

Education

Annual Report Update
2011-2012

Alberta 

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Education

2011-2012 Annual Report Update: Results Analysis Section Related to Provincial Testing

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Review Engagement Report



To the Members of the Legislative Assembly

I have reviewed the performance measure identified as “Reviewed by Auditor General” in the *Ministry of Education 2011-12 Annual Report Update: Results Analysis Section Related to Provincial Testing*. The reviewed performance measure is the responsibility of the Ministry and is prepared based on the following criteria:

- Reliability – information used in applying performance measure methodology agrees with underlying source data for the current and prior years’ results.
- Understandability – the performance measure methodology and results are presented clearly.
- Comparability – the methodology for performance measure preparation is applied consistently for the current and prior years’ results.
- Completeness – the goal, performance measure and related target match those included in the Ministry’s Budget 2011.

My review was made in accordance with Canadian generally accepted standards for review engagements and accordingly, consisted primarily of enquiry, analytical procedures and discussion related to information supplied to me by the Ministry.

A review does not constitute an audit and, consequently, I do not express an audit opinion on the performance measure. Further, my review was not designed to assess the relevance and sufficiency of the reviewed performance measure in demonstrating Ministry progress towards the related goal.

Based on my review, nothing has come to my attention that causes me to believe that the “Reviewed by Auditor General” performance measure in the Ministry’s 2011-12 Annual Report Update is not, in all material respects, presented in accordance with the criteria of reliability, understandability, comparability, and completeness as described above.

[Original signed by Merwan N. Saher, FCA]

Auditor General

September 28, 2012

Edmonton, Alberta

The performance measure reviewed by the Auditor General is noted with an asterisk (*) on the Performance Measures Summary Table

Results Analysis

Performance Highlights

- The percentage of students who achieved the acceptable standard in Language Arts has increased over time from 79.5 per cent in 2007-08 to 81.0 per cent in 2011-12; similarly the proportion of those who achieved the standard of excellence has risen from 17.2 per cent to 18.1 per cent. However, Language Arts results did not meet overall targets at the acceptable standard or the standard of excellence.
- The participation rate for Language Arts provincial achievement tests, which is the proportion of enrolled students that write the tests, was similar to that of previous years averaging approximately 90 per cent.
- Language Arts results on diploma examinations have declined over time, particularly at the standard of excellence. The proportion of students achieving the standard of excellence has dropped from 13.7 per cent in 2007-08 to 11.2 per cent in 2011-12 primarily due to lower results in English Language 30-1; however results in this subject have shown a significant one year improvement compared with the previous year. Language Arts results did not meet overall targets at either the acceptable level or the level of excellence.
- Mathematics results on diploma examinations remained stable and did not meet targets at either the acceptable standard or the standard of excellence.
- A key challenge for the K-12 education system remains the substantial gap between testing results for First Nations, Métis and Inuit (FNMI) students and the results for all students. In this regard, the percentage of FNMI students who achieved the acceptable standard has improved more than it has for all students: from 59.7 per cent in 2007-08 to 62.9 per cent in 2011-12, a gain of approximately three per cent. On the other hand, the percentage of FNMI students who achieved the standard of excellence has remained unchanged at six per cent over the same period. FNMI results for Language Arts achievement tests did not meet overall targets at the acceptable standard or the standard of excellence.
- Over the past five years, the FNMI participation rate for Language Arts provincial achievement tests, which is the proportion of enrolled FNMI students that write the tests, has risen steadily from 80 per cent in 2007-08 to 85 per cent in 2011-12.
- Overall FNMI results for Language Arts diploma examinations met targets at both the acceptable standard and the standard of excellence. Overall FNMI results for Mathematics diploma examinations met the target at the acceptable standard, but not at the standard of excellence.

Performance Measures Summary Table

The performance measures and targets for 2011-12 that are related to Provincial Achievement Test and Diploma Examination results are established in the Ministry of Education Business Plan for 2011-14. Targets are considered met if the current result is not significantly different from the target value using statistical tests.

The table below presents a summary of performance measures reported in the Results Analysis section, pages 9-26, including:

- 2011-12 target and most recent results
- change over time (five-year trend)

Goals/Performance Measure(s)			Prior Years' Results				Target	Current Actual
1	Success for every student							
1.a	Overall percentage of students who achieved standards on provincial achievement tests in English and French Language Arts and Français	acceptable excellence	79.5% 17.2% 2007-08	80.8% 17.1% 2008-09	81.6% 17.6% 2009-10	81.7% 17.4% 2010-11	82.0% 18.5%	81.0% 18.1% 2011-12
1.b*	Overall percentage of students who achieved standards on diploma examinations:							
	Language Arts	acceptable excellence	87.9% 13.7% 2007-08	87.1% 11.4% 2008-09	86.6% 10.2% 2009-10	86.1% 9.9% 2010-11	87.9% 11.9%	87.4% 11.2% 2011-12
	Mathematics	acceptable excellence	79.8% 21.1% 2007-08	81.2% 22.2% 2008-09	81.1% 24.3% 2009-10	78.8% 22.7% 2010-11	81.4% 24.6%	79.8% 21.8% 2011-12
3	Success for First Nations, Métis and Inuit students							
3.a	Overall percentage of self-identified FNMI students who achieved standards on provincial achievement tests in English and French Language Arts and Français	acceptable excellence	59.7% 5.3% 2007-08	61.4% 5.0% 2008-09	63.9% 5.7% 2009-10	63.2% 5.2% 2010-11	65.7% 7.4%	62.9% 5.7% 2011-12
3.b	Overall percentage of self-identified FNMI students who achieved standards on diploma examinations:							
	Language Arts	acceptable excellence	82.6% 8.3% 2007-08	81.3% 4.9% 2008-09	82.6% 5.7% 2009-10	84.2% 4.4% 2010-11	84.3% 8.1%	83.1% 7.0% 2011-12
	Mathematics	acceptable excellence	68.4% 10.7% 2007-08	73.0% 11.7% 2008-09	71.1% 10.1% 2009-10	69.8% 9.9% 2010-11	73.6% 12.7%	72.5% 9.3% 2011-12

