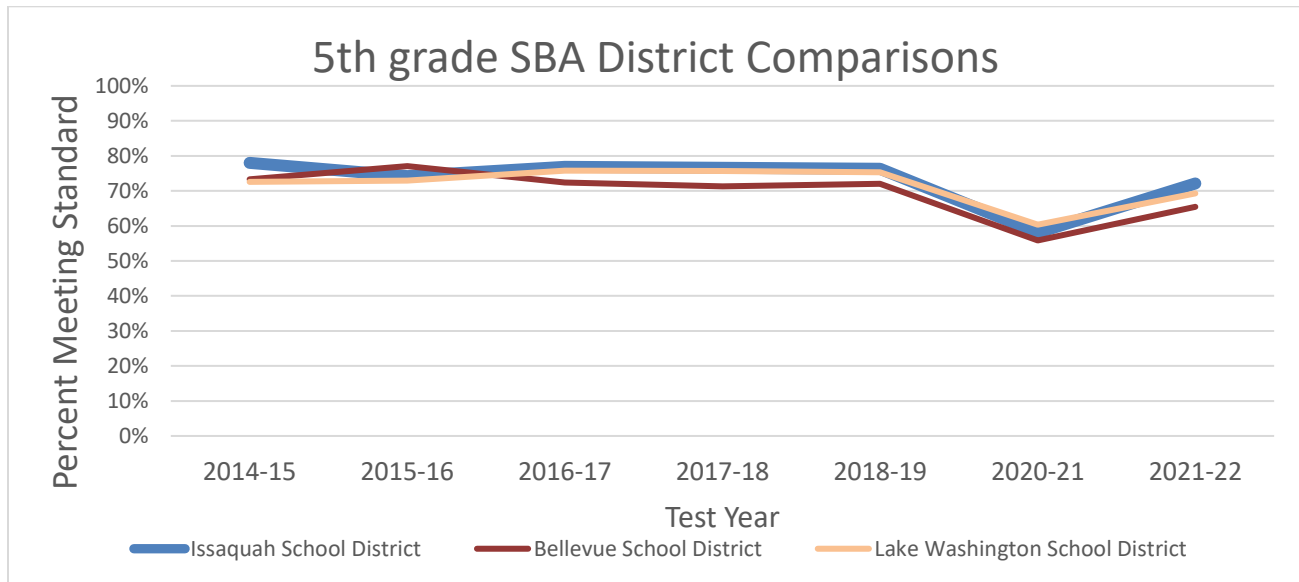
Progress Monitoring. Primary monitoring of high school math achievement is through credit accrual and grades. School staff use a *D&F Report* at the first early grading period to monitor students at risk of failure and to engage students and create a plan for successful completion of their math course.

Summary of Data Evidence

Benchmark 1 Data: 5th Grade Proficiency

ISD students participated in the 4th grade SBA in the fall and the 5th grade SBA in the spring. The spring assessment is considered a new baseline by the Office of the Superintendent of Public Instruction (OSPI).

The chart below provides an overview of 5th grade SBA proficiency rates over time for ISD, Bellevue School District and Lake Washington School Districts, indicating the pattern of the drop in math achievement during the pandemic and the progress toward recovery over the 2021-22 school year.



ISD results in the table below include only students who attended ISD for the full 2021-22 school year. This data indicates the following:

- The overall proficiency rate rose to 73% for continuously enrolled students
- 45% of our students of color in groups with disproportionate outcome, listed as the *BIPOC Aggregate* group, met standard, 28% lower than overall proficiency. The BIPOC Aggregate group includes students who identify as Black/African American, Latinx, Native American or Pacific Islander.
- 20th Percentile Detail remained relatively flat (<.10 increase) for groups with a 20th percentile below standard, suggesting that though students demonstrated learning, the rate of learning for students near the 20th percentile did not result in gap-closing growth during that interval of time.

