DLESE as NDR Use Case

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Overview

How can we leverage the NDR data model and API to support Pathway-type services?

- Replicate targeted aspects of DLESE's data model and services in the NSDL Data Repository
- Motivation for, and potential value of, this work
- Our 'use case' as springboard for discussion of common needs, issues and concerns

About DLESE

- Operational since 2001
- About 1.5 million sessions/year, approx. 60% K-12 teachers and learners
- High availability (99.7%)
- Rich metadata and annotations
- Rich support for educational standards
- Architectural approach emphasizing ‘contextualization services’

DLESE: Motivation and Value

- Operations: Lower costs, while preserving high availability
- Impact: Focus more on education and outreach, less on maintaining infrastructure
- Standards: “end-to-end” support, 3rd party assignments, correlations (NSES, AAAS, state)
- Interdisciplinary views: Improved NSDL integration, share rich descriptions and annotations
- Next generation services: From metadata-centric search to learning environments (e.g., Teaching Boxes, which mix concepts, metadata, services, and primary content)

NSDL: Potential Value

NDR is a significant investment and opportunity

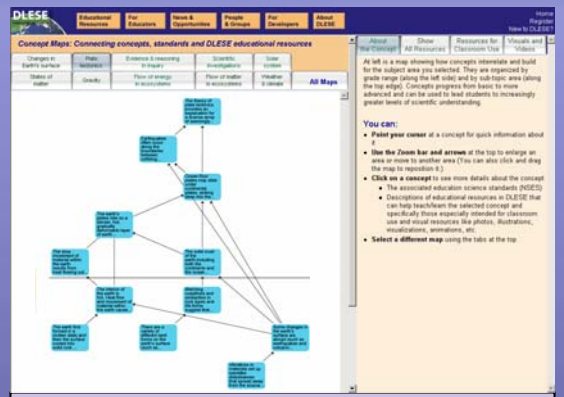
- Demonstrate economies of scale, lower technical and operating costs
- Common approaches to critical core services like support for standards (saves money, improves user experience)
- Demonstrate rich educational services leveraging Fedora's relationship model and the potential to more flexibly solve existing challenges (e.g. 3rd party assignment of standards, or Teaching Box-like products)
- Develop critical mass of users to support social tagging, recommender engines, etc. by pooling our user base
- Test the readiness, expressiveness and facility of the NDR API (so you don’t have to)

Contextualization Services

Choosing and Using

- Resource-centric discovery and presentation
- Integrating view over multiple collections & annotation sources

