

Marshall Islands Standards Assessment Test (MISAT) 2019 ANNUAL REPORT



*Assessment Office
Public School System
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Introduction:

This 2019 annual report on the Marshall Islands Standards Assessment Test, or MISAT, summarizes student performance on the test series for the school year 2019 and provides comparison to previous years.

The MISAT is a battery of standards based assessment tests used as the main summative assessment tools at the end of the school year for grades 3, 6, 8, 10, and 12. At grades 3 and 6, MISAT consists of tests in English Reading, Marshallese Reading, and Mathematics. At grade 8, the tests are called the High School Entrance Test because it is used as a placement test for students entering the public high schools, and it consists of subtests in English Reading, Marshallese Reading, Mathematics, Science, and Social Studies. At grades 10 and 12, students are tested in English and Mathematics.

Assessment and scoring on the MISAT is done at the benchmark level. Students receive one of the following scores on each individual benchmarks being assessed:

<i>Performance Level</i>	<i>Description</i>
Advanced	Students working above expectation for specific grade benchmarks
Proficient	Students are meeting the expectation for the grade level
Developing	Students are learning but do not meet the expectation for the grade level
Beginning	Students do not understand the concepts being measured

Students overall score consists of their performance levels on each of the benchmarks and the final percentage of benchmarks they performed at proficient or advanced on. Schools' performance in turn is an aggregate of their students' performance on the curriculum benchmarks being assessed, and consists of percents of benchmarks students performed at advanced, percent at proficient, percent at developing, and percent at beginning. Finally, regional and national performance is also calculated for the percents of benchmarks students performed at the four performance levels.

MISAT Curriculum Standards

The MISAT assesses student performance at selected curriculum standards from selected subject areas for grades 3, 6, 8, 10 and 12. The areas assessed are:

1. Grade 3: English Reading, Marshallese Reading, Math, & Science
2. Grade 6: English Reading, Marshallese Reading, Math, & Science
3. Grade 8: High School Entrance Test consisting of subtests in English Reading & Writing, Marshallese Reading, Math, Science & Social Studies
4. Grade 10: English Language Arts & Math
5. Grade 12: English Language Arts & Math

Selection of standards was made on what was considered important and critical for student progress. The curriculum standards selected for assessment by the MISAT are shown in the following table. Based on the curriculum standards listed below, curriculum benchmarks associated with the standards were selected and items constructed to assess student mastery. These curriculum benchmarks are provided at the Results section under each graph depicting student performance at the benchmark level.

<i>Grade Level</i>	<i>Curriculum Standard</i>	<i>Description</i>
Grade 3, 6, 8, 10 & 12	English Language Arts Standard 2	Students will read fluently and with comprehension.
Grade 8 & 10	English Language Arts Standard 3	Students write fluently for a variety of purposes and audiences.
Grade 3, 6 & 8	Marshallese Language Arts Standard 2	Students will read fluently and with understanding.
Grade 3,6, 8 & 10	Mathematics Standard 1	Number sense, operations, mental computations and estimation. Students will develop number sense and an understanding of numbers and operations.
Grade 3,6,8, 10 & 12	Mathematics Standard 2	Geometry and measurement concepts. Students will name, describe, measure and compare geometric shapes and their properties.
Grade 3,6,8, 10 & 12	Mathematics Standard 3	Patterns, functions, and algebra concepts. Students will describe patterns and represent them with tables, graphs, equations, and verbal rules.
Grade 3,6, 8, & 12	Mathematics Standard 4	Statistics and probability concepts. Students will use data analysis, statistics and probability to analyze situations.
Grade 3, 6 & 8	Science Standard 1	Scientific inquiry and habits of mind. Students will use the processes of scientific inquiry while applying values, attitudes, and ways of thinking that will help them become better thinkers and problem solvers.
Grade 3, 6 & 8	Science Standard 2	Safety. Students will know and apply safety skills, rules and procedures (including traditional knowledge and practices) at school (inside and outside the classroom) and in everyday life.
Grade 3, 6 & 8	Science Standard 5	Physical science and technology. Students will understand the concepts of matter, energy and motion and how technology is related to science.

Grade 8	Social Studies Standard 1	Culture
Grade 8	Social Studies Standard 2	History and Economics
Grade 8	Social Studies Standard 3	Geography

MISAT Participation 2018:

The MISAT is administered annually at all public and private schools, during March to May of each school year. The testing period of three months is necessary in order to reach the 112 private and public primary and secondary schools scattered over the 22 inhabited atolls and islands in the Marshall Islands. The number of students who sat the MISAT during the 2017-18 school year and participation rates are provided in the table below. It is noted that for grades 3, the participation rate is under 50% because it was decided that for the year, students in grade 3 would take only two out of the four grade 3 tests. During the administration of the tests, errors were found in the grade 3 science tests and therefore its administration was terminated.

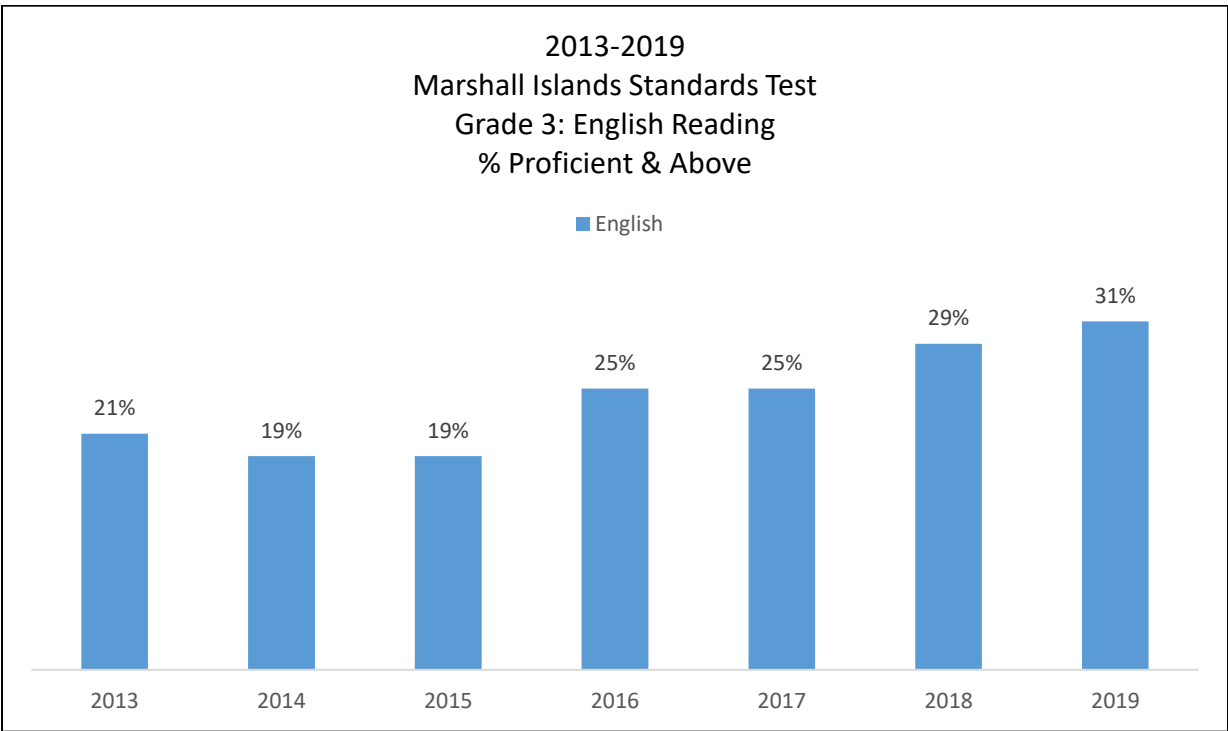
<i>Level</i>	<i>Subject Area</i>	<i>No. Tested</i>	<i>SpEd Tested</i>	<i>Total Tested</i>	<i>Enrollment</i>	<i>Participation Rate</i>
<i>Grade 3</i>	English	825	12	837	1173	71.36%
	Marshallese	825	12	837	1173	71.36%
	Math	794	11	805	1173	68.63%
<i>Grade 6</i>	English	897	40	937	1202	77.95%
	Marshallese	901	40	941	1202	78.29%
	Math	915	36	951	1202	79.12%
<i>Grade 8</i>	All Subjects	1115	38	1153	1155	99.83%
<i>Grade 10</i>	English	652	23	675	833	81.03%
	Math	640	23	663	833	79.59%
<i>Grade 12</i>	English	526	22	548	598	91.64%
	Math	534	22	556	598	92.98%
<i>All Grades Tested</i>		8624	279	8903	11142	79.90%

MISAT I Grade 3 Results:

Grade 3 English Reading Standards 2: Read Fluently and with Comprehension in English

Performance: 2013- 2019

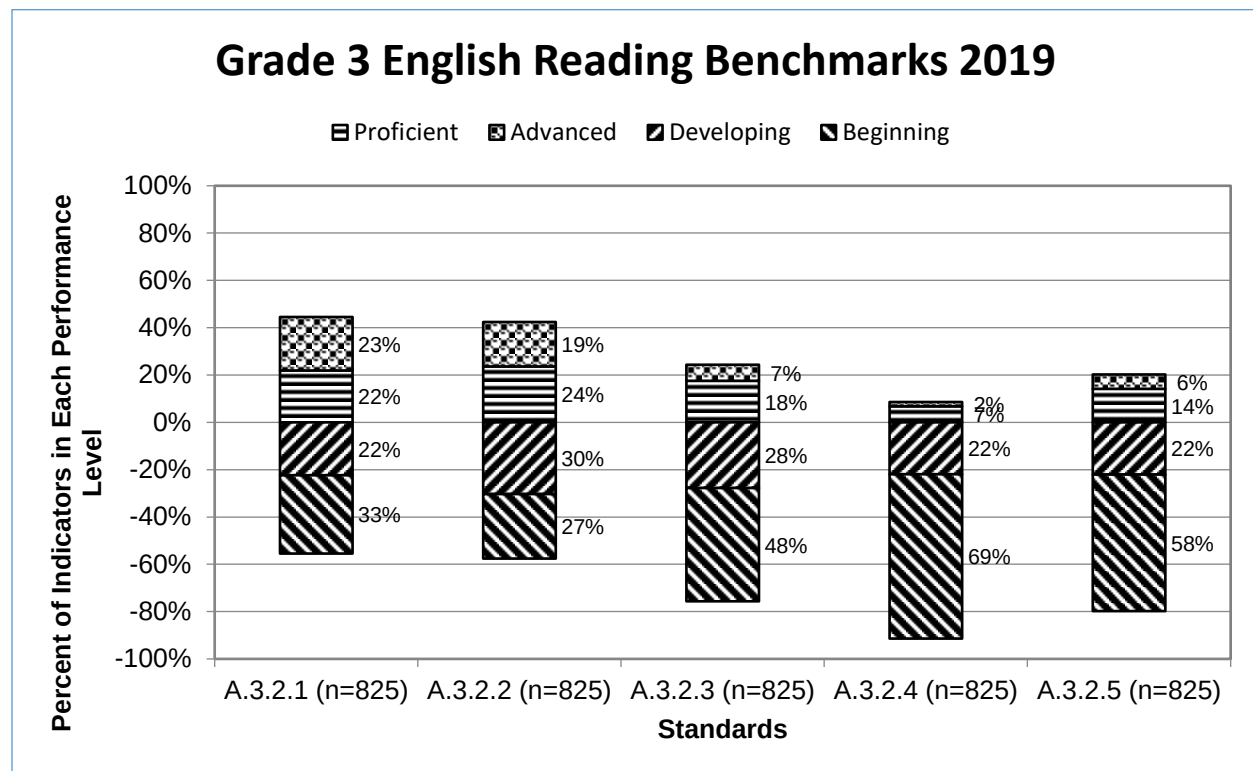
The graph below shows that students performed at proficient or advanced on 31% of the Reading Benchmarks in 2019, compared to 21% in 2013. This is a noteworthy improvement of ten percentage points. However, it should also be noted that 69% of the benchmarks were still not mastered in 2019. The improvement had been static from 2012 to 2015, then in 2016, a sizeable improvement begins to take place. There were 825 grade 3 students who took the Grade 3 English Reading test out of a total enrollment of 1,173 in 2019.