SBA Math 2021-22 5th Grade Students

	N	Math SBA % Proficient		SBA Math 20th Percentile Detail Level <i>Increases over time = accelerated growth</i>	
		4th	5th	4th	5th
ISD All	1474	69%	73%	2.57	2.63
Asian	549	84%	86%	3.20	3.50
Black/African American	39	36%	33%	1.87	1.82
Hispanic/Latinx	127	45%	50%	1.91	1.90
Two or More Races	132	62%	71%	2.53	2.66
White	619	64%	69%	2.44	2.49
BIPOC Aggregate	174	42%	45%	1.89	1.86
Multi-Lingual Learners	92	35%	39%	1.87	1.83
Students with Disabilities	144	24%	24%	1.82	1.80

Note: BIPOC Aggregate demographic group for the inclusion of demographic groups whose small population results in data suppression.

Benchmark 2 Data: Middle School Math Course Selection & Middle School Math Achievement

For benchmark 2, this report monitors middle school student course selection and the resulting achievement outcomes. This monitoring centers on 3 essential questions:

1. Are students proportionately accessing advanced math courses?
2. Are students proportionately successful in the courses of their choice?
3. Are students successful in the on-grade level courses achieving standard?

Answering these questions requires a few different views of the data. Key observations from each data set are bulleted above the respective charts. In summary, the data indicates the following:

- Students in the BIPOC Aggregate groups are underrepresented in advanced math classes.
- Students in the BIPOC Aggregate groups are not proportionately receiving A's or B's in either on-grade level or advanced math classes.
- Students receiving lower than an A in on-grade level 8th grade math are not demonstrating proficiency on the SBA at an acceptable rate.

These patterns in the data drive district actions described above to accomplish the following:

- Strengthen core curriculum in on-grade level courses to ensure students successfully completing courses are demonstrating standard at a high proficiency rate
- Revise math pathway design and preparation for Middle School Math to increase racial proportionality in advanced math courses, and
- Increase consistency and equity in grading practices.

Starting with overall math achievement outcomes, the following chart monitors cohort progress of 2021-22 8th grade students who were enrolled at the start of 6th grade in order to evaluate the impact of our middle school program on Math scores as measured by the state assessment. This data indicates the following:

- During the pandemic, students continuously enrolled in the ISD decreased in overall proficiency by 4%.
- The decrease in detail level was similar at the median and 20th percentile level.
- Because the 20th percentile level was meeting standard, the 10th percentile score was added as a measure of growth of continuously enrolled students scoring below standard. The detail level at the 10th percentile indicates a decrease in proficiency from the 5th test to the 7th grade test then partial recovery by the spring of 8th grade.

True Cohort Growth Monitoring			
Current 8th Grade Class, continuously enrolled (N=1229 students)			
	SBA Math		
	5th Grade	7th Grade	8th Grade
% Proficient	84%	80%	80%
Median Detail Level	4.03	3.80	3.74
20 th Percentile Detail Level	3.20	3.00	3.00
10 th Percentile Detail Level	2.52	2.32	2.41

In middle school students self-select their math courses. The following charts below provides the course enrollment history of the 2021-22 8th grade class. This data indicates the following:

- Approx. 50% of all students completed Algebra 1 by 8th grade.
- Less than 18% of BIPOC students completed Algebra 1 by 8th grade, indicating disproportionality of representation in advanced math pathways.

