The SMETE.ORG Alliance

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Outline

• The National SMETE Digital Library Program
• SMETE.ORG Vision
  – Commitment and Philosophy
• SMETE.ORG Alliance
• Where does SMETE.ORG fit in the NSDL?
• Technical Development
  – Interoperability and Federated Search
• Support for New Collections and Services
• Brief Demo
SMETE.ORG Vision

A Digital Learning Community

SMETE.ORG, An Alliance of over 20 partners

- Collections of science, mathematics, engineering and technology learning resources
- Networked distribution of pedagogical material providing seamless access through a tightly coupled federation of educational digital libraries
- Promotes education reform through participatory communities of learners
Commitment

• SMETE.ORG Alliance Partners are committed to providing a service…
  – that supports learning
  – across disciplines in science, mathematics, engineering and technology
  – in support of education reform and cross-disciplinary learning
  – from K–12 to higher education to professional development and lifelong learning
  – that is standards-based & supports the NSDL Program
Development Philosophy

• The difference is *learning*, not just bibliographic information retrieval
  – Teaching and learning require something more
• Guided by *user needs* and philosophy of education that is constructivist
• Link content to community and services
• Build integrative tools and incorporate “best of breed” tools from partners
SMETE.ORG Alliance

• Developing the Organization…
  – Evolving over time
  – Balancing the diversity, history, needs and strengths of each organization
  – Developing partnerships and affiliations to strengthen the whole

• …partners identify with SMETE.ORG
<table>
<thead>
<tr>
<th>Alliance Partners</th>
<th>Industry</th>
<th>Collaborators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coalition for Networked Information (<a href="http://www.cni.org">www.cni.org</a>)</td>
<td>Project Kaleidoscope (<a href="http://www.pkal.org">www.pkal.org</a>)</td>
<td>Cornell University (<a href="http://www.siteforscience.org">www.siteforscience.org</a>)</td>
</tr>
<tr>
<td>Eisenhower National Clearinghouse for Mathematics and Science Education (<a href="http://www.enc.org">www.enc.org</a>)</td>
<td>University of California Teaching and Learning with Technology Center (<a href="http://www.ucop.edu/acadinit/tltc">www.ucop.edu/acadinit/tltc</a>)</td>
<td>TeacherLib/MERIT Network and Michigan Teacher Network (<a href="http://www.merit.edu">www.merit.edu</a>)</td>
</tr>
<tr>
<td>Interactive University (iu.berkeley.edu)</td>
<td>University of Maryland Baltimore County (<a href="http://www.umbc.edu/engineering/me/wood.html">www.umbc.edu/engineering/me/wood.html</a>)</td>
<td>University of Missouri Columbia (cecssrv1.cecs.missouri.edu/NSDLProject)</td>
</tr>
<tr>
<td>Mathematics Association of America (<a href="http://www.mathdl.org">www.mathdl.org</a> and <a href="http://www.maa.org">www.maa.org</a>)</td>
<td>Utah State University (ia.usu.edu)</td>
<td></td>
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<tr>
<td>Math Forum (<a href="http://www.mathforum.com">www.mathforum.com</a>)</td>
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Strengths of Partners

• Partners with existing collections each have a decade of experience providing digital SMETE resources to their target audiences and disciplines
  – ENC, NEEDS, Math Forum, BioQUEST

• Most partners each have more than ten years of experience as organizations promoting SMETE reform
  – AAAS, Project Kaleidoscope, NACME, Mathematical Association of America, SRI International
Strengths of Partners (cont.)

