LIVE INTERACTIVE LEARNING @ YOUR DESKTOP

NSTA Web Seminar:
The NSTA Learning Center — Focus on Education Leaders

Wednesday, November 12, 2008
The NSTA’s Mission:
To promote excellence and innovation in Science Teaching and Learning for All

The Issues:
– Science Content
– Scale
– Sustainability
✓ Science ePD
✓ Scalable
✓ Sustainable
✓ Individualized
Scalable, Sustainable, and Customized Professional Development

The NSTA Learning Center

Search Engine
Teacher PD Indexer
Online PD Catalog

Professional Development Resources and Opportunities

University Online Affiliates
Regional/State Face-to-Face PD
NSTA Journal Articles
NSTA SciGuides

NSTA SciPacks and Science Objects
NSTA Symposia & PD Institutes
NSTA e-Books and online Chapters

NSTA Web Seminars
NSTA Online Short Courses

My PD Plan & Portfolio
My Calendar
My Library
My Notepad
My Transcript
School Report
NSTA Certification
Nov. 2008 Collection: 3,000+ PD Resources and Opportunities Available

SciGuides [27]
Science Objects [56]
SciPacks [14]
Archived Web Seminars [91]

Web Seminars [16-20/yr]
Short Courses [3-4/year]
University Affiliates

Journal Articles [2,178]
NSTA Press Books [230]
eBooks [23]
eChapters [453]

Symposia [10-13/year]
PD Institutes [10-13/year]
Regional/State PD

Have you accessed any of these resources? Use an emoticon to respond.
Navigating through…

The NSTA Learning Center

…is simple to do.
Find resources by:

- Subject
- Learning Resources & Opportunities
- All Free Resources
- Advanced Search
- Grade Level
- State Standards *(soon!)*
- Learning Preference

Now you try it!
Let’s Pause for Two Questions
Featured e-PD resources within the Learning Center

FREE NSTA Science Objects

SciPacks
BUILDING CONTENT KNOWLEDGE

SciGuides
Sites, Solutions, Success.

supported by

NSF
NASA
NOAA
FDA
S.D. Bechtel, Jr. Foundation
Hewlett Foundation
Agilent Technologies Foundation
GE Foundation
U.S. Department of Transportation
National Highway Traffic Safety Administration
Featured e-PD resources within the Learning Center

- Two hour **free** online learning experience in a particular topic
- Interactive **simulations** of phenomena in an engaging way
- Questions to promote **interaction** and learning via inquiry strategy
- Based on **science literacy** goals in science education standards
- Fifty-six (56) **Science Objects** are currently available
Let's sample an Interactive Simulation

Life Science: Coral Ecosystems
Do you think interactive simulations like the one you sampled can help *teachers* learn science concepts?

A. YES
B. NO
C. Not sure
Let’s Pause for Two Questions
Featured e-PD resources within the Learning Center

supported by

[Logos of various organizations and foundations]
• 10 Hour Online and On-Demand Learning Experience

• 3-5 Free Science Objects, plus
  – Individualized email support
  – Pedagogical Implications component
  – Opportunity for Certification by passing a Final Assessment
I like the idea of taking a **final assessment** in the SciPack to demonstrate my understanding and proficiency of a particular content area.

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>I need to learn more about it</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
Evaluation of Online, On-Demand, Science Professional Development Material Involving Two Different Implementation Models

Participant Feedback: Confidence in teaching subject matter:
- 7%: Very Confident *Before* completing F&M SciPack
- 60%: Very Confident *After* completing F&M SciPack
98%: Found SciPack content relevant
96%: Would recommend SciPack
98%: Found interactive simulations worthwhile

Pre/Post Assessment and Final Assessment Results
- Horizon Research Instrument:
  Positive *significant gains in learning* between pre/post test
- Final Assessment: 92% passed the final assessment

