

## Purpose of the System

The purpose of the Student Achievement Data Exchange (SADE) is to eventually collect course level achievement data at all grade levels from all elementary and secondary schools within British Columbia. In this first year of implementation, data will be collected only from the following schools:

- Independent Distributed Learning Schools (all grades)
- Public Distributed Learning Schools (all grades)
- Summer Schools (grades 1 to 12)
- Other public schools (including Continuing Education and Alternate Education Centres) teaching any courses in grades 8 to 12

It is expected that this data will support policy development, monitoring, and compliance, as well as provide a flexible, core dataset that will support the integration and streamlining of legacy systems.

## Overview

Schools and districts will be expected to:

- Create an extract of the student achievement data on a quarterly basis;
- Provide users with a means of reviewing and editing data at source;
- Submit and Release data within the release window, at the end of each reporting period. Any data not submitted and released by the deadline will need to be submitted during the next reporting period. The release windows will start the day after the reporting period ends, and will be set to 1 month (31 days) in length;
- The reporting periods for the 2009/10 school year will be:

Reporting Period	Release Window
1 – July 1, 2009 – September 30, 2009	October 1 – 31, 2009
2 – October 1, 2009 – December 31, 2009	January 1- 31, 2010
3 – January 1, 2010 – March 31, 2010	April 1- 30, 2010
2 – April 1, 2010 – June 30, 2010	July 1- 31, 2010

SADE will use the Data Exchange (DX<sup>2</sup>) platform to submit, validate, release, and to forward the student achievement data to the Ministry.

Data entry functionality will not be provided through the DX<sup>2</sup>, but it will accept data in comma-separated values (CSV) format, which can be generated from Excel spreadsheets and/or local student information systems.

The DX<sup>2</sup> platform will provide data validation checks, including acceptable range of values, data type checks, duplicate checks, field length, date logic tests. Error reports will be produced and made available within DX<sup>2</sup>. Data will not be accepted by the DX<sup>2</sup> unless it meets the data validation rules specified. Files will be accepted or rejected in their entirety, based on the presence or absence of errors.

Once data is confirmed to be valid, an authorized party (for public schools, a School District Representative) will log on to the DX<sup>2</sup> to authorize its release.

### General Instructions

The following rules must be followed for all submissions:

- Data file must be in CSV format;
- The filename must have a file extension of .csv;
- All data must be ASCII<sup>1</sup> coded;
- Each field must have a trailing comma with the exception of the last field on each record;
- Text fields that can have leading zeroes should be enclosed in double-quotes or formatted as a Text Field within the spreadsheet, to avoid having the leading zeroes dropped by the conversion to CSV;
- The submission file must have the correct number of columns of data, as per the Data File Specifications described below;
- Data may be included in upper-case or lower-case;
- Each file may contain the data of only one school;
- Each school's data must be submitted as one file;
- The file must be submitted and released within the release period window (from 1-31 days after the end of a reporting period): it will not be accepted outside of this timeframe;
- The file must contain at least one record, and not contain a header record;
- The person submitting a school's data must be authorized to submit for the school;
- The data must include, and be in the format described in the table below:

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<sup>1</sup> Acronym for the American Standard Code for Information Interchange. ASCII is a code for representing English characters as numbers, with each letter assigned a number from 0 to 127. For a list of commonly used characters and their ASCII equivalents, refer to <http://www.asciitable.com/>