• Collections and service providers range from well established collections to incipient collections

• Organizations serve full spectrum of audiences
  – K–12, pre-College, community colleges, liberal arts colleges and universities, public and private research universities, and professional societies
  – Extended affiliations include professional development organizations
NSDL Core Integration* 2001-2003

• General Areas of Responsibility for 2001-2003

DLESE

Management & Coordination

Cornell-Site for Science

“Loose Integration”

Community and Education Evaluation
“Tight Federation”

SMETE.ORG Alliance

*Developed at NSDL Coordinating Committee Meeting, Santa Barbara, CA, January 2001
NSDL Core Integration Status

• Things we know…
  – $5M over two years is available from NSF
  – Proposal due June 6, 2001
  – Deployment of NSDL by Fall 2002

• Things we believe…
  – Next proposal will be “collaborative”
The SMETE.ORG Alliance…

• Believes the NSDL should…
  – Cover *science, mathematics, engineering and technology education* not just “Science”
    • And we should emphasize the interdisciplinary and interconnectedness of learning materials
  – Focus on *teaching and learning* not only research and “primary source materials”
  – Focus on the *social* aspects as much, if not more than the technical aspects
  – Be *tightly federated/integrated* to allow users the best possible experience
Making it All Work

• What do we mean by interoperability?
  – We want to provide “seamless access to collections and services”
    • Existing and new collections
    • Existing and new services
  – We recognize there are different types of agreements necessary to provide “seamless access”
    • Social
    • Technical
Social Aspects of Interoperability

• Agree to interoperate
  – Shared principles
  – Shared understanding of the issues

• Build an identity

• Meet to develop common language and technical protocols
Technical Aspects of Interoperability

• Agree to common methods of representing information

• Agree to common methods for transmitting information
• Agree to common methods of representing information
  – Common metadata to help organize and describe collections
  – Common thesauri/controlled vocabularies to describe resources in consistent manner across collections
• Agree to common methods for transmitting information
  – Protocols/specifications/API’s for shared access to contents of collections and services
Key Features of SMETE.ORG

• **Search for learning resources**
  – Three mechanisms, find, research and browse, aimed at levels of knowledge of catalog metadata
  – Locally cataloged collections
  – Partner collections through federated search mechanism
  – Books and journal articles thru Z39.50 gateway (also OAI Gateway)
  – Receive recommendations to learning resources through collaborative filtering system

• **Form a community**
  – Find persons with similar educational goals through people recommender service
  – Participate in online workshops and focus groups
  – Form ad-hoc communities organized around learning resources and user-initiated discussion topics
  – Review and comment on use of learning resources
SMETE.ORG Systems Development

• SMETE.ORG
  – Based upon NEEDS platform
  – Developing core system based upon IEEE/IMS Learning Object Metadata Standards

• Expanding Services and Features
  – Customized “My Workspace” features
    • People and resource recommenders
    • Save queries and resources
  – Discussion systems
  – User profiles

• Expanding Core Collection

Current Technical Base:
PHP and MS SQL Server
Future, Summer 2001:
Oracle8i, Java Servlets

Core Collection*

<table>
<thead>
<tr>
<th>Subject</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering</td>
<td>58%</td>
</tr>
<tr>
<td>Chemistry</td>
<td>21%</td>
</tr>
<tr>
<td>Physics</td>
<td>14%</td>
</tr>
<tr>
<td>Math</td>
<td>5%</td>
</tr>
<tr>
<td>Other</td>
<td>2%</td>
</tr>
</tbody>
</table>

*Significant additional Math and Science content is available from SMETE.ORG Alliance partners

Physics, April 19, 2001
Other SMETE.ORG Activities

• On-going needs assessment and other evaluation projects
• Working with SMETE.ORG Alliance members to support interoperability
• Looking for connections between projects and other possible participants

• Working with NSDL Working Groups
  – Developing recommendations that cut across all NSDL Projects
• **Entry Vocabulary**
  – Recommendation of context-appropriate search terms

• **Knowledge Management**
  – Integrated subject taxonomies based on existing community-developed subject taxonomies
Portal at www.smete.org

Welcome to the SMETE Digital Library.
The most comprehensive collection of science, math, engineering and technology education content and services.

News
The Mathematical Association of America, a SMETE CRG Alliance Partner, recently launched the premier issue of the Journal of Online Mathematics and its Applications (JOMA). JOMA takes advantage of the Web to make modern tools, curricula, and active learning environments more accessible to students and teachers everywhere. Visit JOMA and find out more about the MathDL project, too.