Course History for 2021-22 8th Grade Class			
<i>number of students per course</i>			
	6th Grade 2019-20	7th Grade 2020-21	8th Grade 2021-22
Total Enrollments	1627	1563	1528
Math Common Core & Compacted Common Core Series	CC6 1223	CC7 724	CC8 745
		CC7/8 453	CC8/Alg 1 452
Optional Accelerated Series	CC 7/8 390	CC8/Alg 1 372	Geometry 331
Exceptional Placement Series <i>(requires content test)</i>	CC8/Alg 1 14	Geometry 14	Algebra 2 @ HS

2021-22 8th Grade Math Course Enrollment by Race							
		CC8		CC8/Alg1		Geometry	
		N	% of Group in Course	N	% of Group in Course	N	% of Group in Course
	Total						
ISD All	1539	738	48%	427	28%	325	21%
Asian	518	131	25%	163	31%	214	41%
Black/African American	35	22	63%	7	20%	0	0%
Hispanic/Latinx	144	107	74%	18	13%	4	3%
Two or More Races	163	83	51%	46	28%	31	19%
White	670	388	58%	192	29%	75	11%
BIPOC Aggregate	188	136	72%	26	14%	5	3%
MLL	77	44	57%	16	21%	4	5%
St with Disabilities	121	66	55%	3	2%	3	2%

Note: This chart does not include students taking an alternative course as part of their individualized education plan (IEP) or who are taking Algebra 2 at the high school, causing the enrollment in the 3 MS courses to not add up to the total enrollment.

To evaluate learning outcomes by course selection, the following chart summarizes grades and SBA outcomes by course and race. Additional data is available in the 8th grade tab of the [Benchmark Summary](#) workbook.

This data indicates the following:

- Less than 50% of students in the standards aligned math course, CC8, demonstrated proficiency on the SBA.
 - Additional data study indicated that 73% of students who receive an A in CC8, demonstrated proficiency on the SBA.
 - Less than 50% of student who received a B or lower grade in CC8 demonstrated proficiency on the SBA.
- Students taking CC8/Alg1, the compacted course, demonstrated proficiency at much higher rates on the SBA.
- Students in the BIPOC aggregate group(s) received A or B grades at a lower rate than their peers in both CC8 and CC8/Algebra.

Proficiency Indicators of 2021-22 8th Grade Students, by Course				
	CC8		CC8/Alg1	
	% A or B Grade	SBA Math % Proficient	% A or B Grade	SBA Math % Proficient
ISD All	64%	47%	86%	85%
Asian	80%	55%	91%	90%
Black/African American	32%	30%	Suppressed	Suppressed
Hispanic/Latinx	40%	31%	61%	88%
Two or More Races	69%	48%	87%	78%
White	72%	49%	84%	83%
BIPOC Aggregate	39%	31%	58%	79%

N < 10 suppressed by OSPI rules

Benchmark 3 Data: Algebra 2

Algebra 2 is not only a graduation and college entrance requirement, it includes math content essential to the study of advanced mathematics in many college and career choices. Receiving an A or B in Algebra 2 is an indicator of being highly prepared for advanced mathematics.

The chart below includes all students who were enrolled in Algebra 2A in the fall of 2021. Student who enrolled in the advanced math pathways in middle school and continued the progression of courses would take Algebra 2 during or before 10th grade. This data indicates the following:

- 59% of all Algebra 2 students were in 8th-10th grade while 39% of Algebra 2 students in the BIPOC Aggregate group were in 8th-10th grade.
- Students enrolled in Algebra 2 after 10th grade have a significantly lower rate of receiving an A or B.
- Significantly higher rates of students in the BIPOC aggregate group, in comparison the overall population, are enrolled in Algebra 2 in 12th grade.

Algebra 2 by Grade Level 2021-22 Semester 1						
	All Grades	8th Grade	9th Grade	10th Grade	11th Grade	12th Grade
Number in Algebra 2	1396	24	342	460	533	37
% Receiving A or B	67%	92%	90%	75%	46%	32%
Pass Rate	93%	100%	99%	96%	88%	78%

Algebra 2 by Grade Level and Race <i>corrected on 3/23/23</i> Percent of students taking Algebra 2 in 2021-22 in each grade						
	N	8th Grade	9th Grade	10th Grade	11th Grade	12th Grade
Asian	459	4%	47%	31%	17%	0%
Black/African American	18	0%	6%	39%	50%	6%
Hispanic/Latinx	130	1%	13%	30%	49%	7%
Two or More Races	112	1%	19%	34%	42%	4%
White	669	0%	13%	35%	49%	3%
BIPOC Aggregate	156	1%	12%	29%	51%	7%

