Section 4 - TREx XML Standards

Overview

XML schemas function as models for describing the structure of the records being extracted and transmitted through TREx. This includes:

- the sequence in which elements appear;
- the interrelationship between different elements, including parent and child relationships and nesting levels; and
- the types of data that are contained in elements or attributes.

The *TREx Data Standards* manual provides information on the data elements, coded variables, and schema for use by the districts and vendors of local student information systems for the development and maintenance of the extract file process.

> ***Note**: Similar to the TREx Data Standards, the TREx XSD will be updated and republished by TEA annually. Student Information System (SIS) vendors should support updates to the TREx XSD.*

Edits and Validations

The TREx XML schema ensures that student data files from school districts adhere to a common structure and consist of valid elements and attributes. An XML extract file must be syntactically perfect or it is rendered as unacceptable by an XML parser.

Restrictions control acceptable values for XML data elements. Restrictions on XML elements are called facets. In combination with an element's declared data type, restrictions enable the XSD validation process not only to validate the structure of the XML file but also to validate the data values contained within the file against its XML schema definition.

An example of a restriction to validate data commonly used in TREx is for a range of years. To define a rule for the ACADEMIC-YEAR data element so that the values fall within the range of 1957-2012, the TREx schema declares the restriction as:

```
<xs:element name="SchoolYear">
  <xs:simpleType>
    <xs:restriction base="xs:integer">
        <xs:minInclusive value="1957"/>
        <xs:maxInclusive value="2012"/>
      </xs:restriction:
   </xs:simpleType>
</xs:element>
```

The XML schema also enforces length restrictions for a given element by either an exact length, minimum length, or maximum length. Patterns represent another restriction on data elements if so defined.

TREx Field Edit Overview

Although the districts/campuses are provided with a manual capability to create a student record or transcript in TREx, most districts/campuses submit data in an XML-based extract file. The file is referred to as an extract file because it is created through a vendor-supported process that extracts data from a district's student information system. The extracted data must be consistent with the TREX XML Schema Definition (XSD).

Prior to transmitting the extract file, TREx verifies the structure of the file against the XSD. In addition, the system verifies the contents of the file against the declared data types and restrictions defined for each element in the TREx XSD for each simple type element. The data types and restrictions defined with the TREx XSD constitute the TREx field edits.

TREx Field Edit Restrictions

As previously described in this section, restrictions control acceptable values for XML data elements. Restrictions on XML elements are called facets. In combination with an element's declared data type, restrictions enable the TREx XSD validation process not only to validate the structure of the XML file but also to validate the data values contained within the file against its XML schema definition. Many simple type elements within the TREx XSD have a restriction that limits the domain of acceptable values.

TREx does not transmit extract files improperly structured or containing unacceptable values.

Available TREx XSD Restrictions

Restriction	Description
enumeration	Specifies a list of acceptable values.
minInclusive	Specifies the lower bounds for numeric values. The value must be greater than or equal to this value.
maxInclusive	Specifies the upper bounds for numeric values. The value must be less than this value.
minLength	Specifies the minimum number of characters or list items allowed. Must be equal to or greater than zero.
maxLength	Specifies the maximum number of characters or list items allowed. Must be equal to or greater than zero.
minOccurs	Specifies minimum number of occurrences allowed.
maxOccurs	Specifies maximum number of occurrence allowed.
pattern	Defines the exact sequence of characters that are acceptable.
restriction	Defines the type of data element (e.g. string, integer, etc.).
totalDigits	Specifies the exact number of digits permitted. (Value must be greater than zero.)
whiteSpace	Specifies the use of white space. Denotes line feeds, tabs, spaces, and carriage returns.

Context Edits Overview

TREx uses context edits to verify data elements against the rules set out in the XSD. Each context edit is traced to its associated Edit Number, a description of which follows.

Context Edit Descriptions

Following is a list of TREx Context Edits.

Edit #	Element XML Name	Edit Rule
T001	StudentID	The first character of StudentID must be “S” or “0”-“7”.
T002	StudentID	Each character of StudentID must not be the same number.
T003	StudentID	The first three characters of StudentID must not be “000”.
T004	StudentID	If first character of StudentID is not an “S”, the fourth and fifth characters must not be “00”.
T005	StudentID	If first character of StudentID is not an “S”, the last four characters must not be “0000”.
T006	FirstName, MiddleName, LastName	The FirstName, MiddleName, and/or LastName must only contain the following characters: • a-z or A-Z • 0-9 • Apostrophe • Hyphen • Space character
T007	FirstName, MiddleName, LastName	Name must not contain only apostrophes.
T008	FirstName, MiddleName, LastName	Name must not contain only hyphens.
T009	FirstName, LastName	Name must not contain only spaces.
T010	FirstName, MiddleName, LastName	Data elements cannot be repeated as PersonType (student).
T011	FirstName, MiddleName, LastName	Data elements can be repeated as ParentType (parent).
T012	DistrictID	The DistrictID contained within the CampusID must match an entry registered with the TEA.
T013	CampusID	The CampusID must match an entity registered with TEA.
T014	EntryDate	The EntryDate must not be greater than the file submission date.
T015	WithdrawDate	WithdrawDate must not be greater than the current date.
T016	WithdrawDate	WithdrawDate must be greater than ExitDate by at least one day.
T017	ExitDate	ExitDate must be one day less than (earlier) than WithdrawDate.
T018	WithdrawDate, WithdrawReason	If data are present for either element, both elements must include data.