Grade 3 English Reading Benchmarks Performance 2019

The graph below shows students’ performance broken down by the English reading benchmarks. It shows the percentage of students performing at the four proficiency levels on the six reading benchmarks selected for assessment. It can be seen that benchmark A.3.2.4, “Select and apply reading strategies effectively”, has only 9% mastery or meeting the expected benchmark level, and it is the lowest in all the benchmark levels. On the other hand, students performed best on benchmark 3.2.1 “Increase foundational and academic vocabulary, “dealing with basic vocabulary,” with 45% of indicators having students performing at proficient or

advanced levels. The chart shows additional works needed for benchmarks A.3.2.4 and A.3.2.3 (“Read a variety of texts”) and A.3.2.5 (“Comprehend fiction, non-fiction and procedural texts”).

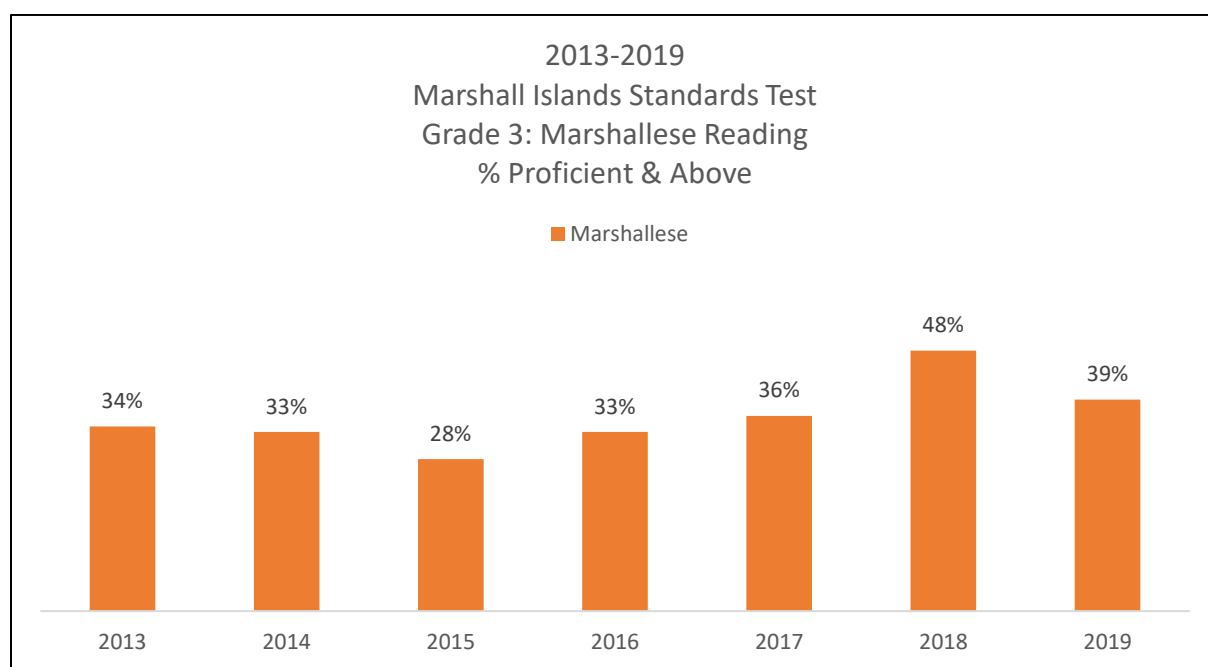


Grade 3 English Reading Standard 2: Ready fluently and with comprehension in English	
Benchmark	Description
A 3.2.1	Increase foundational and academic vocabulary
A 3.2.2	Read with fluency.
A 3.2.3	Read a variety of texts indecently.
A 3.2.4	Expand Marshallese reading vocabulary.
A 3.2.5	Comprehend fiction, non-fiction and procedural texts.

Grade 3 Marshallese Reading Standard: 2 Read fluently and with comprehension in Marshallese

Performance: 2013-2019

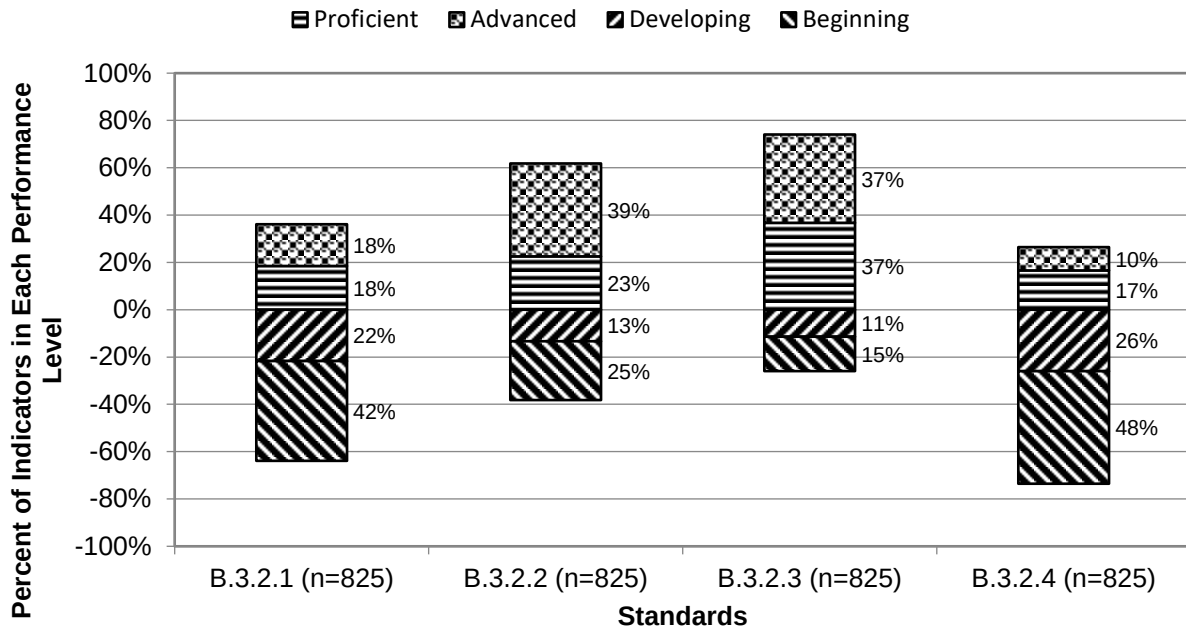
The graph below shows that between 2013 and 2019, the percentage of benchmarks students performed at proficient or advanced levels increased from 34% in 2013 to 39% in 2019, however a nine percent dropped from 2018 compared to 2019. This indicate that in 2019 61% of the Marshallese reading standards still need to master or meet the expected grade 3 level. Performance on grade 3 Marshallese reading took a dip to the lowest level at 28% in 2015 and made somewhat improvements over the years. Last year has made sizeable improvement culminating in the 48% proficiency percentage in 2018. There were 825 grade 3 students who took MISAT I Marshallese test out of a total enrollment of 1,173 in 2019.



Grade 3 Marshallese Reading Benchmarks Performance 2019

The benchmark performance graph below shows that benchmark B.3.2.4, “Select and use appropriate strategies to read and interpret a variety of texts,” lags quite a bit behind the other three Marshallese reading benchmarks. It had students performing below grade 3 expected level on 73% of the benchmark indicators. At the other end, benchmark B.3.2.3, “Expand Marshallese reading vocabulary”, only 26% of the indicators had students performing below expected grade 3 level. Benchmarks B.3.2.2 and B.3.2.1, “Read with good pronunciation and intonation” and “Read a variety of texts” 38% and 64% of indicators being performed at below expected levels. Training for teachers in teaching B.3.2.4 and B.3.2.1 is needed as both had below 50% performance at proficient or advanced levels.

Grade 3 Marshallese Reading Benchmarks 2019



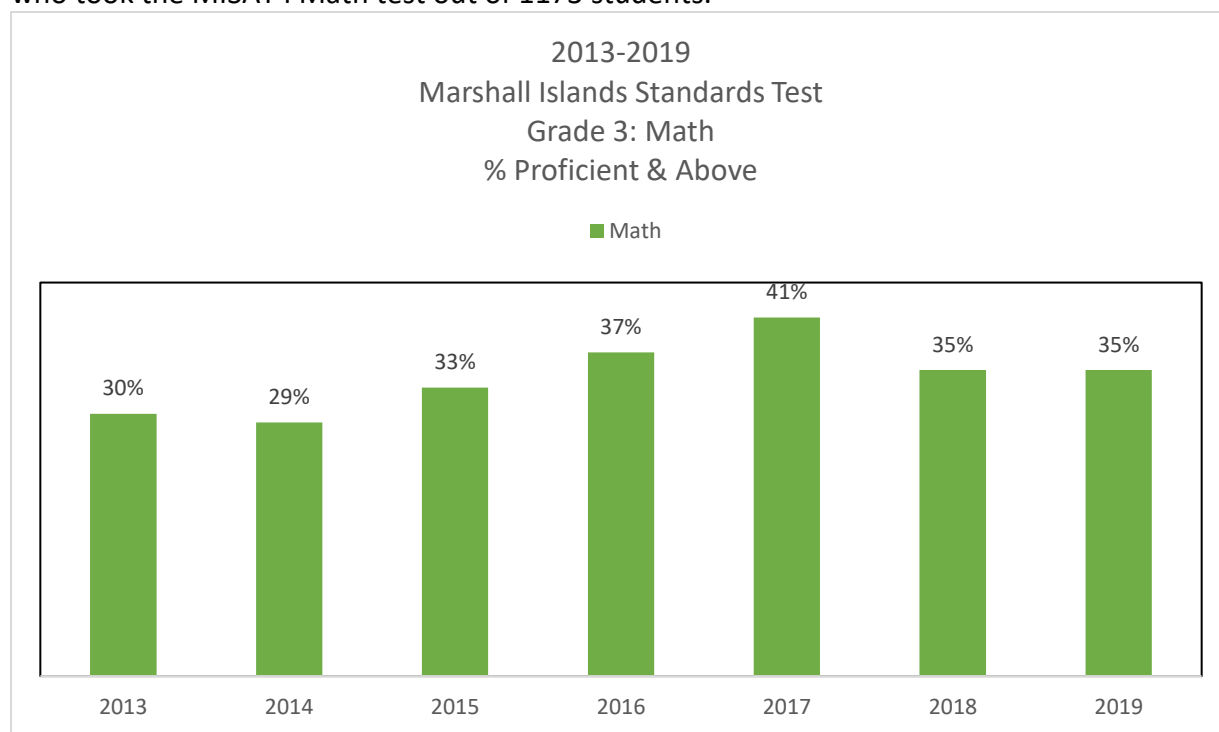
Grade 3 Marshallese Reading Standard 2: Ready fluently and with comprehension in Marshallese

Benchmark	Description
B 3.2.1	Read a variety of texts.
B 3.2.2	Read with good pronunciation and intonation.
B 3.2.3	Expand Marshallese reading vocabulary.
B 3.2.4	Select and use appropriate strategies to read and interpret a variety of texts.

