Academic Standards and Benchmarks

Resource Alignment Search and Retrieval Use Cases

Data And Metadata Relating To Academic Standards And Benchmarks

Benchmarks as Controlled Vocabulary – A managed master list of the text of all the state standards and a uniquely assigned identifying number for each
Benchmark ID = c0b645edf4 {e.g. permanently assigned identifier}
Benchmark Text = "4.7.7 Model the Pythagorean Theorem; solve for the hypotenuse using the theorem"

Identification Metadata – State-issued facts tightly coupled to the Benchmark
Document = 2001 Nevada Mathematics Content Standards for Kindergarten and Grades 1 through 8 and 12
Adoption Year = 2001
State = Nevada
Grade = 7
Position in State Standards Hierarchy =
   Math
  |_____Spatial Relationships and Geometry
   |_____Content Standard 4.0
    |_____Pythagorean Theorem
     |_____{Benchmark text value}

Descriptive Classification Metadata (Opinion/Derived/Inferred) about the Benchmark itself
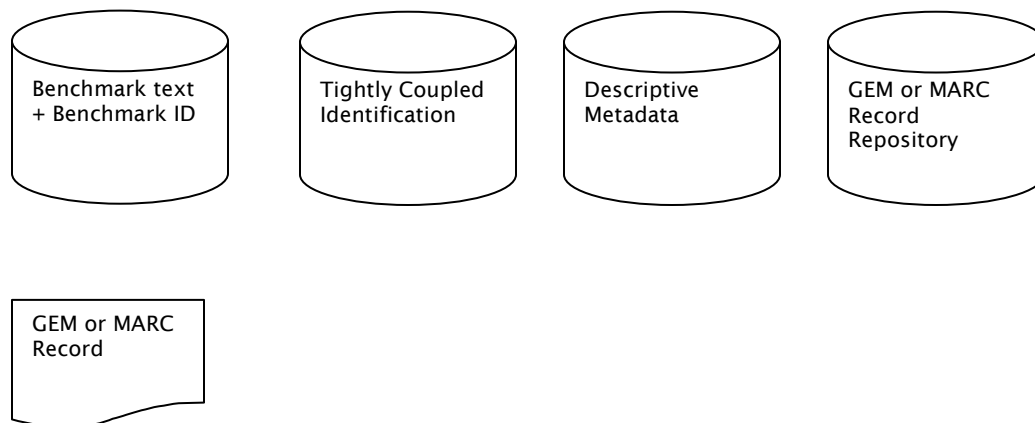Subject
Key Words
McREL Classification Type
Implied Lexile (reading level)
Gardner's Multiple Intelligence Classification
Compendix Classification Number
Dewey Decimal Number (?)
LCSH (?)
Etc.

Data And Metadata Relating To Educational Resources
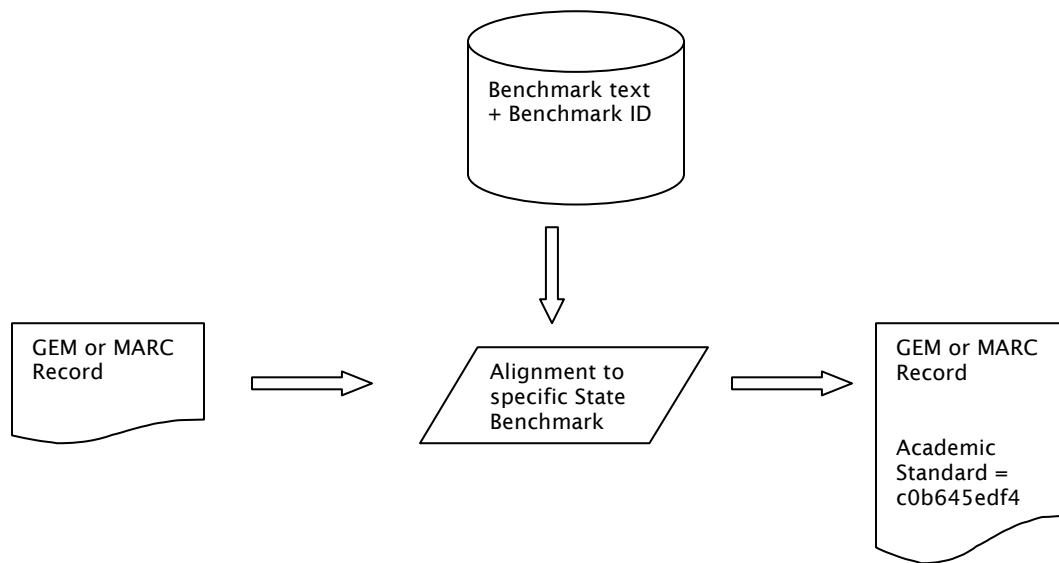
Cataloging of a resource including reference to one or more academic standards or benchmarks – Pseudo Representation of GEM or MARC record:

Title = My Hypotenuse Math Lesson
Author = John Smith
URL = http://www.mylesson.com/hypotenuse
Copyright Date = 2002
Grade = 5-9
Subject = Math
Abstract =
Academic Standard = c0b645edf4
Academic Standard Authority = John Smith
     Or,
Academic Standard
     Academic Standard State = Nevada
     Academic Standard Document = "2001….."
     Academic Standard Grade Level = 7
     Academic Standard Text = "4.7.7 Model the Pythagorean…"
     Etc.

Information Repositories

Benchmark text
+ Benchmark ID

Tightly Coupled
Identification

Descriptive
Metadata

GEM or MARC
Record
Repository

GEM or MARC
Record

Use Case 1 – Create Gem or MARC Catalog Record

Benchmark text + Benchmark ID

GEM or MARC Record

Alignment to specific State Benchmark

GEM or MARC Record

Academic Standard = c0b645edf4

Use Case 2 –Infer related alignments

GEM or MARC Record

Academic Standard = c0b645edf4

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Tightly Coupled Identification

⟺

Descriptive Metadata

⟺

Benchmark text + Benchmark ID

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Potentially Related Academic Standards

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Alignment to additional State Academic Standards

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GEM or MARC Record

Academic Standard = c0b645edf4

Academic Standard = e4b0c6edb9
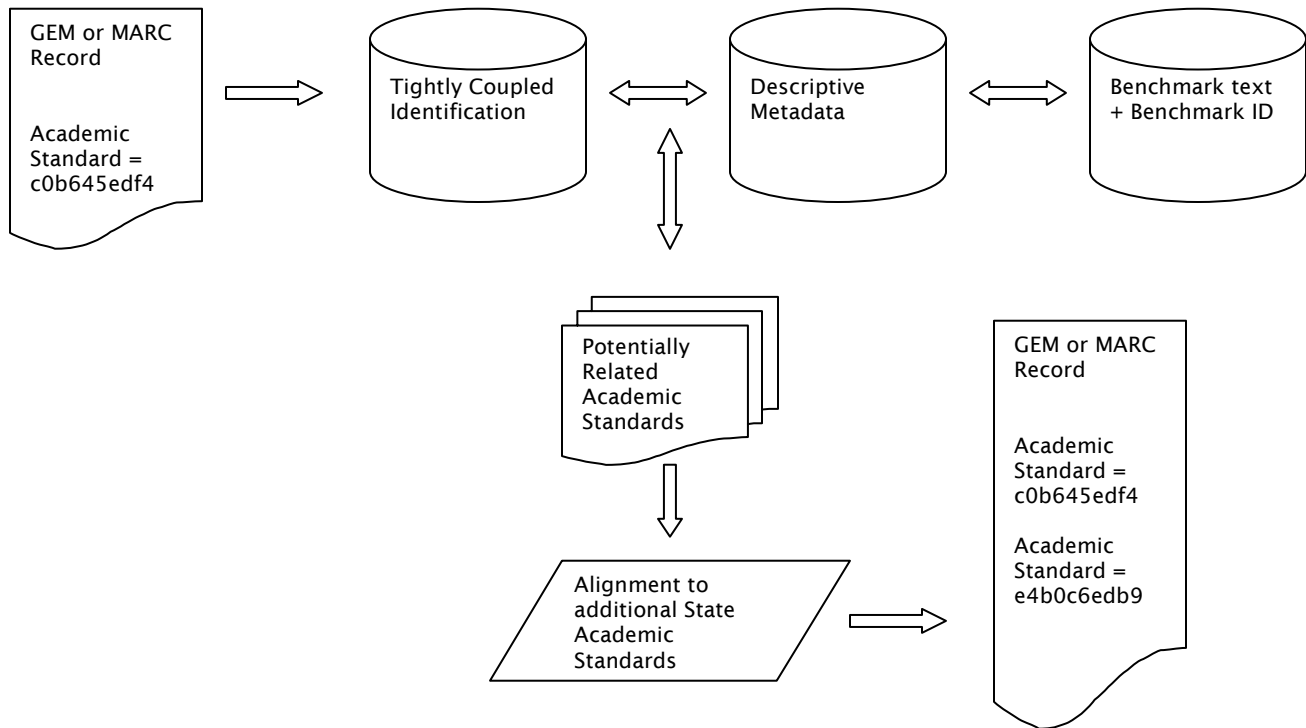
Use Case 3 – Using a Cataloging System (e.g. JES & Co.'s Academic Standards and Assessment System) to Locate Matching Resources