## Student Achievement Data Exchange 2009/10

SADE File Specification				
Field Name	Description	Required?	Format	Field-Level Validation
School ID	Ministry School Code	Y	8 alphanumeric	Validate against a list of valid schools within the DX <sup>2</sup> . Note leading zero(es) must be included.
PEN	Personal Education Number	Y	9 alphanumeric	Left justify. Validate against a check digit algorithm.
Course Code	Course code as found in Course Registry. Note this will not include support blocks, as they are not courses and no achievement is expected.	Y	8 alphanumeric	Validate against the Course Registry to ensure: - it is a valid course - the course is open as of the active date Field is not case-sensitive: upper-case and lower-case are acceptable.  List of valid course codes can be found in the Course Registry located on the data collections website.
Active Date	The date the student became active in the course. Active is defined in policy for each program type	Y	Date (8) digits in YYYYMMDD format	Must be less than or equal to the reporting period end date. Must be less than completion date
Class ID	Field can be used to make a student's course record unique. Suggested values: course section, a combination of semester, term, day of week, period, room number, block id.	N	10 alphanumeric	Case sensitive. Letters must be uppercase. Leading and trailing blanks will be removed.
Credits	Potential credits earned towards graduation. One course may be delivered as 1, 2, 3, or 4 credits	N	1 alphanumeric	- Must be listed as valid # of credits for the course as per Course Registry, including blank credits (without restricting it to CR date ranges for credits)
Mark Type	Letter grade, % or 3 or 4 point scale	N	1 numeric	One of: 1: Letter Grade 2: Percent 3: Three Point Scale 4: Four Point Scale
Mark Value	Final school mark (before exam mark applied)	N	3 alphanumeric	Valid values based on mark type: 1: A, B, C+, ... W, WR 2: integer from 0 to 100 3: three-point scale: -- 1: Exceeding expectations -- 2: Meeting Expectations -- 3: Approaching Expectations 4: four-point scale: -- 1: Exceeding expectations -- 2: Meeting Expectations -- 3: Approaching Expectations -- 4: Not yet meeting expectations

## Student Achievement Data Exchange 2009/10

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SADE File Specification				
Field Name	Description	Required?	Format	Field-Level Validation
Equivalency / Challenge	Whether Course credit allocated based on: - an assessment of prior learning to grant equivalency for BC credit course, or - Challenge	N	1 alphanumeric	Must be E or C or blank  Field is not case-sensitive: upper-case and lower-case are acceptable.
Completion Date	Date student withdrew from or completed course. Date should reflect when the student completed the course, and not wait for the exam to be written.	N	Date (8) digits in YYYYMMDD format	If entered, <ul style="list-style-type: none"> <li>• must be &gt;= Active Date.</li> <li>• must be within the previous reporting period or the current reporting period.</li> </ul>

## Data Validation

### Errors

The following validation will be performed on all submitted datasets. Data files that do not pass each of these rules will be rejected in their entirety:

- Data lengths and formats as specified in the Format column of the SADE File Specification chart, above;
- If the SADE File Specification column 'Required?' is set to Yes, then valid data values must be present in the field;
- Data submitted must meet relevant field-level validations as noted in table above;
- Mark Type and Mark Value must both be entered, or both be blank;
- School id, PEN, Course Code, Active Date and Class Identifier combination must be unique for each submission;
- Completion date is required if the Mark Type and Mark Value are provided;
- If Mark type = 1, Mark Value must be a valid letter grade, or the NM (No Mark) indicator that no mark will be issued. The list of valid values are: A+, A, A-, B+, B, B-, C+, C, C-, F, W, WR, SG, TS, RM, NM. The letter grade I will also be accepted, but it will generate a warning (see below).
- If Mark type = 2, Mark Value must be an integer from 0 to 100;
- If Mark type = 3, Mark Value must be one of 1,2,3;
- If Mark type = 4, Mark Value must be one of 1,2,3,4;
- The course code provided must match the list of valid course codes held within the Course Registry.

### Warnings

The following validation will be performed, and may produce warnings. The data file may still be released to the Ministry regardless of the number of warnings issued:

- A student may not exceed the maximum number of courses they can take within one reporting period (maximum initially set at 25);
- Completion date falls within the submission window following the end of the reporting period
- An I was submitted as a final mark. Mark should be updated by the next submission.

## Data Set Content

The SADE system will expect a full list of all records that were open during all or part of that reporting period, and optionally those that were open during all or part of the previous reporting period.

\*\* The ministry recommends schools include the current and previous reporting period in each submission.

## Student Achievement Data Exchange 2009/10

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Each school is required to submit a dataset containing one record for each student enrolled in a course, where:

- The course is within the initial scope of SADE:
  - all Distance Learning courses from grades K-12
  - all public school courses from grades 8-12
  - all Summer school courses from grades 1-12
- The course active-date is:
  - Equal to or earlier than the last day of the reporting period;
- The course completion date is:
  - Blank, or
  - Greater than the active-date, and
    - Within the current reporting period.

*Optionally*, schools may include courses for grades that are not yet required for submission, and may include courses that were active during the previous reporting period. This includes data where the course active-date is as per the rules stated above, and:

- The course is for a grade not within the scope of SADE:
  - all public school courses from grades K-7

and/or:

- The course completion date is:
  - Greater than the active-date, and
  - Within the previous reporting period.