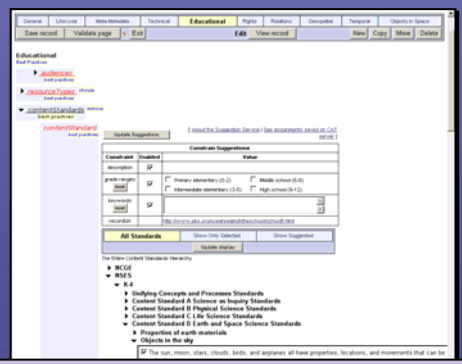
Knowledge Organization Services



Strand Map Service

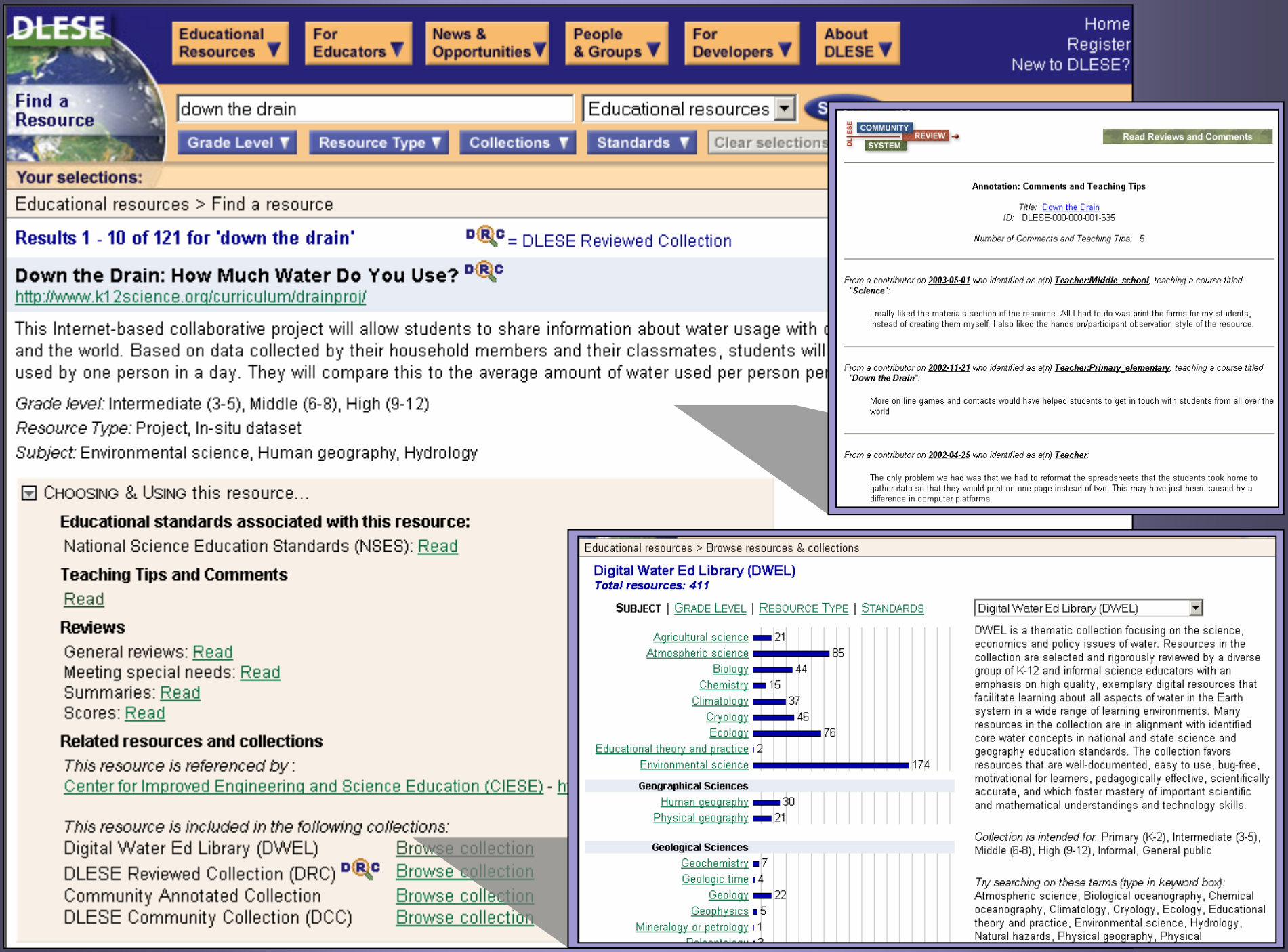
- Making connections between resources, ideas, and people
- Concept to concept
- Standard to standard
- Terms to user groups

