

# Federal Education Digital Resources Library



**An ENC Digital Library Collection**

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**Grant Number:** DUE-0226228

**Timeline:** Oct. 1, 2002 – Sept. 30, 2004





# Scope of Collection

- *Outstanding* K-12 math and science digital resources
- Described at learning object level, e.g. individual lesson plans, applets, or video clips
- Featuring learning activities and professional development materials produced with NSF or U.S. Department of Education funds





# Product Creation

**1. Content Specialists** select high-quality resources

- ✧ Not yet part of the NSDL at the learning object level
- ✧ Fit collection scope and selection criteria





# Product Creation


## 2. **Content Specialists & Bibliographic Catalogers** build catalog records

- ✧ Using customized IMS/IEEE Learning Object Metadata (LOM) schema
- ✧ Examples of fields: Description, Grade Level, Interactivity Level, and Learning Resource Type

## 3. **Editors** review Description metadata



# Web-Based Cataloging Tool: View 1

	<b>FEDRL INTERNAL</b>
<a href="#">[Resource List]</a> <a href="#">[Claim List]</a> <a href="#">[Search]</a> <a href="#">[Import from ENC]</a> <a href="#">[Live]</a> <a href="#">[Rejected]</a> <a href="#">[Reports]</a> <a href="#">[Workflow]</a>	<h2>Workflow Links</h2> <p>You are currently listed as:</p> <ul style="list-style-type: none"><li>• <b>Content Specialist</b> - you have permission to add content metadata to suggested resources.</li><li>• <b>Cataloger</b> - you may add catalog information to both suggested and submitted resources.</li><li>• <b>Editor</b> - you have permission to edit resource metadata and make resources live.</li></ul> <p>The pages you have access to are:</p> <ul style="list-style-type: none"><li>• <a href="#">My Resources</a> - Resources that I am working on; no one else can modify them.</li><li>• <a href="#">Unclaimed 'Suggested' resources</a> - Resources that have been Suggested and need metadata added.</li><li>• <a href="#">Unclaimed 'Need cataloged' resources</a> - Resources that need to be cataloged.</li><li>• <a href="#">Unclaimed 'Need edited' resources</a> - Resources that need edited.</li></ul>

# Web-Based Cataloging Tool: View 2



FEDRL INTERNAL

General

Lifecycle

Technical

Edit  
Educational

Rights

Relation

Classification

Upload

Instructions

Best  
Practices

## Educational - FEDRL #: 8725

Interactivity Type: Expositive

Interactivity Level: Low

Difficulty Level: Easy

Learning Resource Type: Course Materials:[Simulations and Demonstrations]