Edit #	Element XML Name	Edit Rule
T019	DisciplineActionDate	Must be greater than date of extract file creation.
T020	DisciplineActionDate, DisciplineActionCode, DisciplineActionReason	If data are present for any single element, all other elements must include data.
T021	DisciplineActionDate, DisciplineActionCode, DisciplineActionReason	Elements can be repeated on student record if at least one element contains different data from other set.
T022	TestScore, TestDate,TestCode	If TestDate (Assessment Date) is present, data are required in TestScore (Assessment Score) and/or TestCode (Assessment Score Code).
T023	GradeRetained	Must be less than Grade 9.
T024	CertificateDate	Must be blank if date exists in GraduationDate element.
T025	GraduationDate	Must be blank if date exists in CertificateDate element.
T027	ImmunizationDate	If present, data are required for ImmunizationCode.
T028	CreditCampus	CreditCampus must match an entity registered with TEA.

Data and File Requirements

The TREx extracted data are stored in an XML-based file consistent with the TREx XML Schema Definition (XSD) and must follow the XSD standards to be transmitted by TREx.

Rules for XML Schema

While school districts and campuses are responsible for the accuracy of the data transmitted through TREx, TREx verifies the contents of the file against the declared data types and restrictions defined for each element in the TREx XSD. The following business rules apply to XML schemas and the XSD validation process:

- The XML Schema supports a number of built-in data types (e.g., date). When an XML element has a defined data type, a restriction is placed on the element content.
- The XML Schema supports restrictions (edits). In conjunction with the element's declared data type, restrictions are used to control acceptable values for XML elements.
- Declared data types and restrictions enable the XSD validation process.
- The client-side XSD validation process is used to validate the XML file structure and data values against the schema definition.
- If the client-side validation fails, TREx does not transfer the extract file.

Note: For graphical representations of the TREx XSD, reference Appendix C.

TREx XSD Data Types and Restrictions

Following are the TREx data types and restrictions. Restrictions control acceptable values for XML elements. Restrictions used in the XSD validation process validate both the structure of the XML file and the data values against the XML Schema Definition.

Element Name	XML Name	Data Type	Restriction
Student ID	StudentID	String	• Required element. • Limited to a single occurrence. • The only acceptable value for the first position is an “S” or a character in the range of 0 to 7. • For positions two through nine, the only acceptable value is eight characters in a sequence with each character in a range from 0 to 9.
Prior ID	PriorID	String	• Optional element. • If provided, minimum length of 1 and a maximum length of 9. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?
Local Student ID	LocalID	String	• Optional element. • If provided, minimum length of 1 and a maximum length of 9. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?
(Student) First Name	FirstName	String	• Required element. • Limited to a single occurrence. • The minimum length is 1 and the maximum length is 30 characters. • White space is preserved. • The only acceptable value is a sequence of at least 1 to 30 characters with each character either a lower-case a through z, upper-case A through Z, an apostrophe, a hyphen, a 0 through 9, or a space.

Element Name	XML Name	Data Type	Restriction
(Student) Middle Name	MiddleName	String	• Optional element. • Limited to a single occurrence. • The minimum length is 1 and the maximum length is 30 characters. • White space is preserved. • The only acceptable value is a sequence of at least 1 to 30 characters with each character either a lower-case a through z, upper-case A through Z, an apostrophe, a hyphen, a 0 through 9, or a space.
(Student) Last Name	LastName	String	• Required element. • Limited to a single occurrence. • The minimum length is 1 and the maximum length is 40 characters. • White space is preserved. • The only acceptable value is a sequence of at least 1 to 40 characters with each character either a lower-case a through z, upper-case A through Z, an apostrophe, a hyphen, a 0 through 9, or a space.
(Student) Generation Code	Suffix	String	• Optional element. • Maximum length of a single character. • If provided, the only acceptable value is a single character in a rank from 1 to 5.
Date of Birth	BirthDate	Date	• Required element. • Limited to a single occurrence. • The date type implements an ISO data type in the form of yyyy-mm-dd. • The only acceptable value is a valid date with a minimum value greater than or equal to 1957-01-01 and less than 2012-01-01.
Gender Code	Gender	String	• Required element. • Limited to a single occurrence. • Maximum length of a single character. • The only acceptable value is one of the following letters: “M” or “F”.
Ethnicity Code	Race	String	• Required element. • Limited to a single occurrence. • Maximum length of a single character. • The only acceptable value is a single character in a range from 1 to 5.

Element Name	XML Name	Data Type	Restriction
(Student) Address	Address	String	• Optional element. • Maximum length of fifty characters. • White space is preserved. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?
(Student) City	City	String	• Optional element. • Maximum length of thirty characters. • White space is preserved. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?
(Student) State	StateProvince	String	• Optional element. • Maximum length of two characters. • The only acceptable values are listed in Code Table TC20.
(Student) Zip	PostalCode	String	• Optional element. • Minimum length of five and a maximum length of ten characters. • If ten characters provided, must include a hyphen in position six.
(Parent) First Name	FirstName	String	• Required element. • The minimum length is 1 and the maximum length is 30 characters. • White space is preserved. • The only acceptable value is a sequence of at least 1 to 30 characters with each character either a lower-case a through z, upper-case A through Z, an apostrophe, a hyphen, a 0 through 9, or a space.
(Parent) Middle Name	MiddleName	String	• Optional element. • Maximum length is 30 characters. • White space is preserved. • The only acceptable value is a sequence of at least 0 to 30 characters with each character either a lower-case a through z, upper-case A through Z, an apostrophe, a hyphen, a 0 through 9, or a space.