***Indicates Performance Measure that has been reviewed by the Office of the Auditor General**

The performance measure indicated with an asterisk was selected for review by ministry management based on the following criteria established by government:

- Enduring measures that best represent the goal and mandated initiatives
- Measures for which new data is available
- Measures that have well established methodology.

Notes: For information on assessing change over time and target achievement, please refer to Endnote A, page 27.
For information on the methodology employed in the test measures please refer to Endnote B, pages 28 - 30.

Discussion and Analysis of Results

GOAL 1

Success for Every Student

Success for every student means that every student is well-prepared for lifelong learning, work and citizenship, and possesses the competencies to be successful. The ministry, in cooperation with its stakeholders and partners, assists students in achieving success by providing flexible programming options designed to address the diversity of student needs. The ministry also implements provincial and school-based student assessments.

Goal 1 Performance Measures

1.a Achievement Test Results in Language Arts

Rationale

- Overall student achievement of standards on provincial achievement tests is a sound indicator of whether elementary and junior high students are achieving high standards in language arts, an important outcome for Alberta's K–12 education system.

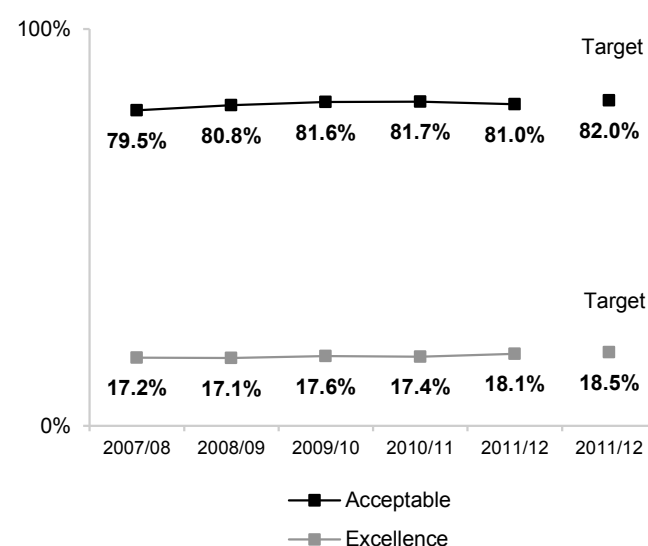
Target

- The targets for overall Language Arts results at the acceptable standard and at the standard of excellence were not met.

Discussion

- Overall results in Language Arts are calculated as an average of the results in the following seven subjects weighted by the number of individuals that were enrolled:
 - English Language Arts 3, 6 and 9
 - French Language Arts 6 and 9
 - Français 6 and 9
- Overall results at the acceptable standard and the standard of excellence have improved over time.
- To support student learning in core subjects, the Ministry provides programs of study and implementation guides for teachers and develops or authorizes learning resources for students in all grades and subjects.

Overall Percentages of Students who Achieved Standards on Grades 3, 6 and 9 Language Arts Provincial Achievement Tests



Source: Alberta Education.

Notes:

- The percentages of students who achieved the acceptable standard include the students who achieved the standard of excellence.
- Overall Language Arts results are a weighted average based on total enrolment in Grades 3, 6 and 9 Language Arts courses.
- See Endnote B, Provincial Achievement Tests, pages 28–29.

Participation Rates for Language Arts Provincial Achievement Tests
(in percentages)

Subject	2007/08	2008/09	2009/10	2010/11	2011/12
Grade 3					
English Language Arts	90	91	91	91	92
Grade 6					
English Language Arts	90	90	91	91	91
French Language Arts	96	98	98	97	97
Français	98	98	98	98	98
Grade 9					
English Language Arts	88	90	90	89	89
French Language Arts	97	95	98	97	97
Français	98	98	98	98	96
Overall Language Arts					
	89.3	90.3	90.8	90.5	90.8

Source: Alberta Education.

1.a Achievement Test Results in Language Arts for Students in Grades 3, 6 and 9

Rationale

- Student results on Provincial Achievement Tests in each grade and subject provide detailed information on whether elementary and junior high students are achieving high standards in language arts, an important outcome for Alberta's K–12 education system.

Target

- Targets for individual language arts subjects were not set in the 2011-14 Business Plan.