Datasets will either be accepted or rejected in their entirety.

The above rules indicate that schools must be able to bring forward continuing records: any records archived before the end of the school-year must still be accessible and reportable to SADE if they meet the stated criteria.

### **SADE Corrections**

Most corrections to student course records will be collected through the normal SADE process, by collecting both the current and previous quarter's data in each submission. If a change is required outside of the normal collections, a SADE Corrections tool has been developed.

Any changes to records closed more than 6 months before the current reporting period can be made using this tool.

SADE Corrections file is a separate submission type. The SADE Corrections file is similar to the regular SADE submission but includes one additional column identifying whether the record is an update or a deletion. See the file specifications below for details.

## SADE Corrections File Specification

The SADE Corrections file will be of the same file specification as the SADE regular file, with one exception: A column will be added to the front as follows:

SADE File Specification				
Field Name	Description	Required?	Format	Field-Level Validation
Correction Type	Whether this is an Update or a Delete of a previously submitted record.	Y	1 alphanumeric	Must be U (Update) or D (Delete)
School ID	Ministry School Code	Y	8 alphanumeric	Validate against a list of valid schools within the DX <sup>2</sup> . Note leading zero(es) must be included.
PEN	Personal Education Number	Y	9 alphanumeric	Left justify. Validate against a check digit algorithm.
Course Code	Course code as found in Course Registry. Note this will not include support blocks, as they are not courses and no achievement is expected.	Y	8 alphanumeric	Validate against the Course Registry to ensure: - it is a valid course - the course is open as of the active date Field is not case-sensitive: upper-case and lower-case are acceptable.  List of valid course codes can be found in the Course Registry located on the data collections website.
Active Date	The date the student became active in the course. Active is defined in policy for each program type	Y	Date (8) digits in YYYYMMDD format	Must be less than or equal to the reporting period end date. Must be less than completion date
Class ID	Field can be used to make a student's course record unique. Suggested values: course section, a combination of semester, term, day of week, period, room number, block id.	N	10 alphanumeric	Not case sensitive. Leading and trailing blanks will be removed.
Credits	Potential credits earned towards graduation. One course may be delivered as 1, 2, 3, or 4 credits	N	1 alphanumeric	- Must be listed as valid # of credits for the course as per Course Registry, including blank credits (without restricting it to CR date ranges for credits)
Mark Type	Letter grade, % or 3 or 4 point scale	N	1 numeric	One of: 1: Letter Grade 2: Percent 3: Three Point Scale 4: Four Point Scale

SADE File Specification				
Field Name	Description	Required?	Format	Field-Level Validation
Mark Value	Final school mark (before exam mark applied)	N	3 alphanumeric	Valid values based on mark type: 1: A, B, C+, ... W, WR 2: integer from 0 to 100 3: three-point scale: -- 1: Exceeding expectations -- 2: Meeting Expectations -- 3: Approaching Expectations 4: four-point scale: -- 1: Exceeding expectations -- 2: Meeting Expectations -- 3: Approaching Expectations -- 4: Not yet meeting expectations
Equivalency / Challenge	Whether Course credit allocated based on: - an assessment of prior learning to grant equivalency for BC credit course, or - Challenge	N	1 alphanumeric	Must be E or C or blank  Field is not case-sensitive: upper-case and lower-case are acceptable.
Completion Date	Date student withdrew from or completed course. Date should reflect when the student completed the course, and not wait for the exam to be written.	N	Date (8) digits in YYYYMMDD format	If entered, <ul style="list-style-type: none"> <li>• must be &gt;= Active Date.</li> <li>• must be within the previous reporting period or prior to the previous reporting period.</li> </ul>

## Validation Rules

### Errors

The following validation will be performed on all submitted Correction files. Data files that do not pass each of these rules will be rejected in their entirety:

- Correction Type must be filled in with either U or D;
- Data lengths and formats as specified in the Format column of the SADE File Specification chart, above;
- If the SADE File Specification column 'Required?' is set to Yes, then valid data values must be present in the field;
- Data submitted must meet relevant field-level validations as noted in table above;
- Mark Type and Mark Value must both be entered, or both be blank;
- School id, PEN, Course Code, Active Date and Class Identifier combination must be unique for each submission;
- Completion date is required if the Mark Type and Mark Value are provided;
- If Mark type = 1, Mark Value must be a valid letter grade, or the NM (No Mark) indicator that no mark will be issued. The list of valid values are: A+, A, A-, B+, B, B-, C+, C, C-, F, W, WR, SG, TS, RM, NM. The letter grade I will also be accepted, but it will generate a warning (see below).
- If Mark type = 2, Mark Value must be an integer from 0 to 100;

- If Mark type = 3, Mark Value must be one of 1,2,3;
- If Mark type = 4, Mark Value must be one of 1,2,3,4;
- The course code provided must match the list of valid course codes held within the Course Registry.