Characterization and Enriching Services



DLESE Collection System

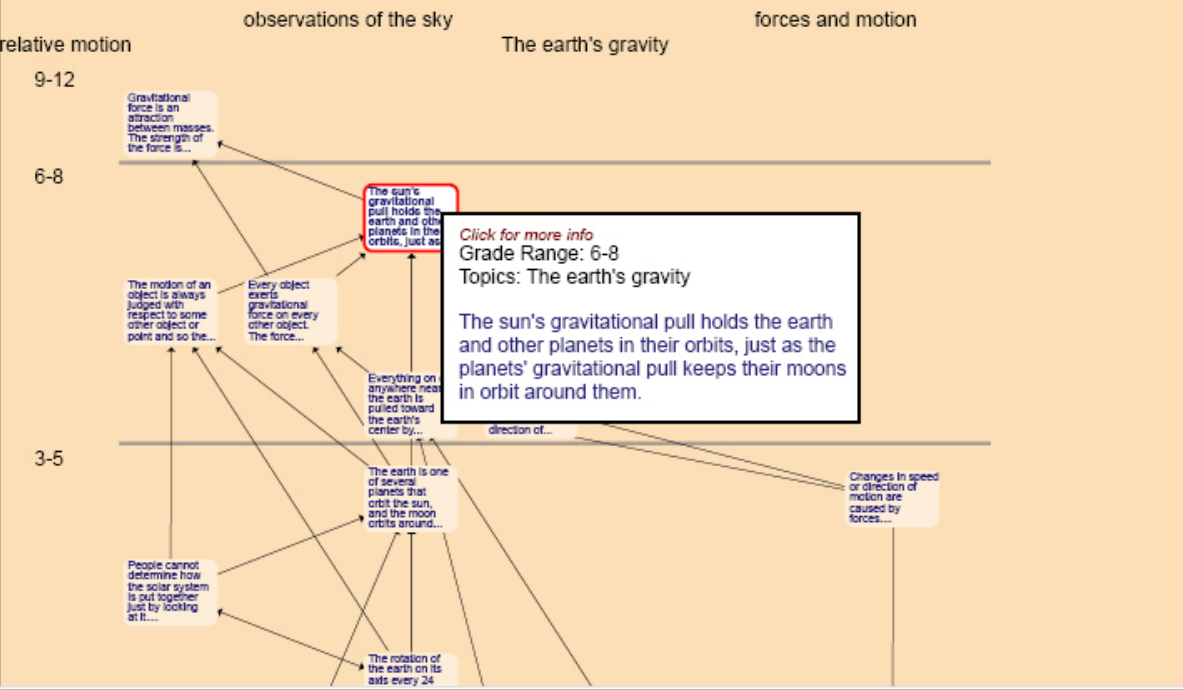
- Multiple, flexible ways of adding value
- Many frameworks
- Major standards
- Content alignment
- Rich annotations


DLESE
Educational Resources
For Educators
News & Opportunities
People & Groups
For Developers
About DLESE
Home
Register
New to DLESE?
Find a Resource
down the drain
Educational resources
Grade Level
Resource Type
Collections
Standards
Clear selections
Your selections:
Educational resources > Find a resource
Results 1 - 10 of 121 for 'down the drain'
= DLESE Reviewed Collection
Down the Drain: How Much Water Do You Use?
http://www.k12science.org/curriculum/drainproj/
This Internet-based collaborative project will allow students to share information about water usage with
and the world. Based on data collected by their household members and their classmates, students will
used by one person in a day. They will compare this to the average amount of water used per person per
Grade level: Intermediate (3-5), Middle (6-8), High (9-12)
Resource Type: Project, In-situ dataset
Subject: Environmental science, Human geography, Hydrology
CHOOSING & USING this resource...
Educational standards associated with this resource:
National Science Education Standards (NSES): Read
Teaching Tips and Comments
Read
Reviews
General reviews: Read
Meeting special needs: Read
Summaries: Read
Scores: Read
Related resources and collections
This resource is referenced by:
Center for Improved Engineering and Science Education (CIESE) - h
This resource is included in the following collections:
Digital Water Ed Library (DWEL) Browse collection
DLESE Reviewed Collection (DRC) Browse collection
Community Annotated Collection Browse collection
DLESE Community Collection (DCC) Browse collection
COMMUNITY REVIEW SYSTEM
Read Reviews and Comments
Annotation: Comments and Teaching Tips
Title: Down the Drain
ID: DLESE-000-000-001-635
Number of Comments and Teaching Tips: 5
From a contributor on 2003-05-01 who identified as a(n) Teacher:Middle_school, teaching a course titled "Science":
I really liked the materials section of the resource. All I had to do was print the forms for my students, instead of creating them myself. I also liked the hands on/participant observation style of the resource.
From a contributor on 2002-11-21 who identified as a(n) Teacher:Primary_elementary, teaching a course titled "Down the Drain":
More on line games and contacts would have helped students to get in touch with students from all over the world
From a contributor on 2002-04-25 who identified as a(n) Teacher:
The only problem we had was that we had to reformat the spreadsheets that the students took home to gather data so that they would print on one page instead of two. This may have just been caused by a difference in computer platforms.
Educational resources > Browse resources & collections
Digital Water Ed Library (DWEL)
Total resources: 411
SUBJECT | GRADE LEVEL | RESOURCE TYPE | STANDARDS
Agricultural science 21
Atmospheric science 85
Biology 44
Chemistry 15
Climatology 37
Cryology 46
Ecology 76
Educational theory and practice 2
Environmental science 174
Geographical Sciences
Human geography 30
Physical geography 21
Geological Sciences
Geochemistry 7
Geologic time 4
Geology 22
Geophysics 5
Mineralogy or petrology 1
Digital Water Ed Library (DWEL)
DWEL is a thematic collection focusing on the science, economics and policy issues of water. Resources in the collection are selected and rigorously reviewed by a diverse group of K-12 and informal science educators with an emphasis on high quality, exemplary digital resources that facilitate learning about all aspects of water in the Earth system in a wide range of learning environments. Many resources in the collection are in alignment with identified core water concepts in national and state science and geography education standards. The collection favors resources that are well-documented, easy to use, bug-free, motivational for learners, pedagogically effective, scientifically accurate, and which foster mastery of important scientific and mathematical understandings and technology skills.
Collection is intended for: Primary (K-2), Intermediate (3-5), Middle (6-8), High (9-12), Informal, General public
Try searching on these terms (type in keyword box):
Atmospheric science, Biological oceanography, Chemical oceanography, Climatology, Cryology, Ecology, Educational theory and practice, Environmental science, Hydrology, Natural hazards, Physical geography, Physical