Discussion

- At the acceptable standard, results have improved over time for English Language Arts 3 and 6, and French Language Arts 9. Results for the remaining language arts subjects, namely English Language Arts 9, French Language Arts 6, and Français 6 and 9 have remained stable.
- At the standard of excellence, results have improved for English Language Arts 3 and 9, and French Language Arts 6. Results for Français 6 and 9 and French Language Arts 9 have remained stable and results for English Language Arts 6 have declined.
- As adult literacy studies are not conducted regularly, Grade 9 results in language arts are regarded as indicators of literacy. Students who achieve the acceptable standard have developed the foundational skills needed to become literate adults. Results at the acceptable standard have been stable over time for English Language Arts 9 and have improved for French Language Arts 9.

Percentages of Students in Grades 3, 6 and 9 who Achieved Standards on Provincial Achievement Tests in Language Arts

Subject	Standard	2007/08	2008/09	2009/10	2010/11	2011/12	Targets 2011/12
Grade 3							
English Language Arts	excellence	16	18	20	18	20	
	acceptable	80	81	82	82	82	
Grade 6							
English Language Arts	excellence	21	19	19	19	18	
	acceptable	81	82	83	83	83	
French Language Arts	excellence	14	16	16	17	17	
	acceptable	88	91	88	89	89	
Français	excellence	17	19	18	18	22	
	acceptable	94	93	91	92	91	
Grade 9							
English Language Arts	excellence	15	15	15	16	16	
	acceptable	77	79	79	79	77	
French Language Arts	excellence	12	10	12	15	12	
	acceptable	84	82	86	89	88	
Français	excellence	12	13	13	16	16	
	acceptable	85	86	84	90	85	
Overall Language Arts							
	excellence	17.2	17.1	17.6	17.4	18.1	18.5
	acceptable	79.5	80.8	81.6	81.7	81.0	82.0

Source: Alberta Education.

Notes:

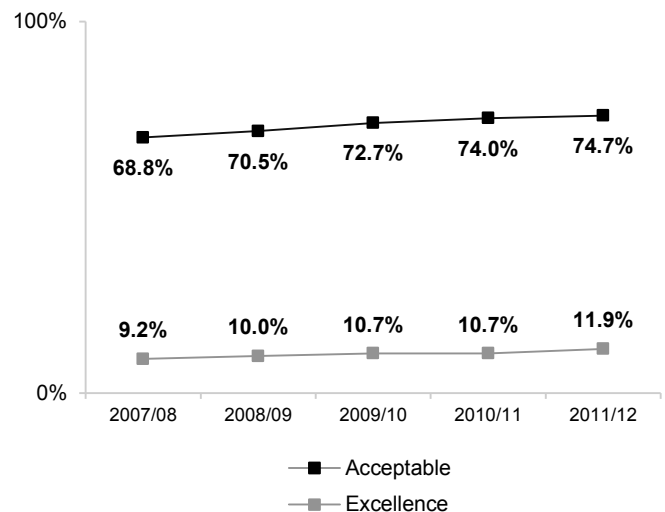
- The percentages of students who achieved the acceptable standard include the students who achieved the standard of excellence.
- See Endnote A, page 27, for information on assessing results relative to targets.
- See Endnote B, Provincial Achievement Tests, pages 28-29.

English as a Second Language (ESL) Achievement Test Results in Language Arts

Discussion (continued):

- ESL programs help students learn English while also learning about Canadian cultural values, customs and social expectations. The goal of ESL programs is to provide students with planned systematic instruction and support that will enable them to speak the English language fluently, further their education and become productive and contributing members of Albertan and Canadian society. ESL programming is funded for both Canadian-born and foreign-born students.
- Overall Language Arts results have improved from 2007-08 to 2011-12 at both the acceptable and excellence levels.

Overall Percentages of ESL Students who Achieved Standards on Grades 3, 6 and 9 Language Arts Provincial Achievement Tests



Source: Alberta Education.

Notes:

- The percentages of students who achieved the acceptable standard include the students who achieved the standard of excellence.
- Overall Language Arts results are a weighted average based on total enrolment in Grades 3, 6 and 9 Language Arts courses.
- See Endnote B, Provincial Achievement Tests, pages 28-29.

ESL Participation Rates for Language Arts Provincial Achievement Tests
(in percentages)

Subject	2007/08	2008/09	2009/10	2010/11	2011/12
Grade 3					
English Language Arts	86	87	89	89	91
Grade 6					
English Language Arts	87	86	89	89	90
French Language Arts	96	98	97	93	99
Français	100	99	99	98	98
Grade 9					
English Language Arts	83	83	84	85	86
French Language Arts	95	98	97	93	97
Français	96	97	98	100	98
Overall Language Arts					
	85.9	86.2	88.1	88.5	89.4

Source: Alberta Education.

Achievement Test Results for ESL Students in Grades 3, 6 and 9

Discussion (continued):

- At the acceptable standard, results have improved over time for all subjects except Français 6 and 9 which have remained stable.
- At the standard of excellence, results have improved over time for English Language Arts 3 and 9, and French Language Arts 6 and have remained stable for the remaining Language Arts subjects.