End User Role: Learner

Learning Context: Middle school,High school

Grade Level: 8,9,10,11,12

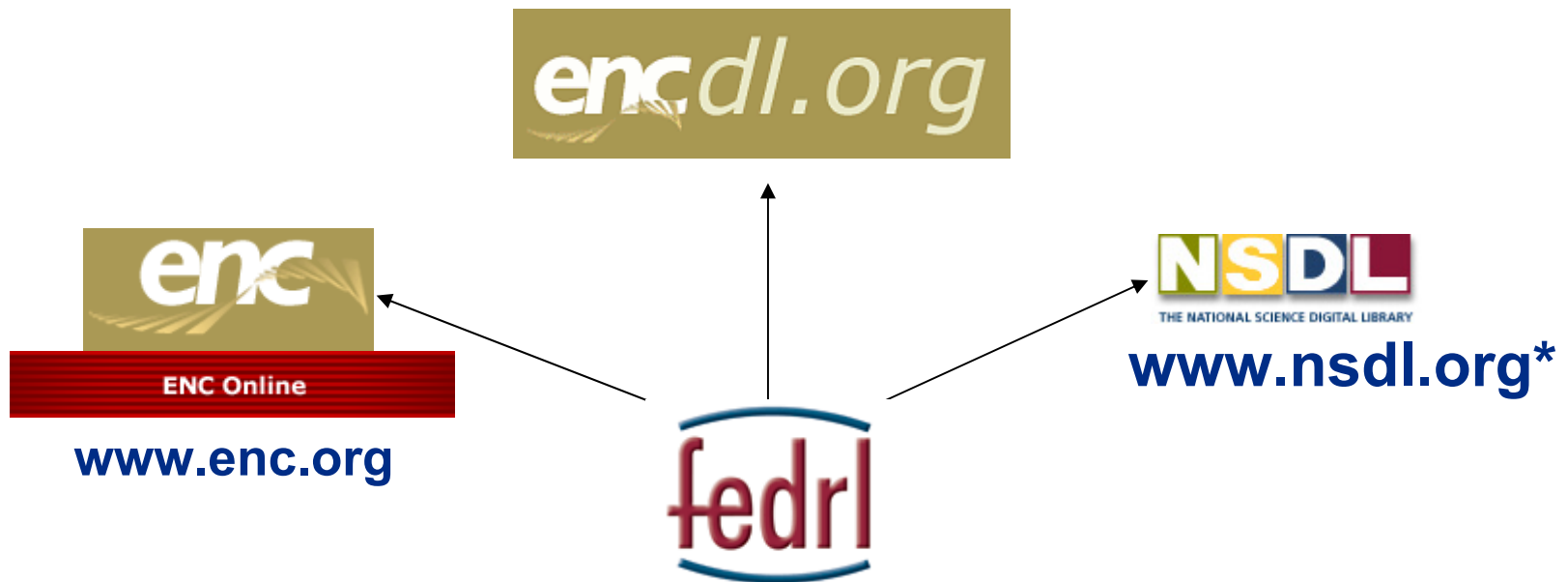
Typical Learning Time: PT10M

**Description:** Teachers could incorporate this resource into a unit on weathering and erosion. It could help students visualize what they have read or discussed about river erosion. Although this animation was designed to accompany a specific Earth science textbook, it is not necessary to have that text to use the resource.

Language of user: English(en-US)

# Product Display

*Find our catalog records on these sites:*



\*We participate in the Open Archives Initiative (OAI) and provide all the harvestable OAI fields of metadata.

# Sample Catalog Record: Page 1



## Observe river erosion creating waterfalls and chasms

<b>URL:</b>	<a href="http://earthsci.terc.edu/content/visualizations/es1305/es1305page01.cfm?chapter_no=visualization">http://earthsci.terc.edu/content/visualizations/es1305/es1305page01.cfm?chapter_no=visualization</a>
<b>Date:</b>	2003
<b>Abstract:</b>	In this resource about river erosion, students are presented with an animation and accompanying text. The resource explains and reveals how, over time, moving water can erode the rock in a river's bed and banks. The opening scenario is that of a small waterfall with a plunge pool at the bottom of the fall. Eventually, the action of the water as it churns gravel and sand about at the foot of the fall causes the plunge pool to grow, the rock above it to collapse, and the waterfall to extend. Movie controls allow students to pause or replay the animation or to step through it one frame at a time.
<b>Grade Level:</b>	8-12
<b>Learning Context:</b>	Middle school High school
<b>Intended End User Role:</b>	Learner
<b>Ideas for Use:</b>	Teachers could incorporate this resource into a unit on weathering and erosion. It could help students visualize what they have read or discussed about river erosion. Although this animation was designed to accompany a specific Earth science textbook, it is not necessary to have that text to use the resource.
<b>Resource Type:</b>	Simulations and demonstrations
<b>Subjects:</b>	Science / Earth science / Erosion, Waterfalls
<b>Format:</b>	Text/HTML Video/Flash
<b>Other Platform Requirements:</b>	Requires Macromedia Flash Player.



# Sample Catalog Record: Page 2



## Observe river erosion creating waterfalls and chasms

<b>Contributors:</b>	TERC. Center for Earth and Space Science Education (Author); TERC (Publisher); National Science Foundation (NSF) (Initiator); McDougal Littell (Content provider)
<b>Language:</b>	English
<b>Interactivity Level:</b>	Low
<b>Difficulty Level:</b>	Easy
<b>Typical Learning Time:</b>	10 Minutes
<b>Cost:</b>	No
<b>Copyright:</b>	See site for guidelines governing the use, restrictions and reproduction of these materials.
<b>FEDRL#:</b>	8725
<b>Related Resources:</b>	This resource is part of <a href="#">FEDRL # 8584</a> , "Exploring Earth : explore the world of Earth science"