### Warnings

The following validation will be performed, and may produce warnings. The data file may still be released to the Ministry regardless of the number of warnings issued:

- An I was submitted as a final mark. Mark should be updated by the next submission.
- Completion date falls within the submission window following the end of the reporting period.

The following rules are not applicable for SADE Corrections submissions:

- A student may not exceed the max number of courses they can take within one reporting period
- Completion date must be after the start-date of the previous reporting period;

### Data Set Content

The SADE Corrections file may contain any SADE Records that have been previously submitted, and for which a correction must now be made. Corrections may include an Update, or a Delete if the record was submitted in error. The Correction Type column differentiates between Updates and Deletions.

The records are not restricted to only those that were completed more than 2 reporting periods earlier, however it is recommended that newer records are submitted using the regular SADE Submission when possible.

## Sample School Verification Report

It is each school's responsibility to ensure their data is correct before it is submitted to SADE. To support this, it is recommended that schools and districts develop a similar verification report in your local systems to assist in this task. The following is a sample layout for a verification report as developed within BCeSIS; it may be adjusted as required to meet local interests or needs, but it is included here as a layout that BCeSIS users have found helpful.

It is recommended that the verification report should list the data to be extracted to SADE, and include any other information used to verify the data is complete and correct, such as local Course Code or course name, student name, and local student number.

The report should also provide the ability to verify the data against the business rules defined in this document, and an exception report can be useful to help isolate and resolve any errors before submission to SADE.

It will be beneficial if this verification report can be run at any time, so that it can be used as a 'pre-check' in advance of the SADE reporting period.

### Sample School Achievement Verification Report

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School: 5499163 Bulkley Valley Education Conn

Collection Period: July 1 – Sept 30, 2009

Verification Date: Oct 3, 2009

PEN	Student Id	Student Name	Ministry Course Code	School Course Code	Description	Course Active Date	Completion Date	Class ID	Mark Type	Mark Value	Credits	Equivalency /Challenge
123456789	123456	Doe, John	MEN--04		* Language Arts	26-Sep-09						
123456789	123456	Doe, John	MVA -- 04		Visual Arts	26-Sep-09						
123456789	123456	Doe, John	MDNC-04		Dance	26-Sep-09						
123456789	123456	Doe, John	MDR-04		Drama	26-Sep-09						
123456789	123456	Doe, John	MMU-04		Music	26-Sep-09						
123456789	123456	Doe, John	MMA -- 04		* Mathematics	26-Sep-09						
776655443	765432	Doe, Jane	MEN--01		* Language Arts	26-Sep-09						
776655443	765432	Doe, Jane	MVA -- 01		Fine Arts	26-Sep-09						
776655443	765432	Doe, Jane	MDNC-01		Dance	26-Sep-09						
776655443	765432	Doe, Jane	MDR-01		Drama	26-Sep-09						

**Sample School Extract Exceptions**

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School: 5499163 Bulkley Valley Education Conn

Collection Period: July 1 – Sept 30, 2009

Verification Date: Oct 3, 2009

Exceptions:

Exception	Type	Message
PEN: 123456789	ERROR	Invalid PEN – does not pass check digit validation
Pupil #:354906 Course: MPE-07	ERROR	Completion Date must be after Start date
....		

Duplicate Records:

PEN	Student Id	Student Name	Ministry Course Code	School Course Code	Description	Course Active Date	Completion Date	Class ID	Mark Type	Mark Value	Credits	Equivalency / Challenge
776655443	765432	Doe, Jane	MEN--01		* In Reading	26-Sep-09						
776655443	765432	Doe, Jane	MEN--01		* In Writing	26-Sep-09						
776655443	765432	Doe, Jane	MEN--01		* In Speaking/ Listening	26-Sep-09						
....												