Grade 3 Math Standard 1 – Number Sense, Operations, Mental Computations and Estimation; Standard 2 – Geometry and Measurement Concepts

Performance 2013-2019

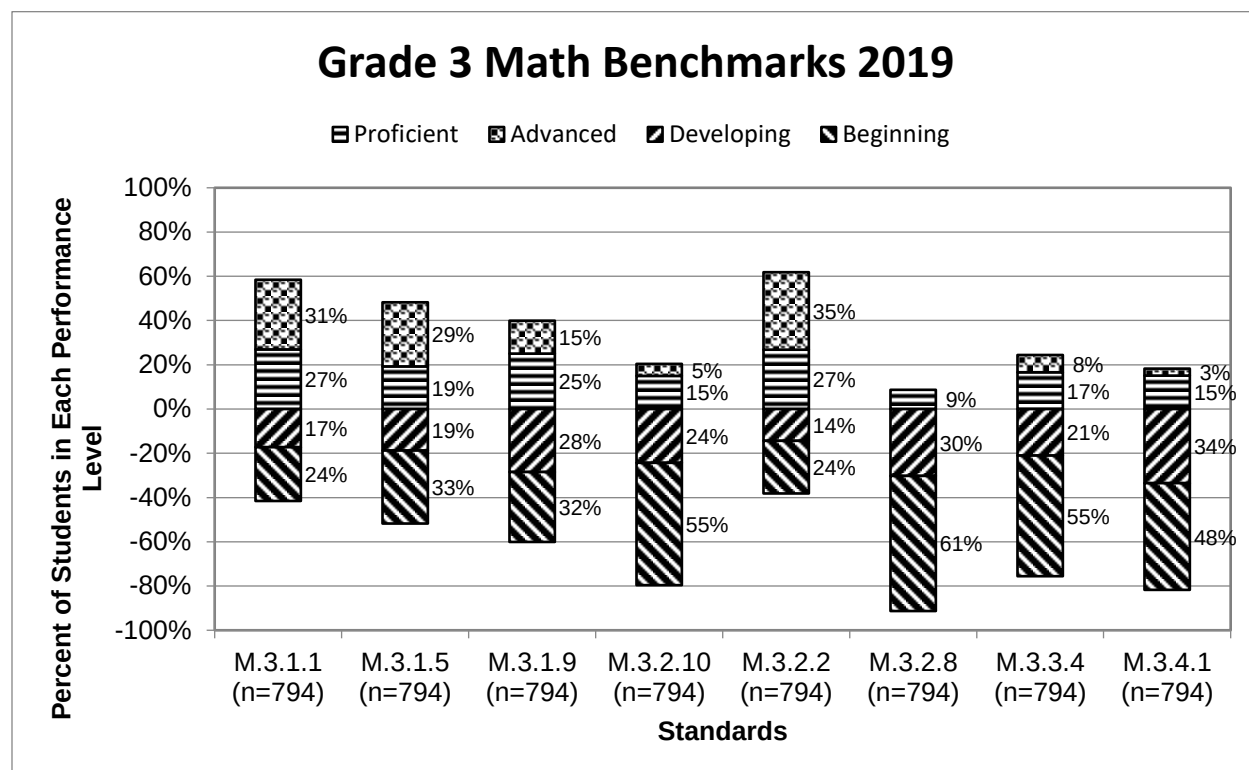
The graph below shows student performance raising from 30% in 2013 to 35% in 2019 in the two math standards. This percent of standards mastery was higher at 37% in 2016 and even higher at 41% in 2018, but then declined to the present level in 2018 and 2019. It is assumed that the dip is caused mainly by the transition to Singapore math being now implemented away from the math curriculum on which the test is based. Revision of the math test at the elementary level is being considered by PSS in order to align the test with this curriculum change and the follow-on instructional practices. It should also be noted that students are not mastering 65% of grade 3 math benchmarks in these two standards. There were 794 students who took the MISAT I Math test out of 1173 students.



Grade 3 Math Benchmarks Performance 2019

The graph below shows that students performed very poorly on benchmarks M.3.2.8 and M.3.4.1, “Use square tiles and cubes to measure area and volume,” and “Collect data and answer survey questions.” These had 9% and 18% performance at proficient and advanced levels respectively. On the other hand, benchmarks M.3.1.1, “Count by rote using whole numbers from 1 to 999” and M3.2.2., “Draw familiar three dimensional figures,” had students mastering 58% and 62% of the benchmark indicators. M.3.2.8. and M.3.3.4. “Measuring area and volume,” “Describing a pattern,” also had students performing below standards on over 60% of the indicators. Possible reasons for these low percentages are teachers lacking adequate understanding in these content area or they have not reached these benchmarks but MISAT

administration has begun. These could be some of the factors that affect the performance of students in the MISAT.



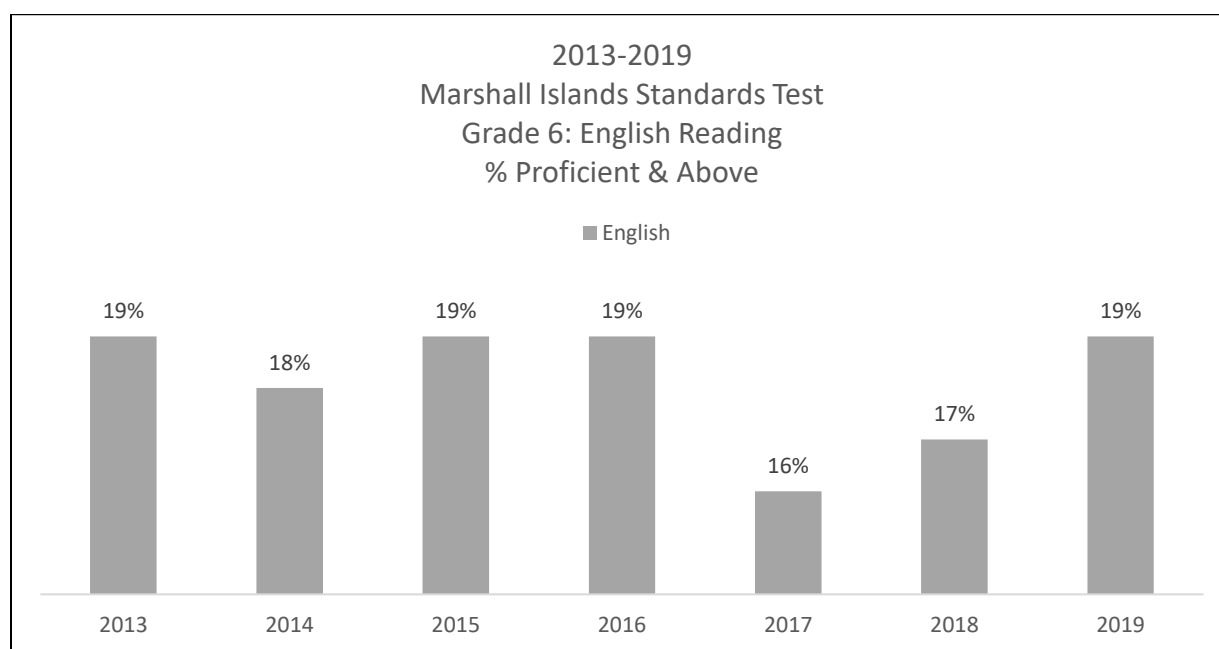
Grade 3 Math Standards	
Benchmark	Description
M 3.1.1	Count by rote using whole numbers from 1 to 999
M 3.1.5	Use base 10 blocks or other materials to show equivalent models of number. Explain why they are equivalent.
M 3.2.2	Draw familiar three dimensional figures including sphere, cube cylinder, rectangular prism, cone and square pyramid: · Accurately draw and label familiar three-dimensional figures.
M.3.2.8	Use square tiles and cubes to measure area and volume.
M.3.2.10	Tell time using hours, half hours, quarter hours and minutes.
M.3.3.4	Describe a pattern in words.
M.3.4.1.	Collect data and answers to survey questions.

MISAT II Grade 6 Results

Grade 6 English Standard 2: Read fluently and with comprehension in English

Performance 2013-2019

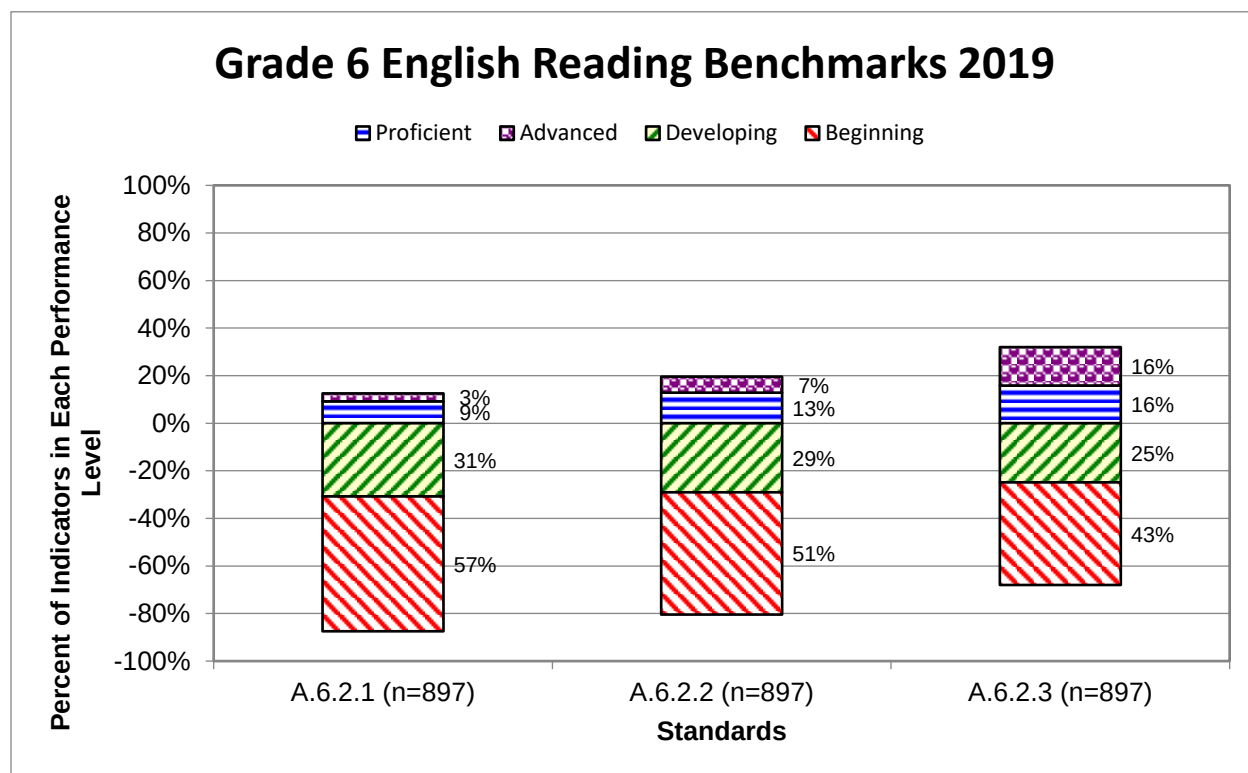
Students are not progressing in their English standard levels from grade 3 to grade 6, as is shown by the very low bars indicating low performance on the graph below. Furthermore, there is a 2% increase in 2019 compared to 2018. From 2012 to 2019, there is over 80% of grade 6 reading benchmarks students are performing at beginning or developing, not mastery levels. This indicates that grade 6 teachers are having great difficulty teaching grade 6 English Reading standard to students who have not been adequately prepared for grade 6 level English Reading. This also means that this shortcoming cannot be fixed at the sixth grade level, but needs to be addressed at the earlier grade levels.