Recap / Summary: District Actions for Math Improvement

Works in Progress: *in various stages of implementation from exploration to initial implementation*

- Revise Middle School Math Courses and Pathways
- Equitable grading practices: recovery opportunities (6-12)
- *Adopt new middle school math curriculum (currently on hold)
- Integrating Algebra re-teaching in Geometry course
- Professional Development: K-5 Math Mindsets and Practices
- *Extended learning and classroom-based interventions (K-5, MS – resources, training, revision of scope and sequence)
- Title I-A Math Intervention (K-5)
- Strengthening middle school study skills math interventions
- Strengthening learning recommendations for high school course selection
- High school recovery (credit recovery, summer school...)
- *High school targeted classes (Math labs, pre-algebra, off-cycle courses, strategic scheduling)
- *Math 180 (secondary: exploring)

* Actions where next steps are subject to cost of implementation / available resources

2.8 Students will use analytic and scientific principles to draw sound conclusions;

Interpretation

I interpret 2.8 to mean:

- each student will demonstrate STEM knowledge and skills that meet or exceed state standards, and
- students who score below standard in core academic skills impacting performance in STEM will be provided the equitable opportunity to attain and demonstrate proficiency with STEM concepts and skills, and
- students will have equitable access to STEM opportunities of their choice, including science, applied math and sciences, and CTE, and develop cross-cutting concepts, core ideas and practices to understand and address global and local issues, and design solutions to real-world problems.

Rationale:

[Next Generation Science/STEM Standards](#), NGSS, are designed around Crosscutting Concepts, Disciplinary Core Ideas, and Science and Engineering Practices, and guide STEM instruction to blend depth of understanding of science with the ability to apply science to real-world science and engineering compelling problems and tasks.

Evidence

K-12 Science Program Overview

Elementary Science. ISD adopted Amplify Science in 2019. A phenomena-based science curriculum, Amplify Science is a K–5 science curriculum that blends hands-on investigations, literacy-rich activities, and interactive digital tools to empower students to think, read, write, and argue like real scientists and engineers

To learn more, please see our [Elementary School Learning](#) website, browse by grade using the Science Tab for each grade level.

Middle School Science. In 2017, ISD adopted Science and Technology Concepts (STC) for Life, Earth and Space, and Physical Science. Students may elect to skip Life Science and take High School Biology their 8th grade year.

High School Science. In 2018 and 2019 district-wide high school science courses adopted new, NGSS-aligned curriculum. Students may select from an array of science courses described in their school's [course guides](#). Students must complete 3 years of high school science, two of which must be lab courses. The most common lab courses are Biology, Chemistry and Physics. Students meeting graduation requirements also meet the college entrance requirements for most schools. Additionally, many CTE courses are STEM oriented, providing additional STEM learning opportunities. Our CTE program offerings and participation are described in section 2.10 below.

Science Data Evidence

State Testing

In Washington, Students participate in the [Washington Comprehensive Assessment of Science \(WCAS\)](#) in grades 5, 8, and 11.

WCAS Testing Results

	5 th Grade	8 th Grade	11 th Grade
2019	77.9%	78.0%	29.6%
2022	75.8%	67.3%	46.3%

Pass Rates

This chart illustrates that students pass ISD lab courses at high rates.

	Biology A	Biology B	Chem A	Chem B	Physics A	Physics B
All ISD	94%	94%	95%	94%	99%	98%
Issaquah High	94%	93%	95%	94%	98%	99%
Liberty High	93%	94%	92%	89%	99%	95%
Skyline High	96%	97%	98%	97%	100%	99%

These rates do not include AP/IB science courses.