Element Name	XML Name	Data Type	Restriction
(Parent) Last Name	LastName	String	• Required element. • The minimum length is 1 and the maximum length is 40 characters. • White space is preserved. • The only acceptable value is a sequence of at least 1 to 40 characters with each character either a lower-case a through z, upper-case A through Z, an apostrophe, a hyphen, a 0 through 9, or a space.
(Parent) Generation Code	Suffix	String	• Optional element. • Maximum length of a single character. • If provided, the only acceptable value is a single character in a rank from 1 to 5.
District ID	DistrictID	String	• Required element. • Minimum length of six characters. • Must be valid TEA-approved district identification number. • Declared as a string data type to allow for zeros in the first position. • The only acceptable value is six characters in a sequence with each character in a range from 0 to 9.
District Name	DistrictName	String	• Optional element. • Maximum length of thirty-four characters. • White space is preserved. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789
Campus ID	SchoolID	String	• Required element. • Minimum length of nine characters. • Must be valid TEA-approved campus identification number. • Declared as a string data type to allow for zeros in the first position. • The only acceptable value is nine characters in a sequence with each character in a range from 0 to 9.

Element Name	XML Name	Data Type	Restriction
Campus Name	SchoolName	String	• Required data element. • Maximum length of thirty-four characters. • White space is preserved. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789
(Campus) Address	Address	String	• Optional element. • Maximum length of fifty characters. • White space is preserved. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?
(Campus) City	City	String	• Optional element. • Maximum length of thirty characters. • White space is preserved. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?
(Campus) State	StateProvince	String	• Optional element. • Maximum length of two characters. • The only acceptable values are listed in Code Table TC20.
(Campus) Zip	PostalCode	String	• Optional element. • Minimum length of five and a maximum length of ten characters. • If ten characters provided, must include a hyphen in position six.
Country	Country	String	• Optional element. • Maximum length of two characters. • The only acceptable values are listed in Code Table TC04. • Should default to US.

Element Name	XML Name	Data Type	Restriction
(Campus) Phone	PhoneNumber	String	• Required element. • Maximum length of twenty characters. • White space is preserved. • Any of the following characters, including the space character, are valid: EXText0123456789 # ( ) -
(Campus) Fax	Fax	String	• Optional element. • Maximum length of twenty characters. • White space is preserved. • Any of the following characters, including the space character, are valid: EXText0123456789 # ( ) -
Academic Year	SchoolYear	String	• Required element. • Maximum length of nine characters. • Punctuation allowed includes dash. • Can be repeated as needed.
Grade Level	GradeLevel	String	• Required element. • Maximum length of two characters. • The only acceptable value are PK, KG, and 01 through 12.
Original Entry Date	EntryDate	Date	• Optional element. • Record must contain only one. • The date type implements an ISO data type in the form of yyyy-mm-dd. • The only acceptable value is a valid date with a minimum value greater than or equal to 1957-01-01 and less than 2012-01-01.
Last Date of Attendance	ExitDate	Date	• Optional element. • Record may contain only one. • The date type implements an ISO data type in the form of yyyy-mm-dd. • The only acceptable value is a valid date with a minimum value greater than or equal to 1957-01-01 and less than 2012-01-01.
Last Withdrawal Date	WithdrawDate	Date	• Optional element. • Record may contain only one. • The date type implements an ISO data type in the form of yyyy-mm-dd. • The only acceptable value is a valid date with a minimum value greater than or equal to 1957-01-01 and less than 2012-01-01.

Element Name	XML Name	Data Type	Restriction
Withdrawal Reason	WithdrawReason	String	• Optional element. • Maximum length of two characters. • The only acceptable values are listed in Code Table TC23.
Placed in Grade	GradePlaced	String	• Optional element. • Maximum length of two characters. • The only acceptable value are PK, KG, and 01 through 12.
Promoted to Grade	GradePromoted	String	• Optional element. • Maximum length of two characters. • The only acceptable value are PK, KG, and 01 through 12.
Grade of Retention (PK-8)	GradeRetained	String	• Optional element. • Maximum length of two characters. • The only acceptable value are PK, KG, and 01 through 12.
Total Days Present	DaysAttended	String	• Optional element. • Implied decimal within ###.# format. • Must end in .0 or .5 (implied decimal).
Total Days Absent	DaysAbsent	String	• Optional element. • Implied decimal within ###.# format. • Must end in .0 or .5 (implied decimal).
Home Language	Language	String	• Optional element. • Maximum length of two characters. • The only acceptable values are listed in Code Table TC14.
Migrant Indicator	Migrant	String	• Optional element. • Maximum length of one character. • The only acceptable value is a single character of 0 or 1.
Homeless Indicator	Homeless	String	• Optional element. • Maximum length of one character. • The only acceptable value is a single character of 0 or 1.
LEP (Limited English Proficiency) Indicator	LEP	String	• Optional element. • Maximum length of one character. • The only acceptable value is a single character of 0 or 1.
Economically Disadvantaged Indicator	EconomicDisadvantaged	String	• Optional element. • Maximum length of two characters. • The only acceptable values are listed in Code Table TC08.
At Risk Indicator	AtRisk	String	• Optional element. • Maximum length of one character. • The only acceptable value is a single character of 0 or 1.