GEM or MARC Record Repository

GEM or MARC Record Repository

ASAS Agent

Query – Find resources matching Academic Standard = c0b645edf4

Benchmark text + Benchmark ID

Matching Gem or MARC Records
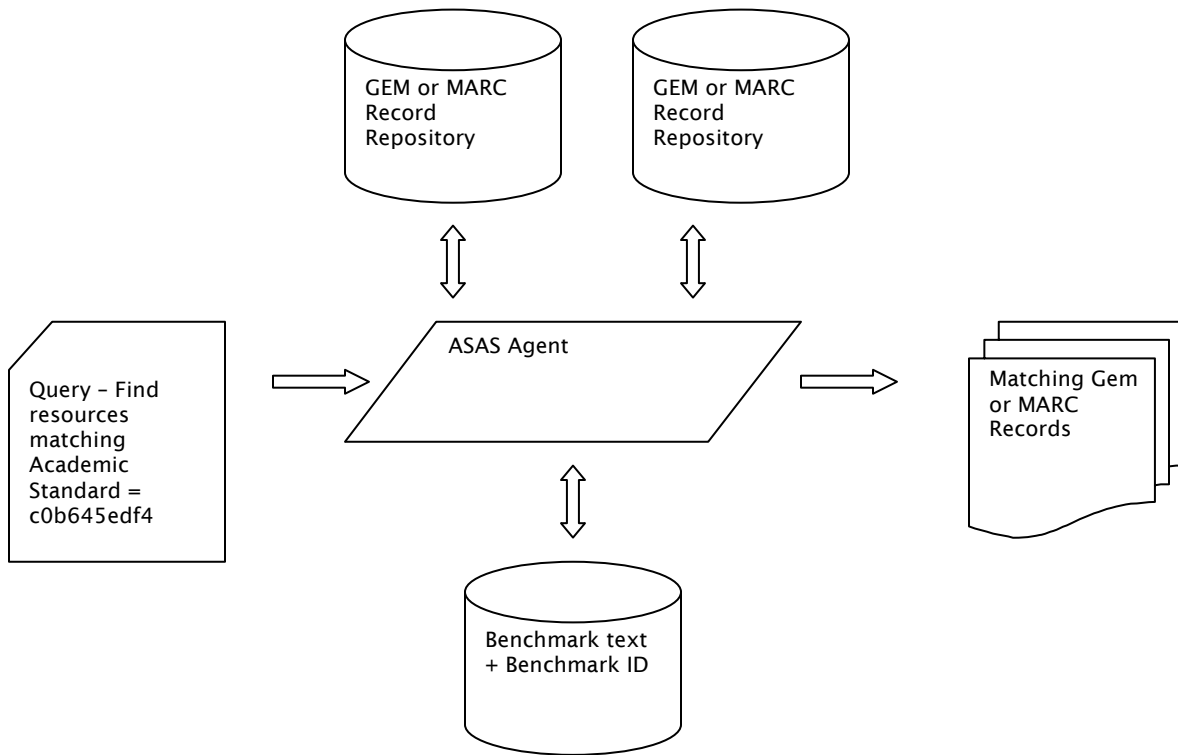
Use Case 4 – Using A Cataloging System (e.g. ASAS) to find Related Resources

Tightly Coupled Identification

Descriptive Metadata

Benchmark text + Benchmark ID

Query – Find resources matching Academic Standard = e4b0c6edb9

ASAS Agent

Academic Standard = e4b0c6edb9 Relates To Academic Standard = c0b645edf4

GEM or MARC Record Repository

GEM or MARC Record Repository

Query – Find resources matching Academic Standard = c0b645edf4

ASAS Agent

Matching Gem or MARC Records

Benchmark text + Benchmark ID