As an indicator of the level of proficiency in which students are achieving in science courses, the following chart provides data on grades in the most common science courses by race.

- As with Math grades above, this data indicated disproportionate outcomes in science courses for students in the BIPOC Aggregate groups with 24% fewer achieving A or B grades and triple the F-rate.

Science Achievement by Race in the most common science courses				
	A or B	C, D, or P	F	N
All	76%	21%	4%	4538
Asian	85%	13%	2%	1740
Black / African American	43%	44%	13%	72
Hispanic / Latinx	54%	35%	11%	340
Two or More Races	70%	27%	3%	377
White	74%	23%	3%	1992
BIPOC Aggregate	52%	36%	12%	429

Most Common Science Courses

(includes AP & IB)

Biology
Chemistry
Environmental Science
Physics
Astronomy
Sports Medicine
Forensics

2.9 Students will understand and apply current and emerging technologies to demonstrate technology literacy and use technology to solve problems using both computational and critical thinking;

Interpretation

I interpret 2.9 to mean:

- students will demonstrate technology knowledge and skills as described in the ISTE (International Society for Technology in Education) standards, and
- students will engage, create, and produce using technological tools, and
- students will adapt to and leverage new technology for learning and personal or occupational advancement.

Rationale:

The [ISTE standards for students](#) describe learning expectations for the use of standards around 7 components which “[prepare students] to thrive in a constantly evolving technological landscape. The student section of the ISTE Standards is designed to empower student voice and ensure that learning is a student-driven process.”

Evidence

Integration in Core Curriculum

Our core curriculum embeds instruction in critical thinking skills such as problem-solving, and students apply ISTE standards in content areas. In addition, staff are expected to consistently incorporate technology into instruction and to facilitate student use of technology as a learning tool. Examples include the following:

- Clever, Seesaw and Teams were used in classrooms K-5 to facilitate learning throughout the 2021/22 school year. Students use Clever to launch applications to support the curriculum such as Zearn, Quaver and i-Ready as well as other technology tools such as Office365, Seesaw, and Adobe Spark.
- Canvas, our new Learning Management System for grades 6-12 was utilized by teachers and students throughout the 2021/22 school year to facilitate learning. Students used Canvas to access course content and materials, collaborate with peers, communicate with their teachers, manage their school work, and launch their online textbooks and submit assignments.
- Many of the middle and high school core classes include online textbooks and tools to support learning. For example, ALEKS is used in Algebra 1, Geometry, Chemistry, and middle school math classes. ALEKS is an adaptive learning program that includes diagnostic assessments and learning paths for students based on the assessment. NoRedInk used in middle school English/Language Arts is a tool to support student writing through adaptive technology.
- Washington State adopted the ISTE (International Society for Technology in Education) standards in 2018. The WA Ed Tech Standards show connections to other content areas. Through our adoption process, implementation and professional development for core curriculum, the Ed Tech standards and how teachers will teach these standards are included in the work.
- During the 2021/22 school year, our middle schools piloted a 1:1 (1 computer for each student) program. This provided more guaranteed access to technology for ongoing use in the classroom.

Technology-Focused Courses

In addition to using technology within core classes, technology-focused courses are offered at all middle and high schools as described in their course guides. Choices with high utilization of technology provide students with a diverse set of options to pursue their interests. Examples include:

- CTE courses as described in section 2.10 below
- Arts courses such as photography or video production
- Electives in core content areas such as computer sciences and journalism

STEM / Technology Data Evidence

The chart below summarizes participation in STEM Electives, courses that focus on two STEM areas (science, technology, engineering and math) while the Technology Electives focus on only Technology. This data indicates:

- Relative proportional racial representation in STEM and Technology Electives
- Significantly less than half of STEM and Tech enrollments are by female students, indicating underrepresentation. Further study would be required to determine what alternative electives are being selected by female students, and whether any of those electives are science or math related.