Community
The National SMETE Digital Library Community Center formed to gather and share information from all concerning the present and future of SMETE digital libraries, tools and services, lessons learned, standards used, user studies and publications. Come share your ideas in our forum.
Demonstration: Find a Resource
Demonstration: Search Results

Results 1-2 of 2 total results, sorted by Score

Search for books and scholarly articles on Frog
Search for supplemental Web sites and information resources on frogs through our Open Archives partner Site for Science

Frog Island, 1998
By Parasol, Inc. at SUMMIT - Stanford University Medical Media and Information Technologies
Other Contributors: Forrest Raff, 1996-03-12
Record Last Updated: 1996-03-12
Learning Object Size: N/A

Keywords: frog
Match to Search Terms: 10.4%
Possible Uses: Virtual Environment for Age Range/Grade Level N/A

The interactive frog dissection: an on-line tutorial, 2001
By Virginia Mitchell at University of Virginia
Other Contributors: Richard Brack, Jean Flee, Marie Kinloch, Bill Looney
Content ID: 2001.04.0190001472
Record Last Updated: 2001-04-34
Learning Object Size: N/A

Keywords: frog
Match to Search Terms: 10.3%
Possible Uses: N/A for Age Range/Grade Level N/A

Find more resources on frogs from the NLM National Clearinghouse.

Go To Top
Demonstration: Federated Search

The following catalog records are courtesy of Eisenhower National Clearinghouse. Please note that you will be taken to their Web site in a new window should you choose to view one of the following learning objects.

1. **Westward frog**  
   By herpetologists, Carlos Davidson, Chris Gregory, Lara Hansen, Amy Lind, Melissa Pitkin, Brad Shaffer; web design, Chris Gregory  
   Description: Resource materials, Internet resource.

2. **Poison dart frogs**  
   By Jennifer Qwing Dewey  
   Description: Literature, Print material.

3. **Larson’s Leapfrog math, Intermediate 1.**  
   By CD-ROM, Meridian Creative Group — teacher’s resource guide and extra practice book, Linda Ziegler  
   Description: Games, Lesson plans and activities, Resource materials, Teacher guides, Kit.

4. **Larson’s Leapfrog math, Intermediate 2.**  
   By CD-ROM, Meridian Creative Group — teacher’s resource guide and extra practice book, Linda Ziegler  
   Description: Games, Lesson plans and activities, Resource materials, Teacher guides, Kit.

5. **Larson’s Leapfrog math, Intermediate 3.**  
   By CD-ROM, Meridian Creative Group — teacher’s resource guide and extra practice book, Linda Ziegler  
   Description: Games, Lesson plans and activities, Resource materials, Teacher guides, Kit.

6. **Larson’s Leapfrog math, Intermediate 4.**
Demonstration: Z39.50 Link

You searched for Keywords: frog

California Digital Library (INSPEC)

Your search found 385 records. The first 10 are being shown.

Title: The simulation of electron diffusion in solids at finite temperature.
Author(s): Mischev, L.A.
Author(s): Hickey, E.J.
Author(s): Morgan, G.J.
URL: http://stacks.iop.org/0365-0326/9/07
URL: http://stacks.iop.org/0365-0326/latest

Title: Effect of third-order dispersion on the phases of soliton-like Cr:sup 4+:YAG-laser pulses characterized by the second-harmonic generation frequency-resolved optical gating method.
Author(s): Peter, H.

Title: A preferred amplitude of calcium sparks in skeletal muscle.
Author(s): Shirokova, N.
Author(s): Kirsch, W.G.
Author(s): Pizarro, G.
Author(s): Stem, M.D.
Author(s): Cheng, H.
Author(s): Gonzalez, A.
URL: http://www.bu.edu/pms/5/2001/10/195
Demonstration: Learning Resource
Support for Collections & Services

- Identify potential new collections and services
  - Serve as “matchmaker” to help link with partners
- Consult with collections and services as they develop
  - Technical issues
    - Developing services
    - Using Standards, specifications and protocols
  - Development of community support
    - And integration with larger SMETE Community
Contacting SMETE.ORG

www.smete.org

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