

Style Rules for The Common Core Ontologies

Version 1.0.0

Maintained by The Common Core Developer's Group

Date: August 30, 2025

Introduction

The purpose of this document is to list the rules for every annotation property used by The Common Core Ontologies (CCO). These rules include the value of the property, cardinality, and domain and range restrictions. This document is intended to be used both by developers working with or using CCO, as well as to guide the creation of automated quality control checks.

The value of all CCO annotation properties shall be free of grammatical mistakes.

The language of these requirements conforms to the Easy Approach to Requirements Syntax (EARS). This syntax is intended to make it easy to search for and understand the listed requirements.

Versioning

1. Every ontology in CCO shall have a version IRI.

Example: <https://www.commoncoreontologies.org/2024-11-06/AllCoreOntology>

2. Note: For more information on versioning, see the required property 'version info'.

Maintenance of Ontology Elements

1. Every class, individual, and property shall only be the subject of a triple in one ontology in CCO.
2. Note: An example of a violation of this rule would be the appearance of the following triple in two ontologies in CCO: cco:ont00000178 rdf:type owl:Class.

Annotation Properties Used in the Curation of CCO

Required Properties

bibliographic citation

1. Every resource shall have one or more bibliographic citations.
2. Every value of bibliographic citation shall be in MLA format.

3. Note: CCO will prefer rigorously vetted sources reflective of subject matter expertise, but more general sources such as Merriam Webster and Wikipedia are acceptable, as are individual developers and working group decisions.

default display label

1. Every class, property, and individual in CCO shall have exactly one default display label per language.
2. The value of every 'default display label' shall appear in title case.
3. Where the value of default display label is in a natural language, then that value shall have a corresponding xsd language tag.
4. Note: This annotation property is intended for use as a default display labels for those information systems that require them; that is, this label is intended to be a user-friendly label that does not conform to the ontologist's preferred labeling practices. Information systems with loose labeling requirements will be encouraged to default to this label. However, if the audience of the tool is primarily technical developers (e.g. ontologists or software developers), the appropriate label remains rdfs label.

definition

1. Every class and property shall have exactly one definition and that definition shall be in English.
2. Every value of every definition shall have an English language tag.
3. Every value of every definition for non-primitive classes shall have a genus-species form and shall contain rdfs label of the parent class to denote the genus of the class.
4. Every value of every definition for properties shall reference the rdfs labels of the relata and state the condition under which the relation may hold.
5. Every definition shall be linked to the supporting bibliographic citation by an owl annotation axiom.
6. Every value of every definition shall be a complete grammatical sentence that is set in sentence case and terminates in a period.
7. Note: For developers who wish to serve international communities by making CCO available in other languages, developers are encouraged to create an overlay of CCO in which such annotations would be available, to include definitions in other languages.

description

1. Every individual and ontology shall have exactly one description.
2. Every value of every description shall be in English and shall have an English language tag.
3. Every value of the description of an individual shall provide roughly 1-5 complete sentences that attempt to provide a definite description that uniquely refers to that individual.

4. Every value of the description of an ontology shall provide roughly 1-5 complete sentences that attempt to describe the scope of that ontology.

is curated in ontology

1. Every class, property, and individual shall have exactly one is curated in ontology statement.
2. Every value of is curated in ontology shall be the IRI of the ontology in which the resource is maintained.
3. Note: It follows from 1 and 2 that no class, property, or individual may be maintained in more than one ontology in CCO.

license

1. Every ontology shall have exactly 1 license.
2. The value of the license shall be "BSD 3-Clause:
<https://github.com/CommonCoreOntology/CommonCoreOntologies/blob/master/LICENSE>".

rdfs label

1. Every ontology element shall have exactly one rdfs label per language.
2. Every rdfs label shall be globally unique throughout CCO, such that no two ontology elements share the same value of rdfs label with the same language tag.
3. Every ontology element shall have exactly 1 rdfs label in English.
4. Every rdfs label shall conform to the standards of the ontologist preferred label, to include a preference for singular sortal noun phrases.
5. Every rdfs label for every subclass of 'Act' shall have the prefix 'Act of'.
6. Every rdfs label for every subclass of 'Process' that is not a subclass of 'Act' shall use the prefix 'Process of'.
7. Exceptions to rules 5 and 6 may be made, and such exceptions will be noted as an editorial note on the class.
8. Every value of rdfs label shall be set in title case.
9. Where the value of rdfs label is in a natural language, then that value shall have a corresponding xsd language tag.

rights

1. Every ontology shall have exactly one copyright statement.
2. The value of the copyright statement shall be "CUBRC Inc., see full license."
3. The value of the copyright statement shall not have an xsd language tag.