Grade 6 English Reading Benchmarks Performance 2019

The benchmark performance levels in 2019 grade 6 English MISAT indicate shortcomings at all levels. In all the benchmark, sixth grade students could not perform at expected grade 6 levels on more than 70% of the benchmark indicators. However, we should also note that there is slight improvements in all three benchmark compared 2018 to 2019. Students were able to perform at mastery levels in 2018, 7% increased to 12% in 2019, 12% to 20% and 24% to 32% of the benchmark indicators. The English reading benchmark with the highest percentage of student mastery at 32% was A.6.2.3, “Analyze literature,” while the benchmark with the lowest mastery at only 12% was A.6.2.1 “Build vocabulary.” These are basic English reading skills which these students are not able to master. As stated earlier in the section above on the Grade 6 reading standard performance from 2013-2019, it is safe to conclude that students

upon entering grade 6 are not ready to perform grade 6 English reading work on level. These very low performance levels indicate that the problem needs to be addressed only at the sixth grade level, but needs intervention at the earlier grade levels.

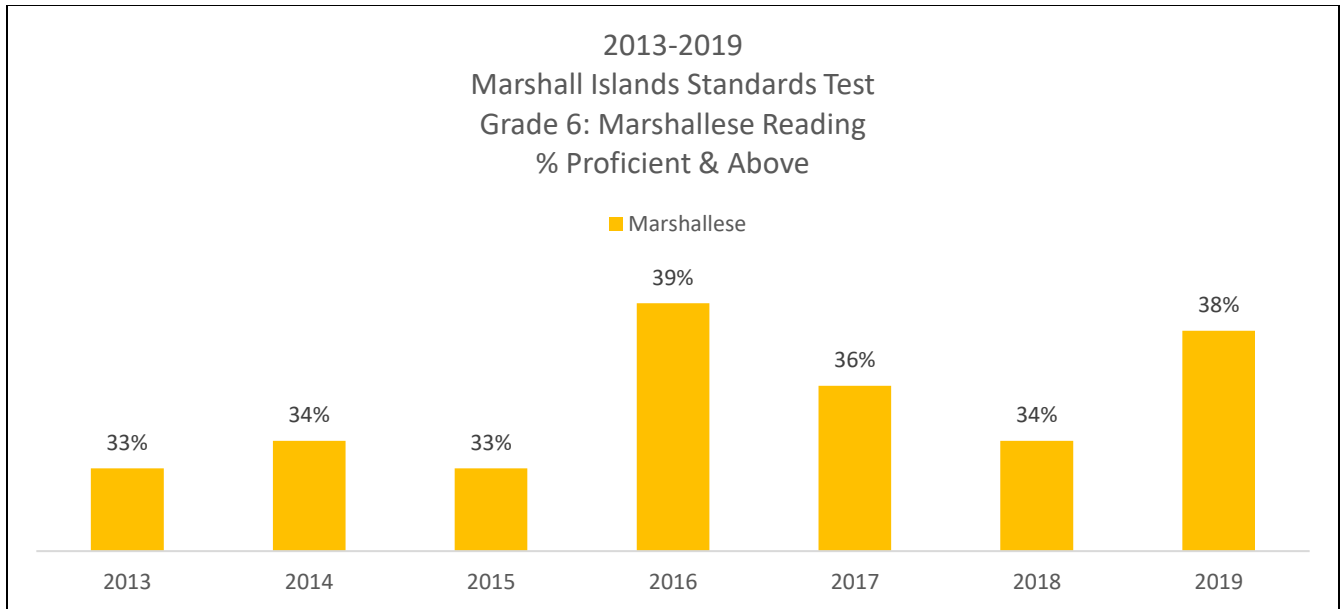


Grade 6 English Reading Standard 2: Read fluently and with Comprehension in English	
Benchmark	Description
A.6.2.1	Build Vocabulary
A.6.2.2	Use comprehension strategies.
A.6.2.3	Analyze literature.

Grade 6 Marshallese Reading Standard 2: Read fluently and with comprehension in Marshallese

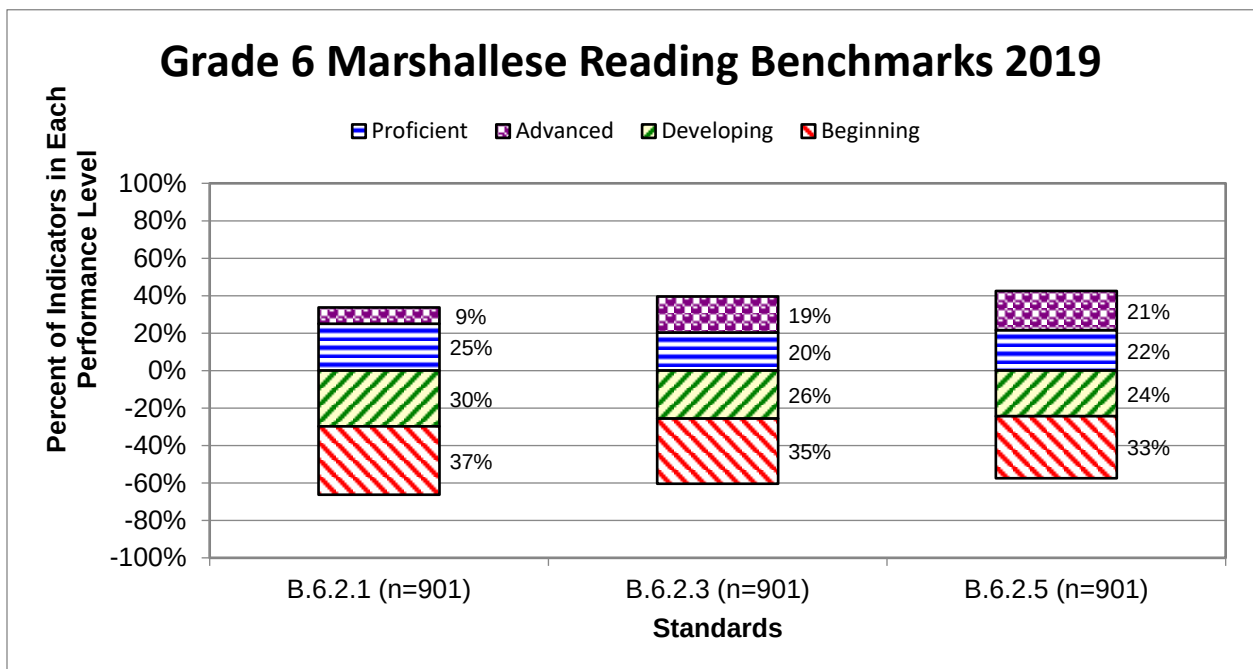
Performance: 2013-2019

Student performance at Grade 6 Marshallese reading is more sustaining, with performance at proficient levels at over 30% between 2013 and 2019. However, this performance has been stuck at around the 2013 level with minor ups and downs over the years. On the other hand there is improvement compared to 2018 at 34% to 38% in 2019. Clearly, teaching intervention is not being implemented to effect improvement in performance as there is 60% did not master the grade six Marshallese reading. There were 897 students who took the MISAT II Marshallese test out of 1202.



Grade 6 Marshallese Reading Benchmarks Performance 2019

Students performed below expected grade 6 Marshallese reading levels in all indicators for all three grade 6 Marshallese reading benchmarks, with students failing 77% of indicators in benchmark B.6.2.1 on “Reading a variety of Marshallese texts,” failing 62% of indicators in benchmark B.6.2.3 on “Expand vocabulary through general and content reading,” and failing 58% of indicators in benchmark B.6.2.5 on “Demonstrating comprehension and understanding.” This shows that teachers need new strategies to address grade 6 student inadequacies, which, as mentioned above, are carried over from the earlier grade levels.

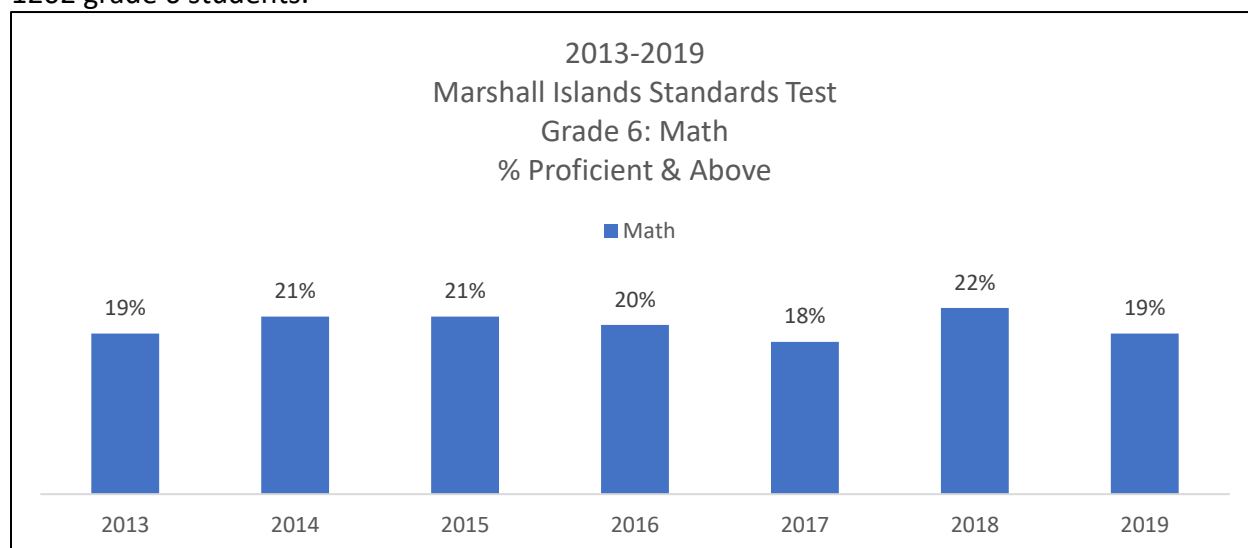


Grade 6 Marshallese Reading Standard 2: Read fluently and with Comprehension in English	
Benchmark	Description
B.6.2.1	Read a variety of Marshallese texts.
B.6.2.3	Expand vocabulary through general and content reading:
B.6.2.5	Demonstrate comprehension and understanding.