Element Name	XML Name	Data Type	Restriction
Title I Part A Indicator	TitleI	String	• Optional element. • Maximum length of one character. • The only acceptable value is a single character of 0, A, 6, 7, 8, or 9.
Special Education Indicator	SpecialEd	String	• Optional element. • Maximum length of one character. • The only acceptable value is a single character of 0 or 1.
IEP (Individualized Education Program) Indicator	IEP	String	• Optional element. • Maximum length of one character. • The only acceptable value is a single character of 0 or 1.
Bilingual Indicator	Bilingual	String	• Optional element. • Maximum length of one character. • If provided, the only acceptable value is a single character in a rank from 0 through 2.
ESL (English as Second Language) Indicator	ESL	String	• Optional element. • Maximum length of one character. • The only acceptable value is a single character of 0 or 1.
Gifted/Talented Indicator	GiftedTalented	String	• Optional element. • Maximum length of one character. • If provided, the only acceptable value is a single character in a rank from 0 through 2
Career Tech Ed Indicator	CTE	String	• Optional element. • Maximum length of one character. • If provided, the only acceptable value is a single character of 0 though 3.
Personal Graduation Plan	PersonalGradPlan	String	• Optional element. • Maximum length of one character. • The only acceptable value is a single character of 0 or 1.
Assessment Name	TestName	String	• Optional element. • May be repeated for each assessment. • Maximum length of two digits. • If provided, the only acceptable values are listed in Code Table TC01. • If provided, then the TestDate and TestScore or TestCode are required.

Element Name	XML Name	Data Type	Restriction
Assessment Grade Level	TestLevel	String	• Optional element. • May be repeated for each assessment. • Maximum length of two characters. • If provided, the only acceptable values are listed in Code Table TC12.
Assessment Score	TestScore	String	• Optional element. • May be repeated for each assessment. • If provided, then TestName and TestDate are required. • Maximum length of six characters. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?
Assessment Date	TestDate	Date	• Optional element. • May be repeated for each assessment. • If provided, then TestName and TestScore or Test Code are required. • Maximum length of seven characters. • The date type implements an ISO data type in the form of yyyy-mm. • The only acceptable value is a valid date with a minimum value greater than or equal to 1957-01 and less than 2012-01.
Assessment Score Code	TestCode	String	• Optional element. • May be repeated for each assessment. • If provided, then TestName and TestDate are required. • Maximum length of a single character. • The only acceptable values are listed in Code Table TC02.

Element Name	XML Name	Data Type	Restriction
Assessment Subtest	AssessmentSubtest	String	• Optional element. • May be repeated for multiple assessments. • Maximum length of fifty characters. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?
Course Category	SubjectArea	String	• Optional element. • May be repeated for each course or academic year. • Maximum length of four characters. • The only acceptable values are listed in Code Table TC05
Class Period	ClassPeriod	String	• Optional element. • May be repeated for each course or academic period. • Maximum length of five characters. • White space is preserved. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?
Course Name	CourseTitle	String	• Optional element. • May be repeated for each course or academic period. • Maximum length of one hundred characters. • White space is preserved. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?

Element Name	XML Name	Data Type	Restriction
Course Abbreviation	Abbreviation	String	• Optional element • May be repeated. • Maximum length of one hundred characters. • White space is preserved. • Any of the following characters, including the space character, are valid: • ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?
Course Number	CourseID	String	• Optional element. • May be repeated for each course or academic period. • Maximum length of eight characters. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?
Course Semester	Semester	String	• Optional element. • May be repeated for each course or academic period. • Maximum length of one digit.
Course Grade	CourseGrade	String	• Optional element. • May be repeated for each course. • Maximum length of ten characters. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?
Withdrawal Course Grade	WithdrawGrade	String	• Optional element. • May be repeated for each course. • Maximum length of fifteen characters. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?

Element Name	XML Name	Data Type	Restriction
Course Grade Average	GradeAverage	String	• Optional element. • May be repeated for each course. • Maximum length of ten characters. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?
Course Credit	CourseCredit	String	• Optional element. • May be repeated for each course. • Implied decimal within #.# format.
Pass/Fail Credit Indicator	PassFailCredit	String	• Optional element. • May be repeated for each course, • Maximum length of two characters. • If present, the only acceptable values are listed in Code Table TC25.
Course Teacher	CourseTeacher	String	• Optional element. • May be repeated for each CourseTitle. • Maximum length of forty characters. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?
Semester Sequence	SemesterSeq	String	• Optional element. • Maximum length of a single character. • May be repeated for each course or AcademicSessionType. • If present, the only acceptable values are 0 through 9.
Special Explanation Code	Explanation	String	• Optional element. • Maximum length of a single character. • May be repeated for each course. • If present, the only acceptable values are listed in Code Table TC19.