Percentages of ESL Students in Grades 3, 6 and 9 who Achieved Standards on Provincial Achievement Tests in Language Arts

Subject	Standard	2007/08	2008/09	2009/10	2010/11	2011/12
Grade 3						
English Language Arts	excellence	9	12	13	11	14
	acceptable	70	73	75	75	76
Grade 6						
English Language Arts	excellence	11	10	11	12	11
	acceptable	72	73	75	77	78
French Language Arts	excellence	5	21	15	14	17
	acceptable	79	90	80	80	92
Français	excellence	19	23	14	13	21
	acceptable	93	93	87	87	89
Grade 9						
English Language Arts	excellence	5	7	7	8	8
	acceptable	61	62	64	67	67
French Language Arts	excellence	3	7	10	20	11
	acceptable	66	77	80	78	82
Français	excellence	4	12	9	15	8
	acceptable	74	78	79	85	73
Overall Language Arts						
	excellence	9.2	10.0	10.7	10.7	11.9
	acceptable	68.8	70.5	72.7	74.0	74.7

Source: Alberta Education.

Notes:

- The percentages of students who achieved the acceptable standard include the students who achieved the standard of excellence.
- See Endnote A, page 27, for information on assessing results relative to targets.
- See Endnote B, Provincial Achievement Tests, pages 28-29.

Goal 1 Performance Measures

1.b Diploma Examination Results In Language Arts and Mathematics

Rationale:

- Student results on diploma examinations are a solid indicator of whether high school students are achieving high standards.
- Two diploma examination measures are reported. The first is an aggregate of four Language Arts courses and the second an aggregate of two Mathematics courses. This reflects a focus on fundamental literacy and numeracy skills, an important outcome for Alberta's K–12 education system.

Targets:

- The targets for the overall Language Arts results at the acceptable standard and at the standard of excellence were not met.
- The targets for the overall Mathematics results at the acceptable standard and at the standard of excellence were not met.

Discussion:

- The Language Arts measure is an average of the results in the following four subjects, weighted by the total number of individuals that wrote each of the exams:
 - English Language Arts 30-1
 - English Language Arts 30-2
 - French Language Arts 30-1
 - Français 30-1

Overall results in Language Arts at the acceptable level and at the standard of excellence have declined, primarily due to the lower results in English Language Arts 30-1. However, results in this subject have shown a significant one year improvement at both standards compared with the previous year.

- The Mathematics measure is an average of the results in the following two subjects weighted by the total number of individuals that wrote each of the exams:
 - Pure Mathematics 30
 - Applied Mathematics 30

Overall results in Mathematics at the acceptable standard and at the standard of excellence have been stable over time.

- Results at the acceptable standard have declined over time for English Language Arts 30-1 and remained stable for other Language Arts and Mathematics subjects.
- Results at the standard of excellence have improved over time for Pure Mathematics 30 and English Language Arts 30-2 and remained stable for Applied Mathematics 30. Results have declined over time for English Language Arts 30-1.
- The ministry is undertaking a major curriculum redesign aimed at ensuring Alberta's curriculum (programs of study, assessment, and learning and teaching resources) remains responsive and relevant for students. This project reflects the province's commitment to continually improve its work in providing a world-class, student-centred curriculum for students now and in the future.

Percentages of Students Writing Language Arts and Mathematics Diploma Examinations who Achieved Standards

Subject	Standard	2007/08	2008/09	2009/10	2010/11	2011/12	Targets 2011/12
English Language Arts 30-1	excellence	15	12	10	10	11	
	acceptable	87	86	85	84	86	
English Language Arts 30-2	excellence	9	8	10	9	11	
	acceptable	89	88	89	89	90	
French Language Arts 30-1	excellence	24	19	16	14	13	
	acceptable	95	95	94	95	96	
Français 30-1	excellence	25	33	16	20	19	
	acceptable	98	95	94	94	96	
Overall Language Arts	excellence	13.7	11.4	10.2	9.9	11.2	11.9
	acceptable	87.9	87.1	86.6	86.1	87.4	87.9
Pure Mathematics 30	excellence	26	26	30	29	27	
	acceptable	81	82	83	81	82	
Applied Mathematics 30	excellence	11	14	13	10	10	
	acceptable	76	79	77	74	76	
Overall Mathematics	excellence	21.1	22.2	24.3	22.7	21.8	24.6
	acceptable	79.8	81.2	81.1	78.8	79.8	81.4

Source: Alberta Education

Notes:

- The percentages of students who achieved the acceptable standard include the percentages of students who achieved the standard of excellence.
- Equating of diploma examinations has been phased in over the past number of years making results directly comparable from year to year for the equated tests. Results are comparable for all years reported from 2007-08 to 2011-12 for Pure Mathematics 30, Applied Mathematics 30, and English Language Arts 30-1 and 30-2.
- Overall results for language arts are a weighted average of results for the four language arts subjects. Overall results for mathematics are a weighted average of results for the two mathematics subjects.
- See Endnote A, page 27, for information on assessing results relative to targets.
- See Endnote B, Diploma Examinations, pages 29-30.

English as a Second Language (ESL) Diploma Examination Results in Language Arts and Mathematics

Discussion (continued):

- ESL programs help students learn English while also learning about Canadian cultural values, customs and social expectations. The goal of ESL programs is to provide students with planned systematic instruction and support that will enable them to speak the English language fluently, further their education and become productive and contributing members of Albertan and Canadian society. ESL programming is funded for both Canadian-born and foreign-born students.
- Overall Language Arts diploma examination results at the acceptable standard have improved over time for ESL students, whereas overall results at the standard of excellence have remained stable. The improvement in Language Arts results at the acceptable standard is due primarily to an increase in the number of students achieving the acceptable standard in English Language Arts 30-2.
- Overall Mathematics diploma examination results at the acceptable standard have been stable over time for ESL students. At the standard of excellence, overall Mathematics results have decreased over time primarily due to a decrease in the number of students achieving the standard of excellence in Pure Mathematics 30.