Concept Maps: Connecting concepts, standards and DLESE educational resources

Changes in Earth's surface | Plate tectonics | Evidence & reasoning in inquiry | Scientific investigations | Solar system
States of matter | Gravity | Flow of energy in ecosystems | Flow of matter in ecosystems | Weather & climate | All Maps

RESET MAP | ZOOM



About the Concept | Show All Resources | Resources for Classroom Use | Visuals and Videos

Results 1 - 5 out of 20 Next >>

The Solar System
http://www.windows.ucar.edu/to ...

This section of the Windows to the Universe web site provides information and images about the solar system including detailed information about formation, ...

Grade range: General public, High (9-12), Informal, Intermediate (3-5), Middle (6-8), Primary (K-2), College (13-14)
Resource type: Ref. material, Imagery - remotely sensed, Illustration - scientific
Subject: Physics, Space science

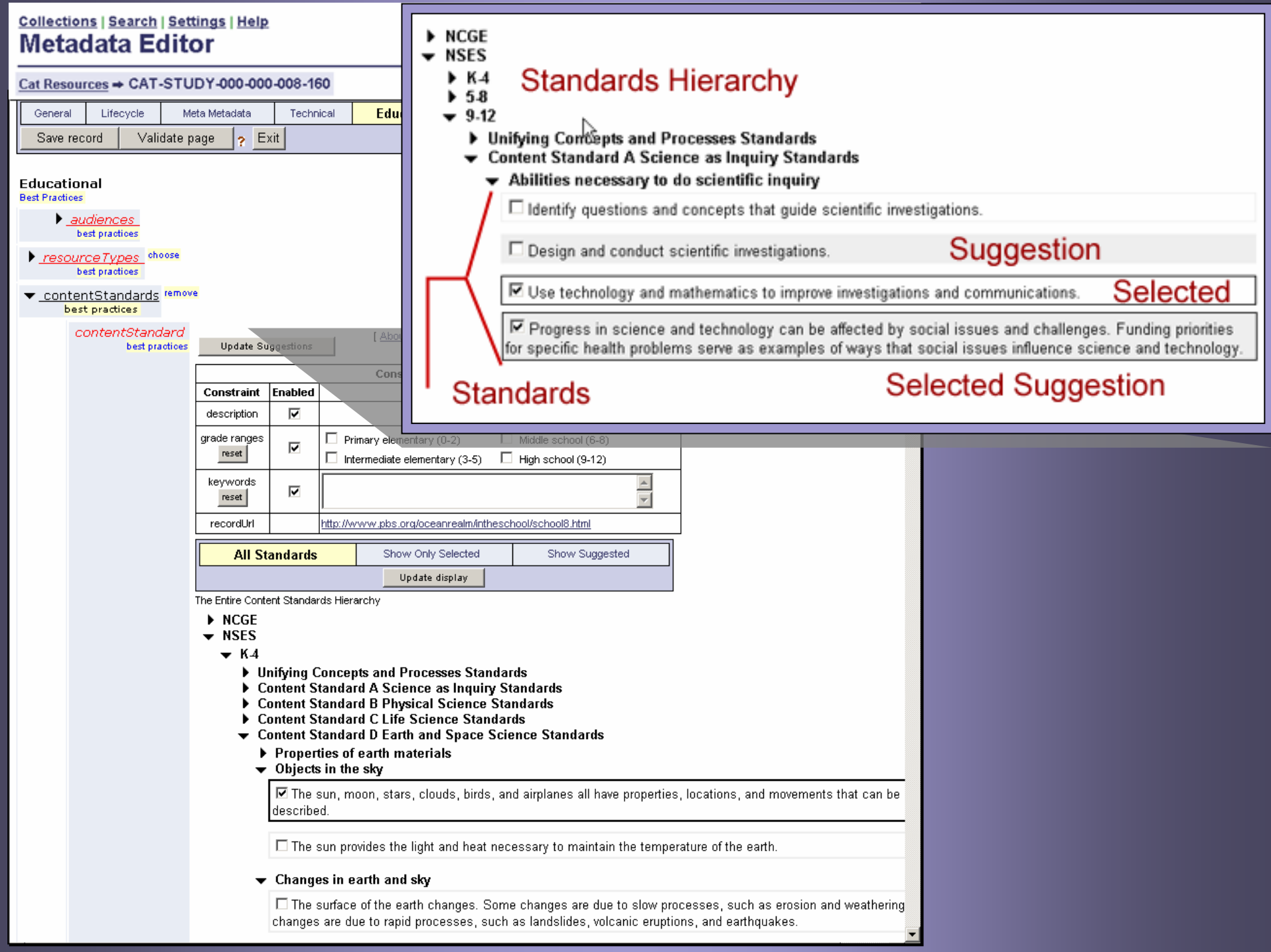
Technical Requirements..
See Full DLESE Description