Element Name	XML Name	Data Type	Restriction
Campus Awarding Credit	CreditCampus	String	• Optional element. • Minimum length of nine characters. • Must be valid TEA-approved campus identification number. • Declared as a string data type to allow for zeros in the first position. • The only acceptable value is nine characters in a sequence with each character in a range from 0 to 9.
Texas Grant Indicator	TexasGrant	String	• Optional element. • Maximum length of a single character. • If provided, the only acceptable value is a single character in a rank from 1 through 4.
Class Rank	ClassRank	String	• Optional element. • Maximum length of five digits. • If provided, the only acceptable value is a range from 0 through 99999.
Number in Class	ClassTotalNumber	String	• Optional element. • Maximum length of five digits. • If provided, the only acceptable value is a range from 1 through 99999.
Date of Ranking	ClassRankingDate	Date	• Optional element. • The date type implements an ISO data type in the form of yyyy-mm-dd. • The only acceptable value is a valid date with a minimum value greater than or equal to 1957-01-01 and less than 2012-01-01.
Quartile	Quartile	String	• Optional element. • Maximum length of a single character. • If present, the only acceptable value is a single character in a rank from 1 through 4.
Grade Point Average	GPA	String	• Optional element. • Maximum length of ten characters. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?

Element Name	XML Name	Data Type	Restriction
Graduation Date	GraduationDate	Date	• Optional element. • The date type implements an ISO data type in the form of yyyy-mm. • The only acceptable value is a valid date with a minimum value greater than or equal to 1957-01-01 and less than 2012-01-01.
Graduation Program Type	GraduationDiplomaType	String	• Optional element if GradeLevel 10 or lower. • Required element if GradeLevel is 11 or 12. • Maximum length of two characters. • If provided, the only acceptable values are listed in Code Table TC13.
Certification of Coursework Completion Date	CertificateDate	Date	• Optional element. • The date type implements an ISO data type in the form of yyyy-mm-dd. • The only acceptable value is a valid date with a minimum value greater than or equal to 1957-01-01 and less than 2012-01-01.
College Board Campus Code	CollegeCampusCode	String	• Optional element. • Maximum length of six characters. • Declared as a string data type to allow for zeros in the first position. • The only acceptable value is six characters in a sequence with each character in a range from 0 to 9.
Immunization Name	ImmunizationCode	String	• Optional element. • Maximum length of thirty-five characters. • Any of the following characters, including the space character, are valid: ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789 ~ ! @ # $ % ^ & * ( ) - _ + = : ; “ ‘ , . / < > ?
Immunization Dose	ImmunizationDose	Integer	• Optional element • Maximum length of two digits.
Immunization Date	ImmunizationDate	Date	• Optional element. • The date type implements an ISO data type in the form of yyyy-mm-dd. • The only acceptable value is a valid date with a minimum value greater than or equal to 1957-01-01 and less than 2012-01-01.

Element Name	XML Name	Data Type	Restriction
Disciplinary Action End Date	DisciplineActionDate	Date	• Optional element. • The date type implements an ISO data type in the form of yyyy-mm-dd. • The only acceptable value is a valid date with a minimum value greater than current date (date record is created).
Disciplinary Action Number	DisciplineActionNum	String	• Optional element. • Maximum length of three characters.
Disciplinary Action Code	DisciplineActionCode	String	• Optional element. • Maximum length of two characters. • If provided, the only acceptable values are listed in Code Table TC06.
Disciplinary Action Reason	DisciplineActionReason	String	• Optional element. • Maximum length of two characters. • If provided, the only acceptable values are listed in Code Table TC07.