Percentages of ESL Students Writing Language Arts and Mathematics Diploma Examinations who Achieved Standards

Subject	Standard	2007/08	2008/09	2009/10	2010/11	2011/12
English Language Arts 30-1	excellence	4	3	1	2	4
	acceptable	63	60	60	57	65
English Language Arts 30-2	excellence	1	1	2	2	3
	acceptable	64	61	64	68	72
French Language Arts 30-1	excellence	10	24	20	24	25
	acceptable	70	76	88	82	90
Français 30-1	excellence	10	15	4	20	24
	acceptable	90	93	93	83	97
Overall Language Arts	excellence	3.0	2.7	2.0	2.1	3.7
	acceptable	63.6	61.1	63.3	62.1	68.9
Pure Mathematics 30	excellence	36	36	36	34	32
	acceptable	82	81	83	79	80
Applied Mathematics 30	excellence	4	4	5	5	4
	acceptable	52	53	48	53	60
Overall Mathematics	excellence	29.6	29.1	29.0	26.6	24.8
	acceptable	75.3	75.1	74.8	72.1	75.0

Source: Alberta Education.

Notes

- The percentages of students who achieved the acceptable standard include the students who achieved the standard of excellence.
- Equating of diploma examinations has been phased in over the past number of years making results directly comparable from year to year for the equated tests. Results are comparable for all years reported from 2007-08 to 2011-12 for Pure Mathematics 30, English Language Arts 30-1 and 30-2, and Applied Mathematics 30.
- See Endnote B, Diploma Examinations, pages 29-30.

GOAL 3

Success for First Nations, Métis and Inuit Students

Alberta's First Nations, Métis and Inuit students are provided with high-quality learning opportunities and supports to enable successful learning. The ministry will work collaboratively with First Nations and the federal government to enable equitable educational opportunities for all First Nations students. The ministry supports First Nations, Métis and Inuit student success by raising awareness of their unique needs; developing culturally relevant learning resources and programming opportunities; focusing on continuous improvement through appropriate accountability mechanisms; and working collaboratively with First Nations, Métis and Inuit communities.

Goal 3 Performance Measures

3.a First Nations, Métis and Inuit (FNMI) Achievement Test Results in Language Arts

Rationale:

- Overall FNMI student achievement of standards on provincial achievement tests is a sound indicator of whether FNMI elementary and junior high students are achieving high standards in language arts (English and French Language Arts and Français), an important outcome for Alberta's K–12 education system.

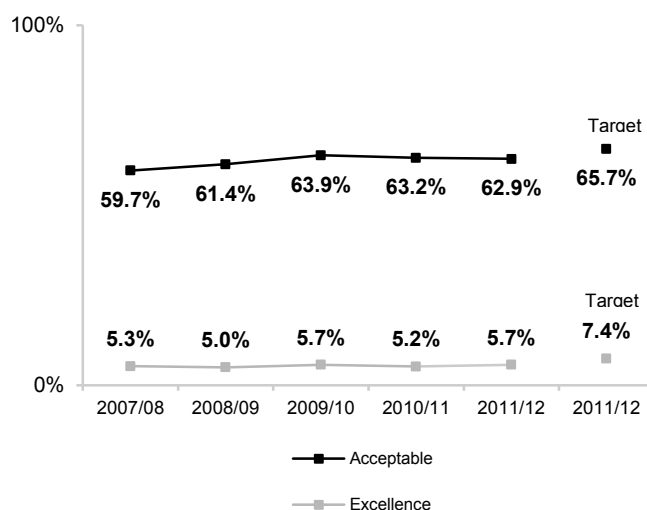
Target:

- The targets for overall Language Arts results at the acceptable standard and the standard of excellence were not met.

Discussion:

- Overall results in Language Arts are calculated as an average of the results in the following subjects weighted by the number of individuals that were enrolled. Two subjects, Français 6 and 9, were excluded from the calculations as either no students or less than six students wrote these tests.
 - English Language Arts 3, 6 and 9
 - French Language Arts 6 and 9
 - Français 6 and 9
- Overall results in Language Arts for self-identified FNMI students have improved at the acceptable standard.
- Overall results for FNMI students at the standard of excellence have been stable over time.
- Overall language arts test participation rates for FNMI students have increased over time, primarily because participation rates for Grades 3, 6 and 9 English Language Arts and Grade 6 French Language Arts tests have increased.

Overall Percentages of FNMI Students who Achieved Standards on Grades 3, 6 and 9 Language Arts Provincial Achievement Tests



Source: Alberta Education.

Notes:

- The results reported are solely based on students who identified themselves as Indian/First Nations, Métis, and Inuit. These students may not be fully representative of the population of Aboriginal students. Discretion should be applied when interpreting the results over time.
- The percentages of students who achieved the acceptable standard include the students who achieved the standard of excellence.
- Overall results are a weighted average based on total enrolment in Grades 3, 6 and 9 Language Arts courses.
- See Endnote B, Provincial Achievement Tests, pages 28-29.