Ask-A-Scientist
http://www.windows.ucar.edu/ki ...

Ask-A-Scientist is a Windows to the Universe feature that provides answers to users' submitted science questions. Users can check out the most recent ...

Grade range: General public, High (9-12), Informal, Intermediate (3-5), Middle (6-8), Primary (K-2), College (13-14)
Resource type: Ask an expert
Subject: Atmospheric

Technical Requirements..
See Full DLESE Description


Collections | Search | Settings | Help
Metadata Editor
Cat Resources ➡ CAT-STUDY-000-000-008-160
General
Lifecycle
Meta Metadata
Technical
Save record
Validate page
Exit
Educational
Best Practices
audiences
best practices
resourceTypes
choose
best practices
contentStandards
remove
best practices
contentStandard
best practices
Update Suggestions
Constraint
Enabled
description
grade ranges
reset
Primary elementary (0-2)
Middle school (6-8)
Intermediate elementary (3-5)
High school (9-12)
keywords
reset
recordUrl
http://www.pbs.org/oceanrealm/intheschool/school8.html
All Standards
Show Only Selected
Show Suggested
Update display
The Entire Content Standards Hierarchy
NCGE
NSES
K-4
Unifying Concepts and Processes Standards
Content Standard A Science as Inquiry Standards
Content Standard B Physical Science Standards
Content Standard C Life Science Standards
Content Standard D Earth and Space Science Standards
Properties of earth materials
Objects in the sky
The sun, moon, stars, clouds, birds, and airplanes all have properties, locations, and movements that can be described.
The sun provides the light and heat necessary to maintain the temperature of the earth.
Changes in earth and sky
The surface of the earth changes. Some changes are due to slow processes, such as erosion and weathering changes are due to rapid processes, such as landslides, volcanic eruptions, and earthquakes.
NCGE
NSES
K-4
Standards Hierarchy
9-12
Unifying Concepts and Processes Standards
Content Standard A Science as Inquiry Standards
Abilities necessary to do scientific inquiry
Identify questions and concepts that guide scientific investigations.
Design and conduct scientific investigations.
Suggestion
Use technology and mathematics to improve investigations and communications.
Selected
Progress in science and technology can be affected by social issues and challenges. Funding priorities for specific health problems serve as examples of ways that social issues influence science and technology.
Standards
Selected Suggestion

Discussion

- What are the annotations, comments, reviews, etc that you are already supporting, or plan to support, to enrich your resources and collections?
- Are you associating standards with resources? What standards and at what level? How are you making assignments?
- How are these annotation and standards information being exposed to your users?
- What sorts of contextualization services are you currently offering or considering offering?