Example of TREx Instance

Following is an example of the XSD for an extract file for a student record. Please reference Appendix B of this manual for an example of the full TREx XML schema.


```
  <?xml version="1.0" encoding="UTF-8" ?>
- <trex:TRExStudentRecords xmlns:trex="urn:us:tx:state:tea:TREx:v1.0"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
- <TRExStudentRecord>
    - <StudentIdentification>
    + <Name>
    <StudentID>333224444</StudentID>
  - <Address>
        <Address>101 Congress Ave.</Address>
        <City>Austin</City>
        <StateProvince>TX</StateProvince>
        <PostalCode>78701</PostalCode>
    </Address>
    </StudentIdentification>
- <Parent>
    - <Name>
          <FirstName>Cassandra</FirstName>
          <LastName>Jones</LastName>
      </Name>
    </Parent>
- <Parent>
    - <Name>
          <FirstName>George</FirstName>
          <LastName>Smith</LastName>
      </Name>
    </Parent>
- <StudentDemographic>
      <Gender>M</Gender>
      <Race>5</Race>
      <BirthDate>1997-4-1</BirthDate>
      <Language>98</Language>
      <Migrant>0</Migrant>
      <Homeless>1</Homeless>
    </StudentDemographic>
- <School>
      <SchoolID>123456789</SchoolID>
      <SchoolName>Bowie High School</SchoolName>
      <DistrictID>123456</DistrictID>
      <DistrictName>Austin ISD</DistrictName>
    - <Address>
          <Address>4103 Slaughter Lane</Address>
          <City>Austin</City>
          <Country>US</Country>
          <PostalCode>78749</PostalCode>
        </Address>
```

```
        <PhoneNumber>5124145247</PhoneNumber>
        <Fax>5122920527</Fax>
    </School>
- <Enrollment>
      <GradeLevel>05</GradeLevel>
      <EntryDate>2002-8-30</EntryDate>
      <ExitDate>2007-1-3</ExitDate>
      <WithdrawDate>2007-3-1</WithdrawDate>
      <WithdrawReason>01</WithdrawReason>
      <GradePromoted>11</GradePromoted>
    </Enrollment>
- <SpecialPrograms>
      <LEP>0</LEP>
      <EconomicDisadvantaged>00</EconomicDisadvantaged>
      <AtRisk>0</AtRisk>
      <TitleI>0</TitleI>
      <SpecialEd>0</SpecialEd>
      <IEP>0</IEP>
      <Bilingual>0</Bilingual>
      <ESL>0</ESL>
      <GiftedTalented>2</GiftedTalented>
      <CTE>0</CTE>
      <PersonalGradPlan>0</PersonalGradPlan>
    </SpecialPrograms>
- <Assessment>
      <TestName>01</TestName>
      <TestLevel>10</TestLevel>
      <TestDate>2006-3</TestDate>
      <TestScore>100</TestScore>
    </Assessment>
- <Assessment>
      <TestName>05</TestName>
      <TestLevel>11</TestLevel>
      <TestDate>2007-3</TestDate>
      <TestScore>100</TestScore>
    </Assessment>
- <Assessment>
      <TestName>06</TestName>
      <TestLevel>11</TestLevel>
      <TestDate>2007-3</TestDate>
      <TestScore>100</TestScore>
    </Assessment>
- <Attendance>
      <DaysAttended>80</DaysAttended>
      <DaysAbsent>0</DaysAbsent>
    </Attendance>
- <Immunization>
      <ImmunizationCode>DTP</ImmunizationCode>
      <ImmunizationDate>2002-4-1</ImmunizationDate>
      <ImmunizationDose>25</ImmunizationDose>
```

```
    </Immunization>
- <DisciplineAction>
      <DisciplineActionDate>2006-12-21</DisciplineActionDate>
      <DisciplineActionCode>25</DisciplineActionCode>
      <DisciplineActionReason>26</DisciplineActionReason>
    </DisciplineAction>
- <AcademicStatus>
      <GraduationDate>2007-6</GraduationDate>
      <GraduationDiplomaType>07</GraduationDiplomaType>
    </AcademicStatus>
- <CurrentCoursework>
    - <Course>
          <CourseTitle>MATH 101</CourseTitle>
          <CourseID>02640010</CourseID>
          <ClassPeriod>6</ClassPeriod>
          <SubjectArea>MA</SubjectArea>
          <CourseGrade>A</CourseGrade>
          <CourseCredit>1.0</CourseCredit>
          <Explanation>A</Explanation>
          <CourseTeacher>Smith</CourseTeacher>
    </Course>
      <SchoolYear>2006-2007</SchoolYear>
      <GradeLevel>05</GradeLevel>
    </CurrentCoursework>
- <AcademicSession>
      <SchoolYear>2006-2007</SchoolYear>
      <GradeLevel>05</GradeLevel>
    - <Course>
          <CourseTitle>ENGLISH 101</CourseTitle>
          <CourseGrade>A</CourseGrade>
          <CourseCredit>1.0</CourseCredit>
          <SemesterSeq>1</SemesterSeq>
    </Course>
- <Course>
          <CourseTitle>SCIENCE 101</CourseTitle>
          <CourseGrade>A</CourseGrade>
          <CourseCredit>1.0</CourseCredit>
          <SemesterSeq>1</SemesterSeq>
    </Course>
- <AcademicSummary>
    <GPA>3.0</GPA>
    </AcademicSummary>
    </AcademicSession>
- <AcademicSummary>
          <GPA>3.0</GPA>
          <ClassTotalNumber>200</ClassTotalNumber>
          <ClassRank>15</ClassRank>
          <ClassRankingDate>2006-12-1</ClassRankingDate>
          <Quartile>1</Quartile>
      </AcademicSummary>
```

```
</TRExStudentRecord>
</trex:TRExStudentRecords>
```

TREx Complex Types

Following is a list of the complex types and groups included in the TREx XML schema. Please refer to Appendix B for a full copy of the TREx XML Schema.

Complex Type Name	Sequence
AcademicSessionType	SchoolYear GradeLevel CourseType AcademicSummaryType
AcademicStatusType	GraduationDate GraduationDiplomaType CertificateDate TexasGrantType
AcademicSummaryType	GPA ClassTotalNumber ClassRank ClassRankingDate Quartile CollegeCampusCode
AddressType	Address City StateProvince Country PostalCode
AssessmentType	TestName TestLevel TestDate TestScore TestCode AssessmentSubTest
AttendanceType	DaysAttended DaysAbsent
CourseType	CourseTitle CourseID Abbreviation Semester ClassPeriod SubjectArea CourseGrade WithdrawGrade GradeAverage CourseCredit PassFailCredit Explanation CourseTeacher CreditCampus SemesterSeq

Complex Type Name	Sequence
CurrentCourseworkType	CourseType SchoolYear GradeLevel
DisciplineActionType	DisciplineActionDate DisciplineActionNum DisciplineActionCode DisciplineActionReason
EnrollmentType	GradeLevel EntryDate ExitDate WithdrawDate WithdrawReason GradePlaced GradePromoted GradeRetained
ImmunizationType	ImmunizationCode ImmunizationDate ImmunizationDose
ParentType	PersonNameType
PersonNameType	FirstName MiddleName LastName Suffix
PhoneNumberGroup	PhoneNumber Fax
SchoolType	SchoolID SchoolName DistrictID DistrictName AddressType PhoneNumberGroup
SpecialProgramsType	LEP EconomicDisadvantaged AtRisk TitleI SpecialEd IEP Bilingual ESL GiftedTalented CTE Personal Graduation Plan