FNMI Participation Rates for Provincial Achievement Tests *(in percentages)*

Subject	2007/08	2008/09	2009/10	2010/11	2011/12
Grade 3					
English Language Arts	86	85	86	87	90
Grade 6					
English Language Arts	83	81	84	86	87
French Language Arts	90	96	95	97	95
Français	*	*	*	*	*
Grade 9					
English Language Arts	71	75	76	76	76
French Language Arts	97	90	98	95	100
Français	n/a	n/a	n/a	*	n/a
Overall Language Arts					
	80.3	80.9	82.3	83.2	84.6

Source: Alberta Education.

Notes:

- An asterisk (*) indicates suppression has been applied because fewer than six students wrote the test, while n/a indicates no FNMI students wrote the test.

3.a FNMI Achievement Test Results in Language Arts—by Subject and Grade

Rationale:

- FNMI student results on provincial achievement tests in each grade and subject provide detailed information on whether FNMI elementary and junior high students are achieving high standards in Language Arts, an important outcome for Alberta's K-12 education system.

Target:

- Targets for individual Language Arts subjects were not set in the 2011-14 Business Plan.

Discussion:

- At the acceptable standard, results have improved over time for English Language Arts 6 and 9. Results for English Language Arts 3, French Language Arts 6 and 9 have remained stable.
- At the standard of excellence, results have improved for English Language Arts 3 and French Language Arts 6. Results for English Language Arts 9 and French Language Arts 9 have remained stable, and results for English Language Arts 6 have declined.
- As adult literacy studies are not conducted regularly, Grade 9 results in language arts are regarded as indicators of literacy. Students who achieve the acceptable standard have developed the foundational skills needed to become literate adults. Results at the acceptable standard have improved over time for English Language Arts 9.

Percentages of Self-Identified FNMI Students in Grades 3, 6 and 9 who Achieved Standards on Provincial Achievement Tests

Subject	Standard	2007/08	2008/09	2009/10	2010/11	2011/12	Targets 2011/12
Grade 3							
English Language Arts	excellence	6	6	7	6	7	
	acceptable	66	68	68	67	68	
Grade 6							
English Language Arts	excellence	7	6	6	6	5	
	acceptable	64	62	68	66	67	
French Language Arts	excellence	3	2	3	3	14	
	acceptable	74	87	70	80	85	
Français	excellence	*	*	n/a	*	*	
	acceptable	*	*	n/a	*	*	
Grade 9							
English Language Arts	excellence	3	3	4	4	4	
	acceptable	47	53	55	55	51	
French Language Arts	excellence	5	2	11	2	8	
	acceptable	77	69	71	75	83	
Français	excellence	n/a	n/a	n/a	*	n/a	
	acceptable	n/a	n/a	n/a	*	n/a	
Overall Language Arts							
	excellence	5.3	5.0	5.7	5.2	5.7	7.4
	acceptable	59.7	61.4	63.9	63.2	62.9	65.7

Source: Alberta Education.

Notes:

- The results reported are solely based on students who identified themselves as Indian/First Nations, Métis, and Inuit. These students may not be fully representative of the population of Aboriginal students. Discretion should be applied when interpreting the results over time.
- The percentages of students who achieved the acceptable standard include the students who achieved the standard of excellence.
- An asterisk (*) indicates suppression has been applied because fewer than six self-identified FNMI students wrote the test, while n/a indicates no self-identified FNMI students wrote the test.
- Overall language arts results include only English Language Arts 3, 6 and 9, French Language Arts 6 and 9.
- See Endnote A, page 27, for assessing results relative to targets.
- See Endnote B, Provincial Achievement Tests, pages 28-29.

Goal 3 Performance Measures

3.b First Nations, Métis and Inuit (FNMI) Diploma Examination Results in Language Arts and Mathematics

Rationale:

- FNMI student results on diploma examinations are a solid indicator of whether high school students are achieving high standards, an important outcome for Alberta's K–12 education system.
- Two diploma examination measures are reported. The first is an aggregate of four Language Arts courses and the second an aggregate of two Mathematics courses. This reflects a focus on fundamental literacy and numeracy skills, an important outcome for Alberta's K-12 education system.

Targets:

- The targets for overall FNMI Language Arts results at the acceptable standard and at the standard of excellence are considered met because the results are not statistically different from the target values.
- The target for overall FNMI Mathematics results at the acceptable standard was met and the target at the standard of excellence was not met.

Discussion:

- The Language Arts measure is an average of the results in the following four subjects, weighted by the total number of individuals that wrote each of the exams:
 - English Language Arts 30-1
 - English Language Arts 30-2
 - French Language Arts 30-1
 - Français 30-1
- Overall FNMI results in Language Arts diploma exams at the acceptable standard and the standard of excellence have been stable over time. Note that no students wrote the Français 30-1 exam in 2011-12.
- The Mathematics measure is an average of the results in the following two subjects weighted by the total number of individuals that wrote each of the exams:
 - Pure Mathematics 30
 - Applied Mathematics 30

Overall FNMI results in Mathematics diploma exams at both the acceptable standard and the standard of excellence have been stable over time.