Grade 6 Math Standard 1: Number Sense, Operations, Mental Computations & Estimation; Standard 2: Geometry and Measurement; Standard 3: Patterns, Functions & Algebra; Standard 4: Statistics & Probability

Performance 2013-2019

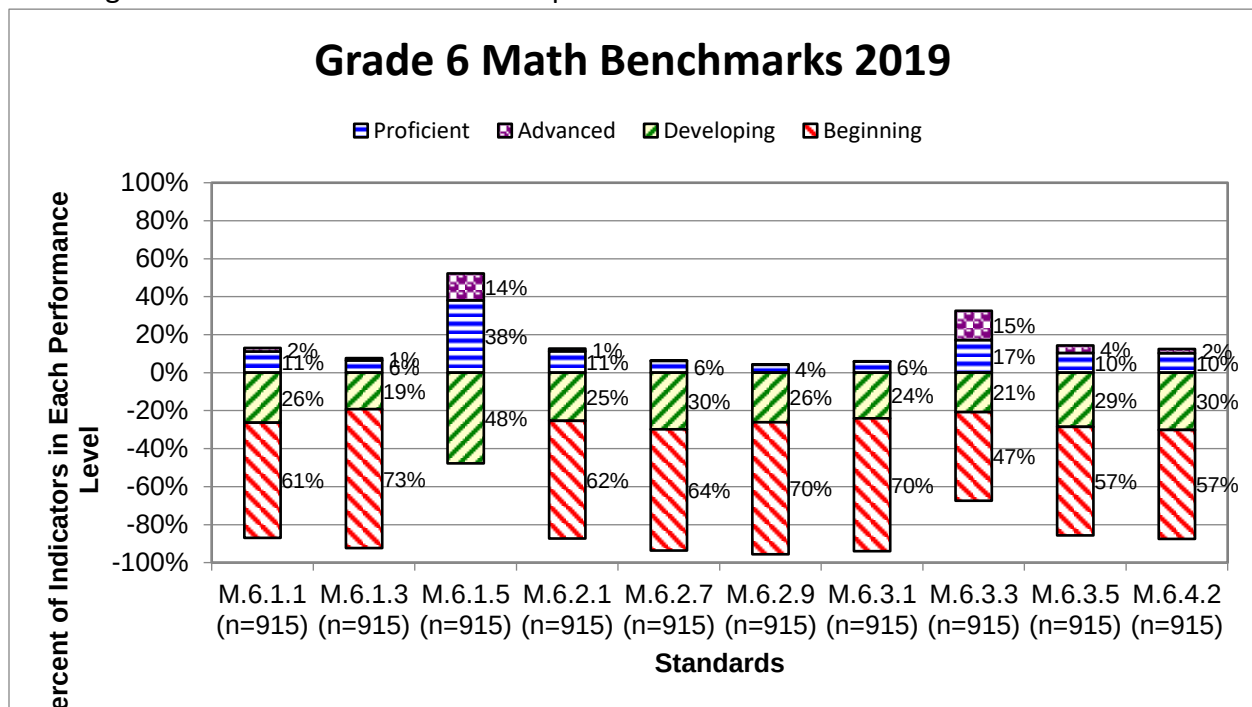
Grade 6 math performance is similar to grade 6 English reading, with proficiency performance at 21% or lower from 2012 to 2018, meaning they still don't understand up to 79% of the benchmarks. As with grade 6 English and Marshallese reading, the performance levels have been static from 2012 to 2018, with 20% proficiency in 2012 and again 20% proficiency in 2018. Again as with grade 6 English and Marshallese reading, this indicates that students are also inadequately prepared to take on grade 6 math level work. Intervention is required to effect any improvement, not only at grade 6, but perhaps very importantly, at earlier grade levels to address these inadequacies. There were 915 students who took the MISAT II Math test out of 1202 grade 6 students.



Grade 6 Math Benchmarks Performance 2019

Student performance is very low on all grade 6 math benchmark, except for benchmarks M.6.1.5 and M.6.3.3, on “place values for whole numbers and decimals...” and “graphing points on the coordinate plane...” respectively, with 52% and 32% mastery. On the rest of the benchmarks, students performed at mastery levels on 15% to only 4%. Clearly, there is much

teaching intervention needed to effect improvement on 8 out of 10 of these benchmarks.



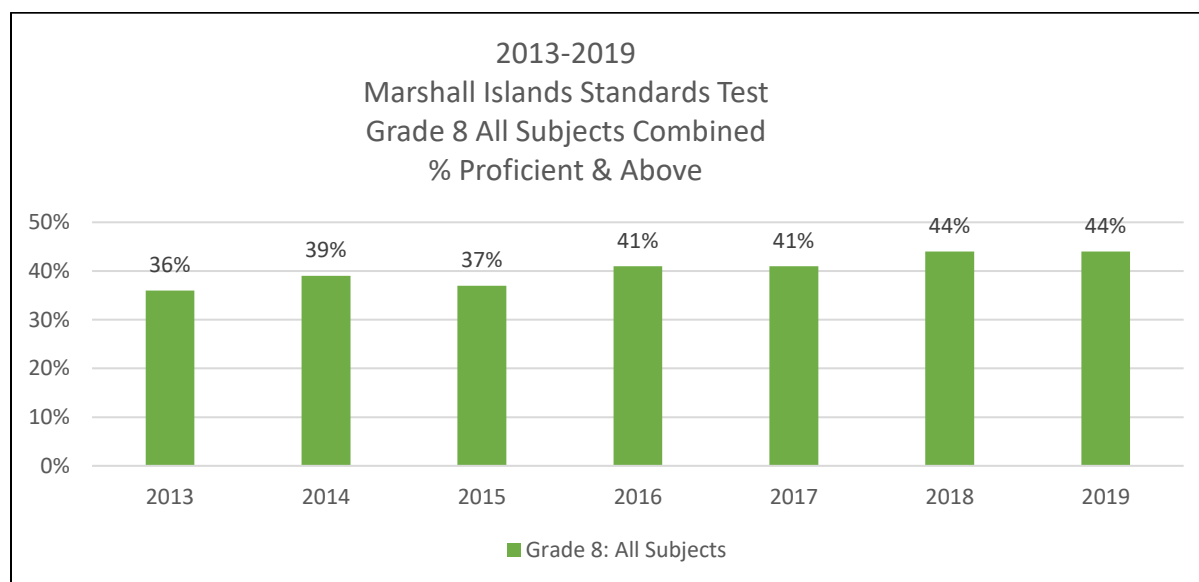
Grade 6 Math Benchmarks	
Benchmark	Description
M.6.1.1	Find place value for whole numbers and decimals; compare and order whole numbers, decimals and fractions.
M.6.1.3	Round and estimate whole numbers and decimals.
M.6.1.5	Solve problems using ratios, rates, proportions.
M.6.2.1	Identify the relations among angles.
M.6.2.7	Find the areas of plane figures and circles.
M.6.2.9	Find surface area and volume of solid figures.
M.6.3.1	Model and use variables in algebraic expressions.
M.6.3.3	Graph points on the coordinate plane in all four quadrants.
M.6.3.5	Find the rule of sequences.
M.6.4.2	Read a make graphs frequency table, histograms, stem-and-leaf plots.

MISAT III Grade 8 Results

Grade 8 High School Entrance Test Standards. Standard 1: English Reading; Standard 2: English Writing; Standard 3: Marshallese Reading; Standard 4: Math; Standard 5: Science; Standard 6: Social Studies

Performance 2013-2019

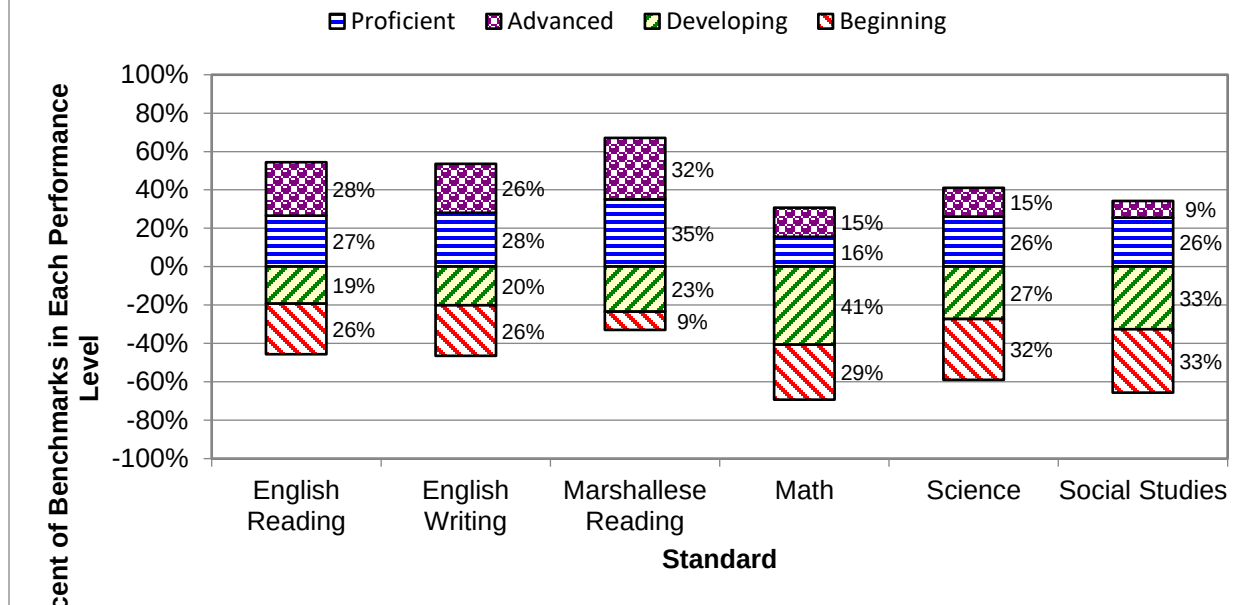
Unlike the grade 6 performance levels, student performance on the grade 8 high school entrance test is not only substantially higher but it is also showing substantial improvement between 2013 and 2019. The graph below displays the progress made between 2013 and 2019 in percent of benchmarks mastered from 39% in 2013 to 44% in 2019. The 8th grade high school entrance test is regarded as “high stake” not only for students seeking to enter regular nine grade in the public high schools, but also for the reputation of principals, head teachers, and classroom teachers in the community. The number and percent of passing students from a school provides an instant impression of performance by the school. Therefore, both teachers and students take the test very seriously and try to do their best in preparation. There were 1115 students who took the MISAT III High School Entrance test out of 1155.



Grade 8 Subject Areas Performance 2019

The following graph shows how students performed on the grade 8 test by subject areas. It shows Marshallese Reading having the best student mastery with over students 67% of the benchmarks being mastered, and math having the lowest student performance at only 31% of the benchmarks having students performing at proficient or advanced. English Reading and Writing both had over 50% mastery while Science and Social Studies had 41% and 35% respectively.