Complex Type Name	**Sequence**
StudentDemographicType	Gender Race BirthDate Language Migrant Homeless
StudentIdentificationType	PersonNameType StudentID PriorID LocalID AddressType
Student RecordType	StudentIdentificationType ParentType StudentDemographicType SchoolType EnrollmentType SpecialProgramsType AssessmentType AttendanceType ImmunizationType DisciplineActionType AcademicStatusType CurrentCourseworkType AcademicSessionType AcademicSummaryType

TREx Simple Types

Following is a list of the simple types found in the TREx XML schema:

Common Name	Simple Type
Academic Year	SchoolYear
Address (Student/Campus)	Address
Assessment Date	TestDate
Assessment Grade Level	TestLevel
Assessment Name	TestName
Assessment Score	TestScore
Assessment Score Code	TestCode
Assessment Subtest	AssessmentSubTest
At Risk Indicator	AtRisk
Bilingual Indicator	Bilingual
Campus Awarding Credit	CreditCampus
Campus Fax	Fax
Campus ID	SchoolID
Campus Name	SchoolName
Campus Phone	PhoneNumber
Career and Tech Ed Indicator	CTE
Certification of Coursework Completion	CertificateDate
City (Student/Campus)	City
Class Period	ClassPeriod
Class Rank	ClassRank
College Board Campus Code	CollegeCampusCode
Country	Country
Course Abbreviation	Abbreviation
Course Category	SubjectArea
Course Credit	CourseCredit
Course Grade	CourseGrade
Course Grade Average	GradeAverage
Course Name	CourseTitle
Course Number	CourseID
Course Semester	Semester
Course Teacher	CourseTeacher
Date of Birth	BirthDate
Date of Ranking	ClassRankingDate
Disciplinary Action Code	DisciplineActionCode
Disciplinary Action End Date	DisciplineActionDate
Disciplinary Action Number	DisciplineActionNum
Disciplinary Action Reason	DisciplineActionReason
District ID	DistrictID
District Name	DistrictName
Economically Disadvantaged Indicator	EconomicDisadvantaged
ESL (English as Second Language) Indicator	ESL
Ethnicity	Race
First Name (Student/Parent)	FirstName
Gender Code	Gender
Generation Code (Student/Parent)	Suffix
Gifted/Talented Indicator	GiftedTalented
Grade Level	GradeLevel

Common Name	Simple Type
Grade of Retention	GradeRetained
Grade Point Average	GPA
Graduation Date	GraduationDate
Graduation Program Type	GraduationDiplomaType
Home Language	Language
Homeless Indicator	Homeless
IEP (Individualized Education Program) Indicator	IEP
Immunization Date	ImmunizationDate
Immunization Description	ImmunizationCode
Immunization Dose	ImmunizationDose
Last Date of Attendance	ExitDate
Last Name (Student/Parent)	LastName
Last Withdrawal Date	WithdrawDate
LEP (Limited English Proficiency) Indicator	LEP
Local Student ID	LocalID
Middle Name (Student/Parent)	MiddleName
Migrant Indicator	Migrant
Number in Class	ClassTotalNumber
Original Entry Date	EntryDate
Pass/Fail Credit Indicator	PassFailCredit
Personal Graduation Plan	PersonalGradPlan
Placed In Grade	GradePlaced
Prior ID	PriorID
Promoted To Grade	GradePromoted
Quartile	Quartile
Semester Sequence	SemesterSeq
Special Education Indicator	SpecialEd
Special Explanation	Explanation
State (Student/Campus)	StateProvince
Student ID	StudentID
Texas Grant Indicator	TexasGrant
Title I Part A Indicator	TitleI
Total Days Absent	DaysAbsent
Total Days Present	DaysAttended
Withdrawal Course Grade	WithdrawGrade
Withdrawal Reason	WithdrawReason
Zip (Student/Campus)	PostalCode

TREx Enumerated Values

Following is a list of the data elements with enumerated values. These are described further in Sections 2 and 3 of this manual, as well as included in the schema in Appendix B.

Code Table Common Name	Element XML Short Name	Location
Assessment Name	TestName	Student Record; Transcript
Assessment Score Code	TestCode	Student Record
Career Tech Ed Indicator	CTE	Student Record
Course Category	SubjectArea	Transcript
Country	Country	Transcript
Discipline Action Code	DisciplineActionCode	Student Record
Discipline Action Reason	DisciplineActionReason	Student Record
Economic Disadvantaged	EconomicDisadvantage	Student Record
Ethnicity	Race	Student Record; Transcript
Gender	Gender	Student Record; Transcript
Generation Code	Suffix	Student Record; Transcript
Grade Level	GradeLevel	Student Record; Transcript
Graduation Program Type	GraduationDiplomaType	Transcript
Home Language	Language	Student Record
LEP Indicator	LEP	Student Record
Quartile	Quartile	Transcript
Participation Indicator Code	Homeless	Student Record
Participation Indicator Code	SpecialEd	Student Record
Participation Indicator Code	ESL	Student Record
Participation Indicator Code	AtRisk	Student Record
Participation Indicator Code	Migrant	Student Record
Participation Indicator Code	IEP	Student Record
Participation Indicator Code	PersonalGradPlan	Student Record
Program Status Indicator Code	Bilingual	Student Record
Program Status Indicator Code	GiftedTalented	Student Record
Semester Sequence Code	SemesterSeq	Student Record, Transcript
Special Explanation Code	Explanation	Transcript
State	StateProvince	Student Record, Transcript
Texas Grant Indicator Code	TexasGrant	Transcript
Title I Part A Indicator	TitleI	Student Record
Withdrawal Reason Code	WithdrawReason	Student Record