STEM Participation by Race & Gender

	N in Cohort	% of Cohort	STEM Elective		Technology Elective	
			N	% of STEM Enrollments	N	% of Tech Enrollments
ISD All High School	6234		1639		2020	
Asian	1963	31%	729	44%	567	28%
Black/African American	137	2.2%	24	1.5%	37	1.8%
Hispanic/Latinx	648	10%	110	6.7%	191	9.5%
Two or More Races	538	8.6%	116	7.1%	194	10%
White	2914	47%	652	40%	1017	50%
Male	3196	51%	1175	72%	1143	57%
Female	3038	49%	464	28%	877	43%

	N in Cohort	% of Cohort	STEM Elective		Technology Elective	
			N	% of STEM Enrollments	N	% of Tech Enrollments
ISD All Middle School	4734		1772		453	
Asian	1604	34%	606	34%	126	28%
Black/African American	122	2.6%	45	2.5%	18	4.0%
Hispanic/Latinx	451	10%	143	8.1%	39	8.6%
Two or More Races	392	8.3%	197	11%	53	12%
White	2083	44%	774	44%	210	46%
Male	2376	50%	1159	65%	279	62%
Female	2358	50%	613	35%	174	38%

Speak Up Survey

Speak Up Survey Data is one of the ways we solicit feedback from students on their technology use in middle school. The Speak Up Survey was put on hold during the 19/20 and 20/21 school years. Last year 2238 middle school students (out of approx. 4600) responded to the survey.

2,238 respondents	6th Grade	7th Grade	8th Grade
% by grade level	38%	33%	29%

Two of questions allowed students to reflect on the benefits of technology and how they use it to support their learning. Responses below indicate usage of technology in key areas at higher rates than Nationally (State % only represent ISD)

With the 1:1 pilot for middle school students during the 2021-22 school year this data indicates:

- Student use of technology to interact with content
- Student use of technology to engage in learning beyond the textbook (research, extended learning)
- Student use of technology to interact with teacher and peers

6 Which of these schoolwork activities are you regularly doing this school year?

<i>Response</i>	<i># of Responses</i>	<i>% of Responses</i>	<i>State %</i>	<i>National %</i>
Create online documents to share with my classmates and teachers	1285	62	62	55
Email my teachers with questions	1295	63	63	46
Internet research for an assignment	1734	84	84	71
Play digital, video or online games for learning	493	24	24	35
Read books or articles using a mobile device	983	48	48	39
Research online primary source documents	1075	52	52	38
Take online tests or quizzes	1798	87	87	81
Use online textbooks or curriculum	1399	68	68	40
Watch a video made by my teacher	778	38	38	42
Watch educational videos from YouTube or other sites	1150	56	56	58

What do you think are the benefits of using technology as part of your learning experiences? As a result of using technology, I am …; (Check the benefits that are true for you)

Response	# of Responses	% of Responses	State %	National %
Applying what I have learned to practical problems	875	44	44	42
Collaborating with other students more	1149	57	57	49
Communicating with my teacher more often	1073	53	53	41
Developing creativity skills	970	48	48	51
Developing critical thinking and problem-solving skills	877	44	44	43
Enjoy learning more	985	49	49	49
Getting better grades and test scores	972	48	48	50
In control of my learning	1150	57	57	49
Learning at my own pace	1192	59	59	57
Learning in a way that fits my learning style	998	50	50	47
More engaged and interested in what I am learning in class	761	38	38	36
Taking greater responsibility for my own learning	954	48	48	42
Understanding what I am learning better	892	44	45	42
Using time at home for extended learning	1021	51	51	35
Other	88	4	4	5

During the 2021-22 school year ISD proposed and voters approved an operations levy that expands the 1:1 technology to all secondary students. Planning for the implementation of 1:1 in the fall of 2022 focused on supporting teachers in the usage of technology to reduce barriers to learning, engage students, support students to manage their learning, and use technology appropriately and effectively.