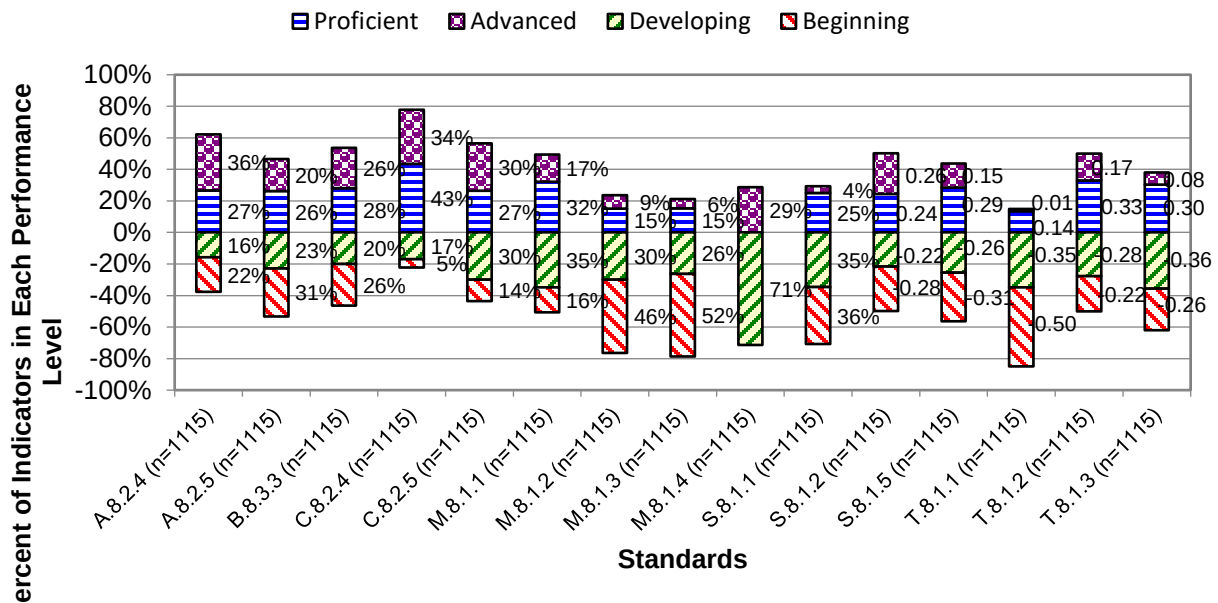
Grade 8 High School Entrance Test Benchmarks 2019



Grade 8 Benchmarks Performance 2019

The graph below displays how students performed in individual benchmark indicators in the subject areas tested in the 8th grade test. The benchmarks with the highest percentage of students at proficient or advanced levels were C.8.2.4.1 “Marshallese Reading comprehension and understanding,” at 77% mastery, and the second highest was A.8.2.4, “English Reading fluency,” with 63% mastery. At the low end, students struggled most with benchmark T.8.1.1, “Culture: knowledge and understanding of the roles of leaders (traditional),” which had students performing at proficient or advanced on only 15% of the indicators, and M.8.3.1, “Write and evaluate numerical and variable expressions,” also at 21% mastery. These highs and lows confirm the subject area performance levels in the proceeding graph. The rest of the benchmarks had from 27% to 54% mastery.

Grade 8 - High School Entrance Test Benchmarks 2019



Grade 8: MISAT III - High School Entrance Test

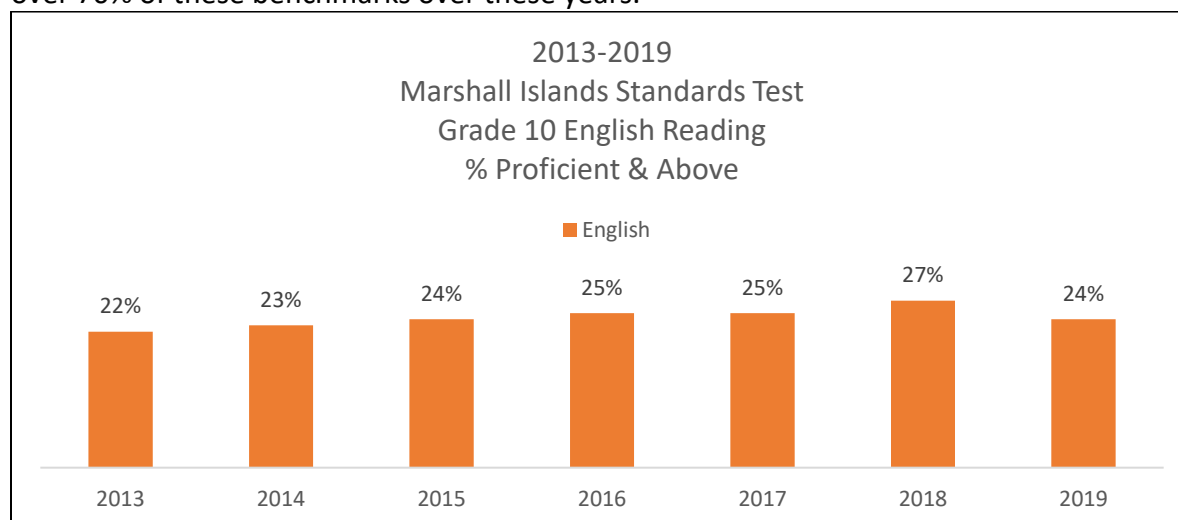
Benchmark	Description
A.8.2.4	English Reading fluency: Review the reading purpose to select and apply appropriate strategies.
A.8.2.5	English Reading fluency: Demonstrate comprehension of fiction, non-fiction and procedural texts.
B.8.3.3	English Writing: Writing Conventions.
C.8.2.4	Marshallese Reading: Select and use appropriate strategies to read and interpret a variety of texts,
C.8.2.5	Marshallese Reading: Demonstrate comprehension and understanding
M.8.1.1	Identify rational numbers and solve fraction and decimal problems.
M.8.2.1	Expand knowledge of polygons.
M.8.3.1	Write and evaluate numerical and variable expressions.
M.8.4.1	Use graphs to analyze data.
S.8.1.1	Scientific Inquiry: Use process of scientific inquiry and apply values, attitudes, and ways of thinking to become better thinkers and problem solvers.
S.8.2.1	Safety: Know and apply safety skills, rules, and procedures.
S.8.5.1	Physical Science: Understand the concepts of matter, energy, and motion.
T.8.1.1	Culture: Demonstrate knowledge and understanding of the roles of leaders (traditional Irooj, political, and spiritual) in traditional society.
T.8.2.1	History & Economics: Identify and describe historical events across the Pacific and the world; Identify sources of money used by the RMI government.
T.8.3.1	Geography: Demonstrate understanding of geographic concepts and tools.

MISAT IV Grade 10 Results

Grade 10 English Standard 2 - Read fluently and with comprehension; Standard 3 – Write fluently for a variety of purposes and audiences.

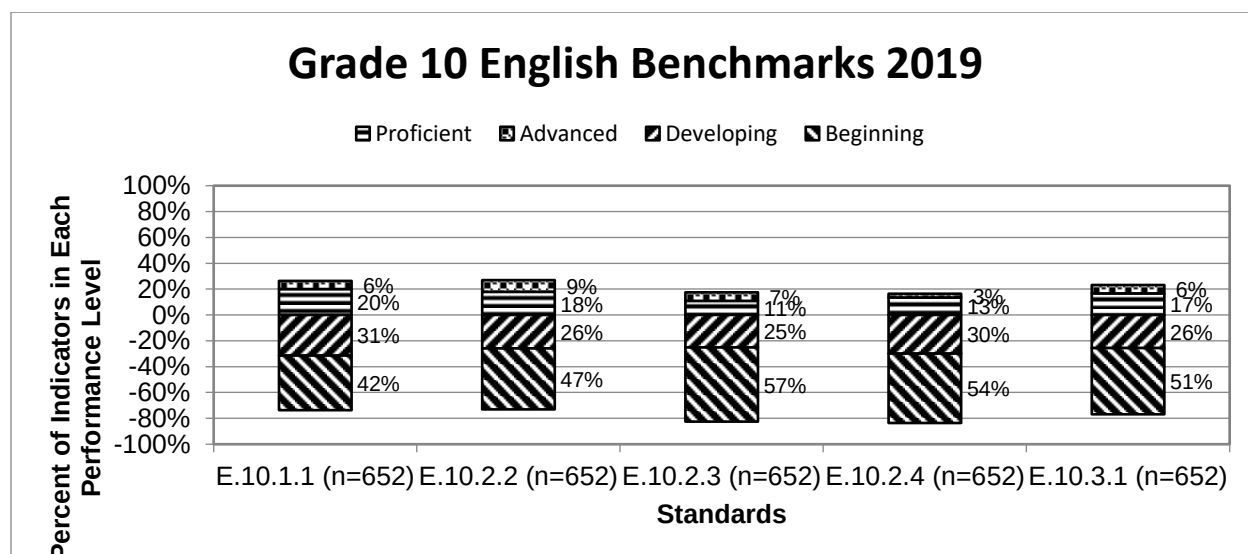
Performance 2013 – 2019

Student performance in Grade 10 English Reading and Writing has steadily increased from 22% in 2013 to 24% in 2018. However, the rate is very slow given that students are not mastering over 70% of these benchmarks over these years.



Grade 10 English Reading Benchmarks Performance 2018

Benchmarks E.10.2.2, “Identify and understand structures of a story...” was the benchmark students performed best on at 27% proficient and above; while benchmark E.10.2.4, “Access a variety of resources to gather and organize information...” was the lowest with only 16% proficiency. Across the board, all Grade 10 reading benchmarks need substantial improvements as students performed below expected grade level in over 70% of the indicators. There were about 652 students who took the MISAT IV English out of 833.

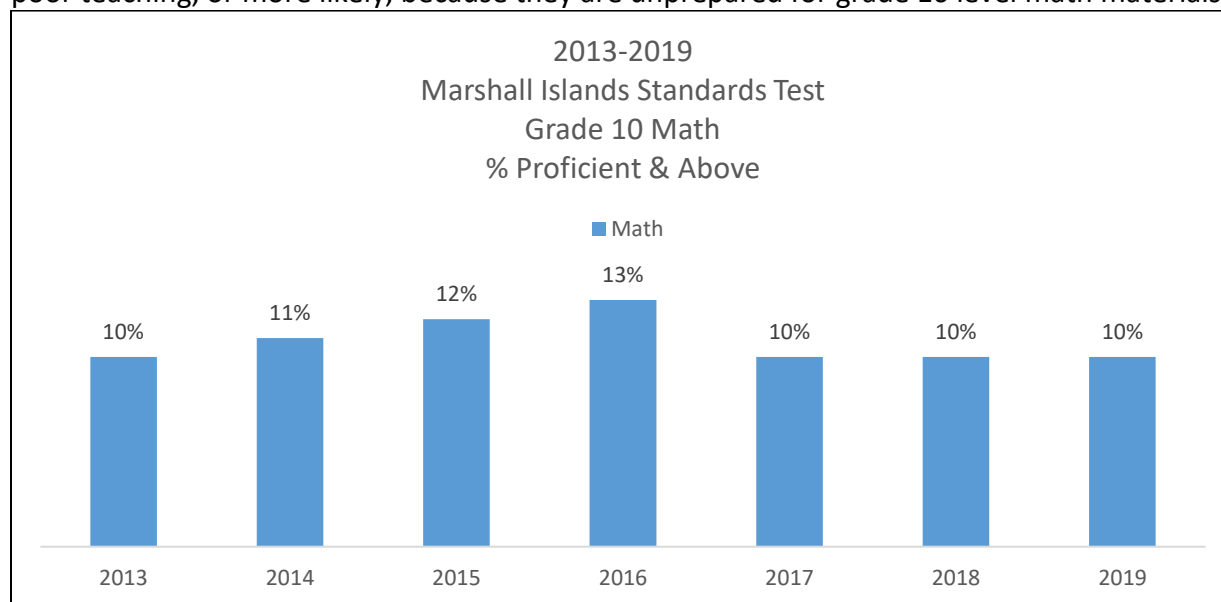


Grade 10 English Reading Standard 2: Read fluently and with comprehension	
Benchmark	Indicator
E.10.2.1	Read and respond to various forms of nonfiction and expository English publications: Produce a comprehensive summary of reading.
E.10.2.2	Identify and understand structures of a story such as themes, plot, setting, & characterization. Theme, plot, setting, & characterization.
E.10.2.3	Read and critically respond to various texts: Question the author's purpose for writing; Determine the perspective the author is taking; Understand reader's perspective; Distinguish fact from fiction.
E.10.2.4	Access a variety of resources to gather and organize information: Locate information; Use appropriate criteria to evaluate the accuracy of the information.
E.10.3.1	Use correct forms of English to communicate their intended meaning.