Hierarchy of XML Elements

The following illustrates the hierarchy of XML elements within the TREx schema:

(1) - required: one and only one element of that type can be present
(0 or 1) - optional
(0 ... n) – optional but can be repeated
(1 ... n) – required and can be repeated

- TRExStudentRecords
  - TRExStudentRecord (1 … n)
    - StudentIdentification (1)
      - Name (1)
        - FirstName (1)
        - MiddleName (0 or 1)
        - LastName (1)
        - Suffix (0 or 1)
      - StudentID (1)
      - PriorID (0 or 1)
      - LocalID (0 or 1)
      - Address (0 or 1)
        - Address (0 or 1)
        - City (0 or 1)
        - StateProvince (0 or 1)
        - Country (0 or 1)
        - PostalCode (0 or 1)
    - Parent (0 … n)
      - Name (1)
        - FirstName (1)
        - MiddleName (0 or 1)
        - LastName (1)
        - Suffix (0 or 1)
    - StudentDemographic (1)
      - Gender (1)
      - Race (1)
      - BirthDate (1)
      - Language (0 or 1)
      - Migrant (0 or1)
      - Homeless (0 or 1)
    - School (1)
      - SchoolID (1)
      - SchoolName (1)
      - DistrictID (1)
      - DistrictName (0 or 1)
      - Address (0 or 1)
        - Address (0 or 1)
        - City (0 or 1)
        - StateProvince (0 or 1)
        - Country (0 or 1)
        - PostalCode (0 or 1)
      - PhoneNumber (1)
      - Fax (0 or 1)
    - Enrollment (1)
      - GradeLevel (1)
      - EntryDate (0 or 1)

- ExitDate (0 or 1)
- WithdrawDate (0 or 1)
- WithdrawReason (0 or 1)
- GradePlaced (0 or 1)
- GradePromoted (0 or 1)
- GradeRetained (0 or 1)

SpecialPrograms (0 or 1)
- LEP (0 or 1)
- EconomicDisadvantaged (0 or 1)
- AtRisk (0 or 1)
- TitleI (0 or 1)
- SpecialEd (0 or 1)
- IEP (0 or 1)
- Bilingual (0 or 1)
- ESL (0 or 1)
- GiftedTalented (0 or 1)
- CTE (0 or 1)
- PersonalGradPlan (0 or 1)

Assessment (0 … n)
- TestName (0 or 1)
- TestLevel (0 or 1)
- TestDate (0 or 1)
- TestScore (0 or 1)
- TestCode (0 or 1)
- AssessmentSubTest (0 … n)

Attendance (0 or 1)
- DaysAttended (0 or 1)
- DaysAbsent (0 or 1)

Immunization (0 … n)
- ImmunizationCode (0 or 1)
- ImmunizationDate (0 or 1)
- ImmunizationDose (0 or 1)

DisciplineAction (0 … n)
- DisciplineActionDate (0 or 1)
- DisciplineActionNum (0 or 1)
- DisciplineActionCode (0 or 1)
- DisciplineActionReason (0 or 1)

AcademicStatus (0 or 1)
- GraduationDate (0 or 1)
- GraduationDiplomaType (0 or 1)
- CertificateDate (0 or 1)
- TexasGrant (0 or 1)

CurrentCoursework (0 or 1)
- Course (1 … n)
  - CourseTitle (0 or 1)
  - CourseID (0 or 1)
  - Abbreviation (0 or 1)
  - Semester (0 or 1)
  - ClassPeriod (0 or 1)
  - SubjectArea (0 or 1)
  - CourseGrade (0 … n)
  - WithdrawGrade (0 or 1)
  - GradeAverage (0 or 1)
  - CourseCredit (0 or 1)
  - PassFailCredit (0 or 1)
  - Explanation (0 … n)

- CourseTeacher (0 or 1)
- CreditCampus (0 or 1)
- SemesterSeq (0 or 1)
- SchoolYear (1)
- GradeLevel (1)

AcademicSession (0 … n)

- SchoolYear (1 … n)
- GradeLevel (1)
- Course (1 … n)
  - CourseTitle (0 or 1)
  - CourseID (0 or 1)
  - Abbreviation (0 or 1)
  - Semester (0 or 1)
  - ClassPeriod (0 or 1)
  - SubjectArea (0 or 1)
  - CourseGrade (0 … n)
  - WithdrawGrade (0 or 1)
  - GradeAverage (0 or 1)
  - CourseCredit (0 or 1)
  - PassFailCredit (0 or 1)
  - Explanation (0 … n)
  - CourseTeacher (0 or 1)
  - CreditCampus (0 or 1)
  - SemesterSeq (0 or 1)
- AcademicSummary (0 or 1)
  - GPA (0 or 1)
  - ClassTotalNumber (0 or 1)
  - ClassRank (0 or 1)
  - ClassRankingDate (0 or 1)
  - Quartile (0 or 1)
  - CollegeCampusCode (0 or 1)

AcademicSummary (0 or 1)

- GPA (0 or 1)
- ClassTotalNumber (0 or 1)
- ClassRank (0 or 1)
- ClassRankingDate (0 or 1)
- Quartile (0 or 1)
- CollegeCampusCode (0 or 1)