2.10 Students will apply academic skills to life situations;

Proposed New Interpretation

I interpret 2.10 to mean:

- each student will apply content and thinking skills to authentic tasks that reflect how their learning is applied outside of school, and
- students will use their content and academic skills after high school for personal and occupational advancement, continued learning and life management.

Overview

ISD integrates application of academic skills to life situations throughout our core curriculum. State standards ensure that content instruction includes relevant application as described in the content specific areas of this report such as...

- Math application problems from K-12 to experience math in the real world
- Social studies curriculum that regularly makes connections to and analyzes current events

- Use of technology to broaden access to current, relevant information and research
- A rich selection of diverse literature in ELA courses that both allow students to reflect on their lived experiences and learn about the lived experiences of people from diverse backgrounds.
- Engaging in authentic expression through the arts.
- Using knowledge of health and fitness to make personal decisions that promote well-being

Additionally, ISD middle and high schools offer a broad array of interest-based electives or options for completing graduation requirements.

ISD offers choice program options that focus on application and life situations such as WANIC, Science Tech, Gibson Ek High School and CTE courses.

Career and Technical Education

CTE provides multiple opportunities for students to practice employment skills while in high school. All CTE courses provide students work-based learning opportunities as part of the core curriculum. In many of the courses, students explore career opportunities related to the course and may have guest speakers in class who talk about their related career or mentor students during a project. In some of the courses, students run a school-based enterprise such as the DECA stores, L'café, video newscast or publications produced in the schools. In a few cases students participate in internships and work-site learning where they are actually performing work related to a CTE course they are taking in high school.

CTE provides students opportunities to earn college credit and/or industry recognized credentials as a result of completing a course. Courses offer credentials such as:

- Adobe Certified Professional in Illustrator or Photoshop
- Autodesk Certified User
- Basic Life Saving Certification (AHA or Redcross)
- AHA Heartsaver CPR Certification
- Food Handler Card
- ServSafe Certified Food Manager
- Unity Certified User- Programmer
- Quickbooks Certification

To see the college credit available through CTE courses, please navigate to our [CTE Web Page](#).

Students in CTE courses at both the middle and high school level develop and apply employment-ready 21st century skills, which will be utilized in their post-secondary life. Some of the 21st century skills students apply during classes are:

- Creativity and Innovation
- Critical Thinking and Problem Solving
- Communication and Collaboration
- Information Literacy
- Media Literacy
- Flexibility and Adaptability
- Initiative and self-direction
- Leadership and Responsibility

21st century skills are applied in CTE classrooms through project-based learning, school-based enterprises and leadership opportunities through Career and Technical Student Organizations (DECA, FCCLA, WCTSMA, HOSA, etc.)

In CTE courses, students learn to use technology to solve problems and engage in computational and critical thinking.

- CTE Students in Computer Science create an application to solve a local problem they have observed in their community.

- Middle School students use computational thinking to design an orthotic for someone with cerebral palsy.
- Sports Medicine students use critical thinking to design a rehabilitation plan for someone with an injury.
- Sales and Marketing students think critically to design a marketing plan for a local company.

2021-22 CTE Enrollment by Race / Program

	Oct 1 Overall Enrollment	% of CTE Enrollment	CTE Enrollments
		Total	14862
Asian	31%	28%	4651
Black / African American	2.3%	2.0%	325
Hispanic/ Latinx	11%	9.2%	1511
Two or More Races	8.7%	7.9%	1296
White	47%	43%	7079
Students with Disabilities	9.1%	6.8%	1105
MLL	4.1%	2.3%	381

Note: 1 enrollment = enrolling for one trimester or semester.

See also Survey Data tab in the [Additional Data for Ends 2](#) workbook for data on how students feel prepared for using their knowledge and skill beyond high school.

Board approval: January 26, 2023