Grade 10 Math Standard 1: Number Sense, Operations, Mental Computations and Estimation; Standard 3: Patterns, Functions and Algebra Concepts; and Standard 4: Statistics and Probability.

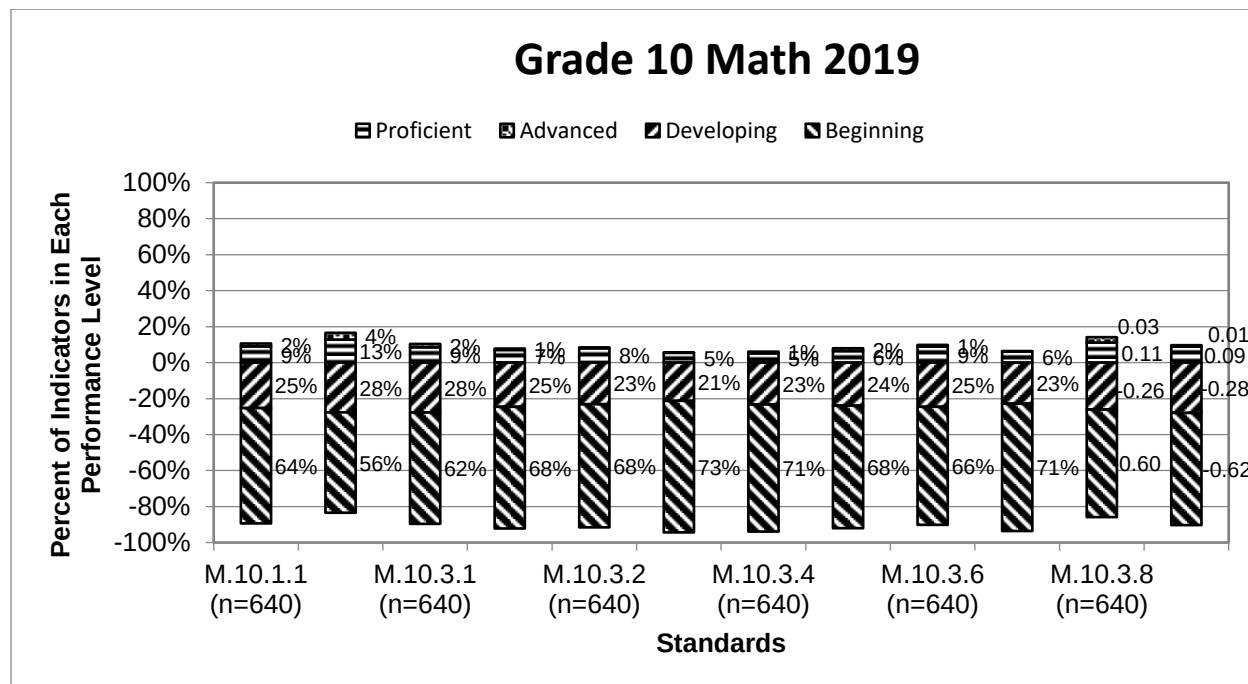
Performance: 2013-2019

The grade 10 math performance graph below shows the lowest performance levels on all the MISAT test results for 2013 to 2019 from how low the bars are. The best student performance was in 2016 when grade 10 students mastered a meager 13% of grade 10 math benchmarks. To make matters even worse, the proficiency level of 10% in 2013 is still the same in 2018 at 10% also. There were 640 students who took the test out of 833. Additional training is necessary. Clearly, grade 10 students are having great difficulty in grade 10 math due to either poor teaching, or more likely, because they are unprepared for grade 10 level math materials.



Grade 10 Math Benchmarks Performance 2018

All across the grade 10 math benchmarks, and since 2013 as well, every benchmarks is passed by less than 13% of all students at the expected grade level. Clearly, grade 10 math benchmarks are not taught correctly if at all. Monitoring of and intervention in grade 10 math instruction is called for.



Grade 10 Math Standard 1: Number Sense, Operations, Mental Computations and Estimation.

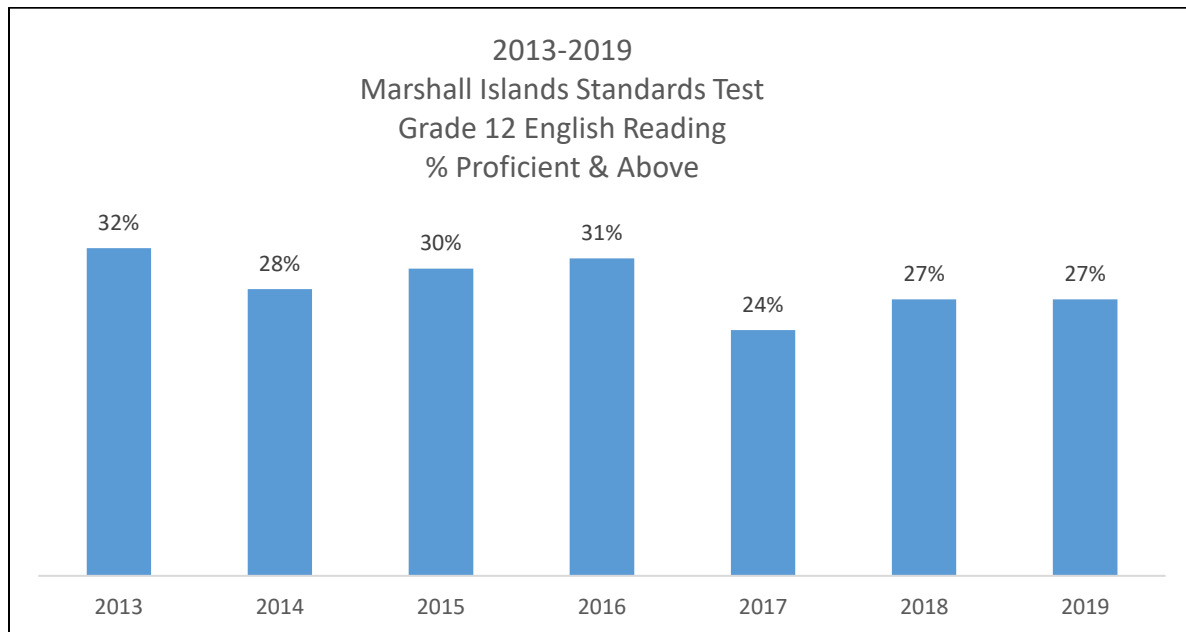
Benchmark	Indicator
M.10.1.1	Operate integer exponents: Evaluate or simplify expressions containing zero and integer exponents.
Standard 2: Geometry & Measurement	
M.10.2.1	Understanding Mathematical sets: Find intersection of the union of two or three sets.
Standard 3: Patterns, functions, and algebra concepts	
M.10.3.1	Solve and apply equations to real world problems: Review how to solve first degree equations in one unknown and make equations to solve real world problems.
M.10.3.2	Solve and apply inequalities to real world problems: Solve inequalities
M.10.3.3	Identify functions and graph functions: Graph functions using tables of independent and dependent variables; Solve real world problems using functions.
M.10.3.4	Identify and use linear functions: Understanding linear functions and graphs.
M.10.3.5	Solve systems of linear equations including special systems: Solve and graph linear equations in two variables and describe how to check a solution of a system of linear equations
M.10.3.6	Solve and graph linear inequalities in two variables: Identify solution of systems of linear inequalities; Graph linear inequalities in two variables; Apply linear inequalities to real world problems.
M.10.3.7	Solve and graph systems of linear inequalities in two variables: Identify solutions of systems of linear inequalities; Solve systems of linear inequalities by graphing.
M.10.3.8	Add, subtract and multiply polynomials:
M.10.3.9	Factor polynomials: Find and factor GCF of monomials and polynomials.
M.10.3.10	Identify and graph quadratic functions: Identify quadratic functions and properties.

MISAT V Grade 12 Results

Grade 12 English Standard 2 - Read fluently and with comprehension; Standard 3 – Write fluently for a variety of purposes and audiences

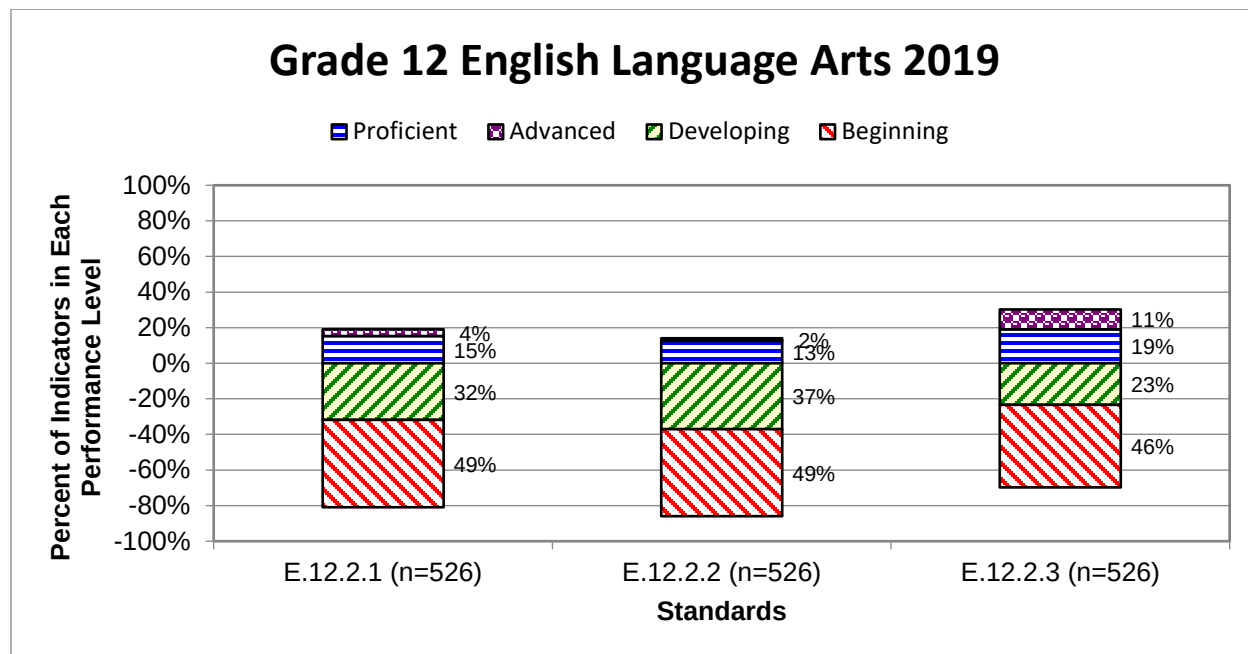
Performance: 2013-2019

The overall student performance on Grade 12 English Reading and Writing decline from 32% of benchmarks performed at proficient or advanced in 2013 to 27% in 2019. In fact, 2013 had the highest performance level between 2013 and 2018, and the low was 24% in 2017. The participation for grade 12 English is 526 out of 598. Note that for 2019, in 73% of grade 12 English reading and writing benchmarks students are performing below expected grade 12 levels.