Percentages of Self-Identified FNMI Students Writing Language Arts and Mathematics Diploma Examinations who Achieved Standards

Subject	Standard	2007/08	2008/09	2009/10	2010/11	2011/12	Targets 2011/12
English Language Arts 30-1	excellence	8	6	4	1	5	
	acceptable	79	78	75	80	75	
English Language Arts 30-2	excellence	8	4	7	7	9	
	acceptable	85	83	88	87	89	
French Language Arts 30-1	excellence	14	15	0	0	10	
	acceptable	79	85	75	95	90	
Français 30-1	excellence	n/a	n/a	n/a	n/a	n/a	
	acceptable	n/a	n/a	n/a	n/a	n/a	
Overall Language Arts	excellence	8.3	4.9	5.7	4.4	7.0	8.1
	acceptable	82.6	81.3	82.6	84.2	83.1	84.3
Pure Mathematics 30	excellence	11	11	12	12	11	
	acceptable	68	70	71	69	71	
Applied Mathematics 30	excellence	10	12	8	8	8	
	acceptable	69	76	71	70	74	
Overall Mathematics	excellence	10.7	11.7	10.1	9.9	9.3	12.7
	acceptable	68.4	73.0	71.1	69.8	72.5	73.6

Source: Alberta Education.

Notes

- The results reported are solely based on students who identified themselves as Indian/First Nations, Métis, and Inuit. These students may not be fully representative of the population of Aboriginal students. Discretion should be applied when interpreting the results over time.
- The percentages of students who achieved the acceptable standard include the students who achieved the standard of excellence.
- An asterisk (*) indicates suppression has been applied because fewer than six self-identified FNMI students wrote the test, while n/a indicates no self-identified FNMI students wrote the test.
- Equating of diploma examinations has been phased in over the past number of years making results directly comparable from year to year for the equated tests. Results are comparable for all years reported from 2007-08 to 2011-12 for Pure Mathematics 30, English Language Arts 30-1 and 30-2, and Applied Mathematics 30.
- See Endnote B, Diploma Examinations, pages 29-30.

ENDNOTES FOR PERFORMANCE MEASURES

Endnote A: Technical Notes

Assessing Results Over Time

Changes over time are assessed with a Chi-square statistical test for measures based on tests of student learning. The test determines whether the difference between two proportions is significant. The calculation of Chi-square is based on the difference between what was observed and what would be expected assuming that the proportions were the same. Under a simple test of proportions, a Chi-square value of 1 represents a difference of one standard deviation, while a Chi-square value of 3.84 is significant at the five per cent level. Discussion of results over time for test measures is supported by this test of significant difference.

Assessing Results Relative to Targets

Performance targets set expectations for results within specific time frames and are the basis for planning improvements and assessing results that are within the sphere of influence of the ministry and school authorities. They are an important way to gauge whether the education system is improving or falling behind in obtaining desired results in key areas. Targets clearly establish desired levels of performance better than recent performance, to be attained within a specific timeframe. Targets are quantifiable and expressed in numerical terms, such as percentages or ratios. They are used as a key tool to drive, measure, improve and manage performance.

For measures based on achievement tests, on diploma exams and on administrative data, the Chi-square statistical test is used to determine whether the result is significantly different from the target. The magnitude of the difference required between the result and the target for each test to establish significance depends on the sample size, e.g., the number of students writing an exam, and the proportion, e.g., the percentage of students meeting standards.

Trend Lines

Although not appearing in the annual report, trend lines are an aid to interpreting the results for measures reported in the annual report. Trend lines augment data interpretation techniques already in use such as the calculation of chi-square values, which are used to determine the significance of changes in measure results over time.

Trend lines are used to develop an expected value for a current result given historical results. The expected value can then be compared with the actual result. In this way, trend lines provide a useful method of understanding year-to-year fluctuations and shift the focus from smaller year-to-year changes to providing information about the direction of results over the longer-term. In particular it is of interest whether results are tracking towards the performance target for the measures that have not met targets. Discussion of results over time for measures with at least three data points are supported by trend lines. The type of trend line used is selected based on an informed interpretation of the data series underlying the trend. Logarithmic trend lines are appropriate for proportional data, i.e., data expressed as percentages of a whole, and therefore ranging between 0 per cent and 100 per cent, such as the performance measures in this report. A logarithmic trend line is a best-fit straight line that is most useful when the rate of change in the data increases or decreases quickly, then levels out. The leveling out can be seen in the results for some measures in the report, along with examples of year-to-year increases or decreases on other measures.

A logarithmic trend line is calculated using the following formula:

$$Y = c(\ln x) + b$$
, where c and b are constants and \ln is the natural logarithm function and x is the year of the series.

Endnote B: Methodology for Performance Measures

Described below are the methodologies used to calculate the measures that are derived from provincial assessments of student learning.

Definition of Alberta Student

Results are reported for Alberta students, i.e., students whose education is the responsibility of the Alberta government. An Alberta student is age 19 or younger on September 1 of the school year and is registered in an Alberta school authority, i.e., a public, separate or francophone school board, a charter school or an accredited private school on September 30 of the school year. Students attending a school in Lloydminster are not included.

Results for FNMI Students

Calculating results for FNMI students is possible because school jurisdictions have been required to include a voluntary FNMI self-identification question on school registration forms for several years and to report the identifier to the ministry's student data system. Self-identification of students has increased each year. Students' FNMI self-identification information associated with their most recent school registration is used to calculate results. This provides the most complete results and reflects the student's intent to be identified.