SI unit label

1. Every individual measurement unit that has an SI unit label shall have an SI unit label.
2. Every value of SI unit label shall conform to the International System of Units.

SI unit symbol

1. Every individual measurement unit shall have an SI unit symbol.
2. Every value of SI unit label shall conform to the International System of Units.

version info

1. Every ontology shall have exactly one version info statement.
2. Every value of version info shall not have an xsd language tag.
3. Every value of the version info statement will reflect the version number of the release.
 - a. Example: "Version 2.0".

Optional Properties

acronym

1. Every class, property, and individual in CCO may have an acronym.
2. When the value of acronym is in a natural language, that value will have an xsd language tag corresponding to its natural language.

alternative label

1. Every class, property, and individual in CCO may have one or more alternative labels.
2. When the value of alternative label is in a natural language, then that value shall have an xsd language tag corresponding to the natural language of the alternative label.

example

1. Every ontology element in CCO may include one or more examples.
2. Every value of example will consist of one or more complete sentences set in sentence case and terminating in a period.
3. Every value of example shall contain only one example.

scope note

1. Every class or property in CCO may include one or more scope notes.
2. Every value of scope note for a class or property will consist of one or more complete sentences that clearly describe the portion of reality that element is intended to represent. The purpose of such a statement is to provide additional clarification beyond the definition to ensure the term is used correctly and consistently.
3. Note: For providing a description of the scope of an ontology, please see dc:description.

Annotation Properties Published but Not Used in the Curation of CCO

Other annotation properties available within the CCO import closure at this time include the following. These are part of the vocabulary of CCO, but shall not be used to annotate resources published within CCO itself:

- code license
- comment
- content license
- contributor
- copyright
- designator annotation
- doctrinal acronym
- doctrinal definition
- doctrinal label
- doctrinal source
- editorial note
- has token unit
- http query string
- identifier
- interval measurement annotation
- is tokenized by
- measurement annotation
- nominal measurement annotation
- ordinal measurement annotation
- query text
- ratio measurement annotation
- term editor
- title

Appendix - Annotation Property IRIs in CCO

IRI	Label
http://purl.org/dc/elements/1.1/contributor	contributor
http://purl.org/dc/terms/description	description
http://purl.org/dc/terms/license	license
http://purl.org/dc/terms/title	title
http://purl.org/dc/elements/1.1/identifier	identifier
http://www.w3.org/2000/01/rdf-schema#label	rdfs label
http://www.w3.org/2004/02/skos/core#altLabel	alternative label
http://www.w3.org/2004/02/skos/core#definition	definition
http://www.w3.org/2004/02/skos/core#example	example
http://www.w3.org/2004/02/skos/core#scopeNote	scope note
http://purl.org/dc/terms/bibliographicCitation	bibliographic citation
http://purl.org/dc/terms/rights	rights
https://www.commoncoreontologies.org/ont00001754	definition source
https://www.commoncoreontologies.org/ont00001760	is curated in ontology
https://www.commoncoreontologies.org/ont00001753	acronym
https://www.commoncoreontologies.org/ont00001735	query text
https://www.commoncoreontologies.org/ont00001737	doctrinal definition
https://www.commoncoreontologies.org/ont00001739	ordinal measurement annotation
https://www.commoncoreontologies.org/ont00001746	measurement annotation
https://www.commoncoreontologies.org/ont00001741	nominal measurement annotation
https://www.commoncoreontologies.org/ont00001762	term editor
https://www.commoncoreontologies.org/ont00001743	content license
https://www.commoncoreontologies.org/ont00001744	copyright
https://www.commoncoreontologies.org/ont00001745	doctrinal source
https://www.commoncoreontologies.org/ont00001747	ratio measurement annotation
https://www.commoncoreontologies.org/ont00001748	doctrinal label

https://www.commoncoreontologies.org/ont00001749	doctrinal acronym
https://www.commoncoreontologies.org/ont00001752	has token unit
https://www.commoncoreontologies.org/ont00001756	interval measurement annotation
https://www.commoncoreontologies.org/ont00001757	designator annotation
https://www.commoncoreontologies.org/ont00001758	http query string
https://www.commoncoreontologies.org/ont00001759	code license
https://www.commoncoreontologies.org/ont00001761	is tokenized by
http://www.w3.org/2004/02/skos/core#scopeNote	scope note
https://www.commoncoreontologies.org/ont00001738	SI unit label
https://www.commoncoreontologies.org/ont00001740	SI unit symbol
https://www.commoncoreontologies.org/ont00002050	default display label

References

<https://medium.com/paramtech/ears-the-easy-approach-to-requirements-syntax-b09597aae31d>