Grade 12 English Reading Benchmarks Performance 2018

Of the three 12 English benchmarks assessed, Benchmark E.12.2.3, “Use level-appropriate standard conventions of English writing,” had the highest mastery level from students at 30% proficient or advanced, while benchmark E.12.2.2, “Access and produce information using various modes...” had the lowest at only 15% proficient.

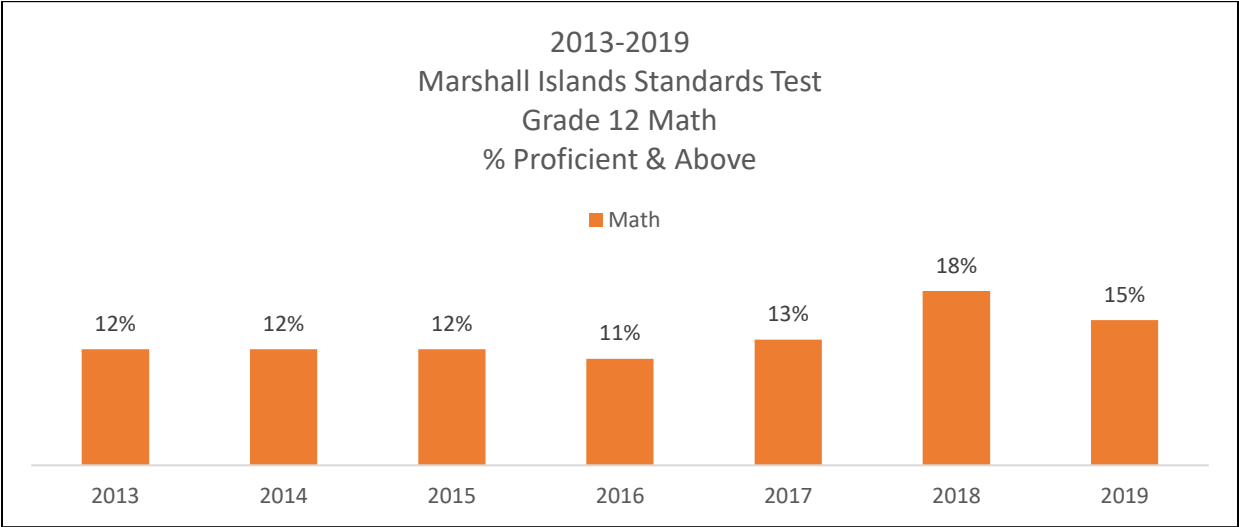


GRADE 12 English Language Arts Standard 2: Read fluently and with comprehension.	
Benchmark	Indicator
E.12.2.1	Analyze an array of writing in various genres and form a solid literary base from which they will be prepared to enter college.
E.12.2.2	Access and produce information using various modes of production (technology, poetry, visually, print).
E.12.2.2.2	Access and produce information using various modes of production: Access information (literary and informational text).
E.12.2.3	Write fluently for a variety of purposes and audiences: Use level-appropriate standard conventions of English: Spelling

Grade 12 Math Standard 1: Number Sense, Operations, Mental Computations & Estimation; Standard 3: Patterns, Functions and Algebra Concepts; Standard 4: Statistics and Probability Concepts

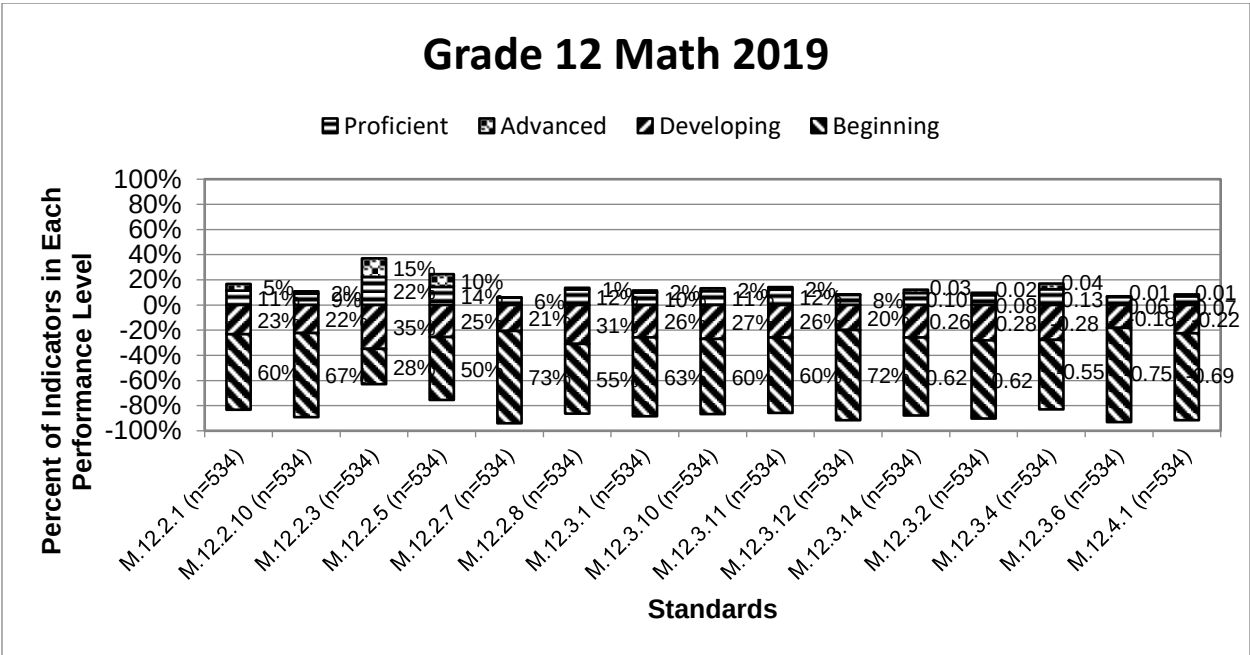
Performance 2013-2019

There are 534 students who took part in the MISAT V: math test out of 598. Note that 85% still needs to master or meet expected level of grade 12 math standards.



Grade 12 Math Benchmarks Performance 2019

Student performance on the grade 12 math test resulted in an overall 15% proficiency on all benchmarks, lower than the previous year. Individual benchmarks results showed a high of 37% proficiency in benchmark M.12.2.3, “properties and angle relations in triangle” and a very low of 7% in M.12.3.2, “knowledge and properties of functions.” Overall, students have not mastered any of the grade 12 math benchmarks.



Grade 12: Mathematics	
Standard 2: Geometry and measurement concepts.	
Benchmark	Indicator
M.12.2.1	Explore Parallel and Perpendicular lines: Identify the angles formed by two lines and transversal.
M.12.2.3	Know properties and angle relations in triangle. Identify and prove triangle congruent: Prove triangles congruent by using SSS, SAS, ASA, AAS, and HL. Prove theorems about isosceles and equilateral triangles. Prove the Pythagorean Theorem and use it to solve problems.
M.12.2.5	Classify and find all roots of quadratic equations. Find all roots of quadratic equations by using quadratic formula.
M.12.2.7	Identify and apply trigonometric ratios: Find the distance by using angle of elevation and angle of depression.
M.12.2.8	Develop area and perimeter formulas: Develop and apply the formulas for the area of triangles, special quadrilaterals, circles and regular polygons.
M.12.2.10.1	Identify the relations between a line and a circle and use the properties to solve problems: Identify the relation between a line and a circle as a chord, a secant, and a tangent. Use these properties to solve problems.
Standard 3: Patterns, functions, and algebra concepts.	
M.12.3.1	Transfer geometric concepts into coordinated plane: Solve absolute-value equations and inequalities and graph the solution on the number line. Graph and translate absolute-value function on a coordinate plane
M.12.3.2	Expand knowledge about properties and attributes of functions: Identify parent functions from graphs and equations. Use parent functions to model real-world data and make estimates for unknown values. Translate between the various representations of functions and solve problems by using the various representations.
M.12.3.4	Graph linear systems in three dimensions: Graph point and linear equations in three dimensions. Represent solutions to systems of equations in three dimensions. Solve systems of equations in three dimensions algebraically
M.12.3.6	Solve quadratic inequalities: Write and solve a quadratic inequality in two variables by using tables, graphs and algebra.
M.12.3.10	Identify trigonometric values for all angles and define trigonometric functions: Find conterminal and reference angles. Identify the trigonometry functions and find the values of angles in standard position. Convert angle measures between degrees and radians. Find the value of trigonometric functions on the unit circle. properties; Translate between logarithms in any base. Use the Laws of Sin and Cosines to find the side lengths and angle measures of a triangle.
M.12.3.11	Identify rational functions, simplify rational expressions and solve rational equations and inequalities: Identify direct, inverse, joint and combined variations, find the constant of variation, and write an equation for the variation. Operate and simplify rational expressions including complex fractions. Graph a rational function, find its domain, write equations for its asymptotes, and identify any holes in its graph.
M.12.3.12	Identify radical functions, simplify radical expressions and solve radical equations and inequalities: Analyze the graphs of radical functions, and tell the domain and the transformation for the square root parent function, $y = \sqrt{x}$. Operate and simplify radical expressions using rationalizing denominators. Solve radical equations and inequalities.
M.12.3.14	Classify conic sections: Write an equation for a circle. Graph a parabola and identify its focus, directory, and axis of symmetry.
Standard 4: Statistics and probability concepts.	
M.12.4.1	Calculate geometric probabilities: Calculate geometric probabilities using length, angle measures or area. Use geometric probabilities to predict results in real world situations

Summary and Conclusions 2013 - 2019:

The graph below summarizes student performance on the MISAT tests for years 2013 – 2019, by elementary and high schools. Overall, elementary students performance is better than high school students on the curriculum benchmarks by 10% or more over these years. For elementary schools, in 2013, students performed at proficient or advanced on 26% of the benchmarks in all MISAT tests for grades 3, 6 & 8 combined, while in 2019, the percentage has increased to 32%. This is a small increase of four percentage overall. For the high schools, in 2013, overall percent proficiency in grades 10 & 12 tests combined was 17%, and in 2019, it has increased to 19%. This rate of improvement definitely needs to be increased.