Results for English as a Second Language (ESL) Students

The calculation of results for ESL students is based on the number of ESL students for whom funding was provided to school authorities for ESL programming. ESL programming is designed for children/students who require additional English language supports and instruction to achieve grade level expectations in English and other subject areas. This group includes both Canadian-born and foreign-born students. Students funded for an ESL program in the year reflected in the measure are included in the ESL results, so that, for example, Grade 3 students funded for ESL in 2011-12 are included in the Grade 3 ESL provincial achievement test results.

Provincial Achievement Tests

Students in Grades 3, 6 and 9 write Provincial Achievement Tests annually in language arts and mathematics. Grades 6 and 9 students also write tests in science and social studies. The achievement test results for Grades 3, 6 and 9 provide information on how well Alberta students in public, separate, francophone, charter and accredited private schools are meeting provincial standards in the core academic subjects. Tests are developed and administered by teachers and educators and are based on the provincial curriculum. Results are reported in relation to the standards of acceptable and excellence.

A student achieving the acceptable standard in a specific grade shows an adequate understanding of the core knowledge and adequate basic skills essential to that course. A student achieving the standard of excellence consistently shows a deeper understanding of the concepts of the course by demonstrating an ability to integrate information and evaluate it from various points of view.

For each achievement test, the cut scores for the acceptable standard and the standard of excellence are set initially by a standard-setting committee of about 20 teachers using the Modified Angoff Bookmark or Body of Work Standard Setting Procedures. These procedures use teachers' judgment to determine a minimum number of items a student must answer correctly – the cut score – to achieve each standard. In subsequent years, the cut scores for each test are adjusted through test equating. This ensures the standards remain constant even if test difficulty varies slightly from year to year. Whenever curriculum is revised, the standard-setting process is done again.

Results on provincial achievement tests are calculated and presented on the basis of the total number of students in each grade who demonstrated the standards. Results for mathematics include student results on both English and French versions of the tests. Given the large number of students in each grade (more than 40,000), differences in results from year to year of more than 0.4 percentage point on each test are considered significant. French language arts and Français courses have higher significant difference values (1.2 to 3.8 percentage points, depending on the number of students in each course), because fewer students are in these courses.

Not all students write the Provincial Achievement Tests. Achievement test results are not available for students who:

- were absent,
- were excused from writing by the superintendent because participation would be harmful to the student or the student could not respond to the test instrument,
- wrote but whose results were withheld or invalidated, or
- wrote only one part of the two-part language arts test.

It is possible that some of these students, under different circumstances, could have demonstrated achievement of standards on the test.

Participation rates in achievement tests are calculated by dividing the number of students in the grade who wrote the test by the sum of total enrolment in the grade plus the ungraded students who are in the corresponding year of schooling.

Provincial overall results in Language Arts present weighted averages based on the number of students enrolled in each Language Arts course. Test results and participation are recorded and aggregated in ministry systems. Provincial, school authority and school results are available at <http://www.education.alberta.ca/admin/testing.aspx>.

Diploma Examinations

Examinations are administered in all Diploma Examination courses in January, June and August each year. Examinations are administered in three courses in both November and April, for a total of six courses. Results on Diploma Examinations show how well Alberta students in public, separate, francophone, charter and accredited private schools are meeting provincial expectations as outlined in the Programs of Study. Examination items are developed and standards are established by committees of teachers. The examination design is vetted through committees of stakeholders and by a standard-setting committee of teachers.

A test equating initiative has been phased in for the Diploma Examination Program so that over time examinations are consistent and the results are comparable. The multiple-choice portion of the examinations contains a set of items common to administrations in subsequent years. By comparing the achievement of students writing in January 2004 with those writing in any subsequent administration on the common items and on the unique items, Alberta Education is able to determine whether or not the examinations are of equal difficulty. Student scores on the subsequent examinations can then be equated back to the January 2004 baseline examinations to remove any influence that differences in examination difficulty may have on student scores. A similar equating process was implemented for Pure Mathematics 30 in January 2005 and for English Language Arts 30-1 and 30-2, and Applied Mathematics 30 in January 2006.

Through equating, test results for a particular course are based on an identical standard and, consequently, can be directly compared over time. As a result of implementing the equating process, diploma examination results are comparable over time as follows:

- Pure Mathematics 30 from 2004-05 to 2011-12
- English Language Arts 30-1 and 30-2, and Applied Mathematics 30 from 2005-06 to 2011-12.

Diploma Examination results are reported in relation to the acceptable standard and the standard of excellence. Results for mathematics include results for both English and French versions of the tests. The overall results present weighted averages based on the numbers of students achieving standards in all Diploma Examinations. Students achieving the acceptable standard demonstrate that they have met the basic requirements of the course. A mark of 50 per cent on the examination represents the acceptable standard in a Diploma Examination course. A mark of 80 per cent on the examination represents the standard of excellence and indicates the student has demonstrated performance significantly beyond the minimum requirements of the course. For student marks in Diploma Examination courses, the diploma examination mark is worth 50 per cent of the final mark in a course and the school-awarded mark contributes the other 50 per cent.

Starting from the 2009-10 school year, the written response component has been removed from the mathematics Diploma Examinations. More machine-scored items, particularly numerical response items, have been added to these examinations to maintain the same quality and standards.

Diploma Examination results are recorded and aggregated in ministry systems. Provincial, school authority and school results reports are available at <http://www.education.alberta.ca/admin/testing.aspx>.