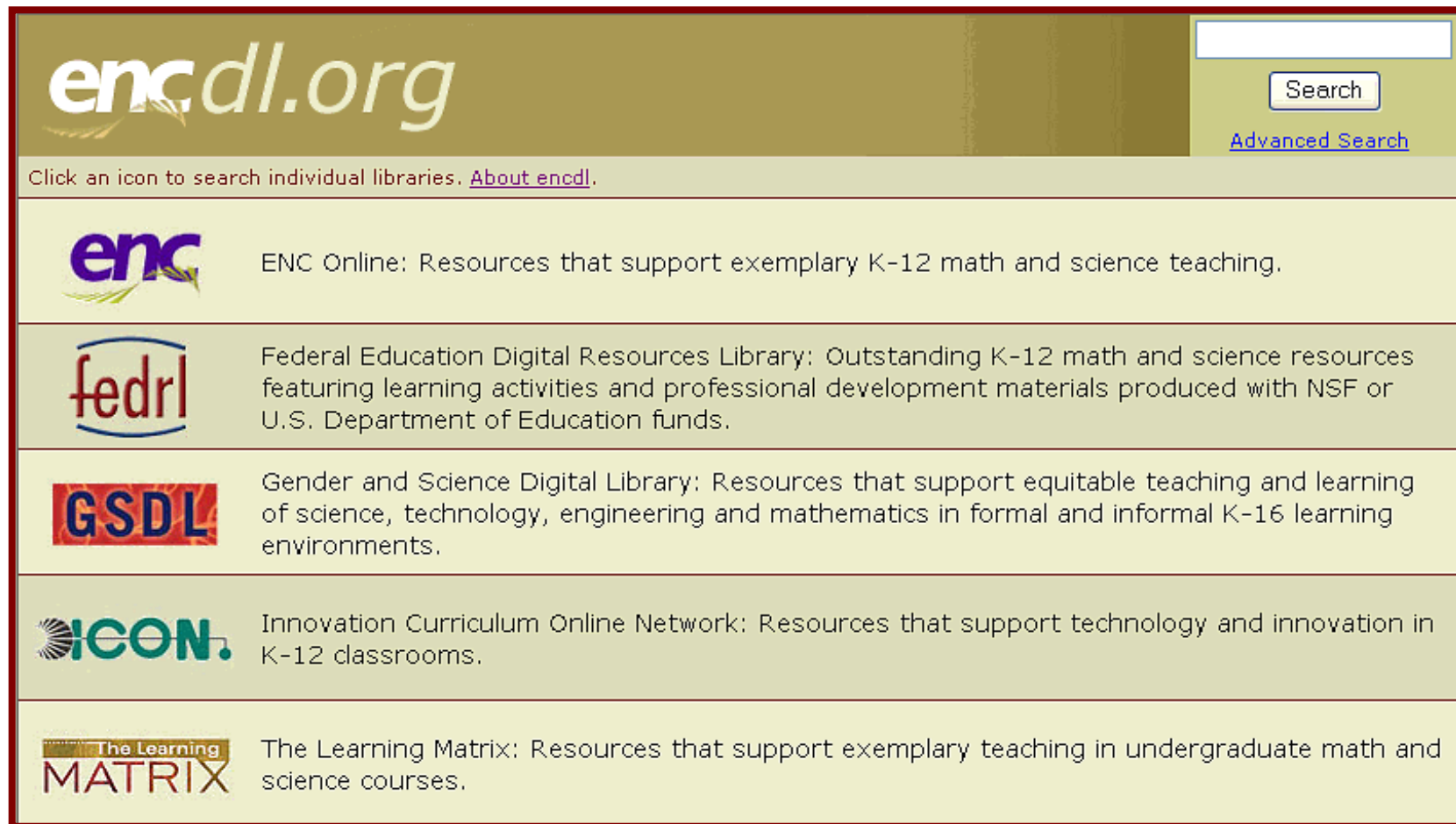
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<b>Record Created:</b>	July 15, 2003
<b>Last Modified:</b>	October 27, 2003

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All information in this catalog record was verified and accurate when it was first made available to the public. ENC updates catalog records when resources are featured in special projects or when we learn that the information in the record is out of date. Copyright ENC, 1995-2003.

# Portal to ENC's collections



The screenshot shows the ENC DL portal website. At the top left is the logo **enc.dl.org**. To the right is a search bar with a "Search" button and a link to "Advanced Search". Below the search bar is a navigation bar with the text "Click an icon to search individual libraries. [About encdl.](#)". The main content area is a list of digital libraries, each with a logo and a description:

- enc**: ENC Online: Resources that support exemplary K-12 math and science teaching.
- fedrl**: Federal Education Digital Resources Library: Outstanding K-12 math and science resources featuring learning activities and professional development materials produced with NSF or U.S. Department of Education funds.
- GSDL**: Gender and Science Digital Library: Resources that support equitable teaching and learning of science, technology, engineering and mathematics in formal and informal K-16 learning environments.
- ICON.**: Innovation Curriculum Online Network: Resources that support technology and innovation in K-12 classrooms.
- The Learning MATRIX**: The Learning Matrix: Resources that support exemplary teaching in undergraduate math and science courses.



# Benefits to NSDL

- Participation in the Open Archives Initiative (OAI)
  - ✧ Contributing a collection of high-quality federally supported digital resources to the NSDL metadata repository
- Development and refinement of cataloging tool
  - ✧ Tool is available for others to use





# Recent Publications

- Lightle, K. S., “Using Metadata Standards to Support Interoperability,” in C. M. Gynn & S. R. Acker (eds.), *Learning Objects: Contexts and Connections*, The Ohio State University, Columbus, 2003, pp. 43-48.  
[http://morty.uts.ohio-state.edu/learning\\_objects/documents/TELR-LO7.pdf](http://morty.uts.ohio-state.edu/learning_objects/documents/TELR-LO7.pdf)
- ———, and J. S. Ridgway, “Generation of XML Records across Multiple Metadata Standards,” *D-Lib Magazine*, vol. 9, no. 9, September 2003.  
<http://www.dlib.org/dlib/september03/lightle/09lightle.html>
- ———, J. S. Ridgway, and L. Simutis, “Building a K–12 Digital Library: Cataloging to Facilitate Resource Discovery,” in M. A. Mardis (ed.), *Developing Digital Libraries for K-12 Education*, ERIC Clearinghouse on Information & Technology, Syracuse, NY, 2003, pp. 29-44.





# Project Staff

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