JSOT, Vol. 17, N. 1, Feb 2008
Let’s Pause for Two Questions
Featured e-PD resources within the Learning Center

supported by

![Logos of supported organizations]
Valuable classroom resources for science teachers interested in integrating the web into their teaching

Each SciGuide consists of:

- Approximately 100 standards-aligned web-accessible resources
- Customized lesson plans using selected web resources
- Teacher media vignettes describing and showcasing the lessons
- Samples of student work
- Interactives utilized in SciPack on same topic
Position and Motion

Think about driving a car. We know when the car is still, when it is traveling at a constant speed and when the speed is increasing or decreasing. We know when we are getting closer to the car in front that we have to reduce our speed. When that car in front is getting close very fast, we have to reduce our speed by a great amount very quickly. Can we explain this more accurately?

We rarely think about the motion of objects beyond noticing that they are still or in motion. But we have an intuitive sense of a wide range of motion and changes in motion. This SciGuide will develop a deeper understanding of motion and changes in motion and introduce descriptive language and equations for changes in motion.

Motion involves a change in position. It is important to be able to describe position accurately in relation to a reference point. When the object changes position, it is important to describe how it changes position and in what direction. This SciGuide will provide support in understanding different ways to describe position and different units used in science. How an object changes its position can be described by using speed or velocity. When the speed or velocity changes, those changes can be describe by the object’s acceleration. Definitions for position, speed, velocity and acceleration developed by physicists can be extremely helpful in understanding motion. Definitions, scientific units, equations, graphs of change in position and change in velocity, and simulations are all provided in these on-line resources to facilitate and understanding of
Do you think SciGuides that include lesson plans with students work samples, URLs, and interactive simulations can help students learn science concepts?

A. YES

B. NO

C. Not sure
Other e-PD resources within the Learning Center

• Journal Articles
• eBook Chapters
• Live Seminars & Archives
• Online Short Courses
Let’s Pause for Two Questions
e-PD System Tools

- My Learning Center 2.0
- My PD Indexer 2.0
- My Library Tool 2.0
- My PD Plan and Portfolio Tool 1.0
- My Calendar Tool 1.0
- State Standards Alignment of Resources 1.0
- State/District Accountability Admin tools 1.0
My Library Tool

• Create personalized collections of resources

• Create personalized notes for individualized resources

• Share your collections via email with colleagues
Welcome to your collection of professional development resources. Select from the links and tabs below to access your items, organize them into collections, and then share your collections with others.
Earth, Sun, and Moon: Earth's Seasons
Type: Science Object
Days Remaining: 341
Grade: Elementary School, Middle School
Summary: Overview:

This Science Object is the last of four Science Objects in the SciPack. It provides an understanding of why we have different seasons and why seasons vary from one location on Earth and another.

Earth, Sun, and Moon: Motion of the Moon
Type: Science Object
Days Remaining: 341
Grade: Elementary School, Middle School
Summary: Overview:

This Science Object is the third of four Science Objects in the SciPack. It provides an understanding of the moon's orbit around Earth and the phases of the moon as experienced from Earth's surface.

Gravity and Orbits
Type: SciPack
Days Remaining: 192
Grade: Elementary School, Middle School
Summary: The Gravity and Orbits SciPack explores concepts related to Earth's universal gravitation and how gravity affects the universe around us. The focus is on Standards and Benchmarks related to universal gravitation including variables that influence the...
Al Byers has 152 items in his "My Library" space. You have…

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2-4</td>
</tr>
<tr>
<td>At least 5</td>
<td>More than 5</td>
<td>This is a worthwhile tool that I need to try</td>
</tr>
</tbody>
</table>
PD Plan and Portfolio Tool

- Create personalized multiyear plan outlining your goals, evidences, and justifications for growth
- Upload files to demonstrate completion of goals with reflections
- Generate automatic PDF report with embedded URL links and images
Support Evidence

Portfolio Manager
- My Content Knowledge
  - (goal) - Earth Science Review
    - (evidence) - Earth's Changing Surface SciPack
  - Reflection
- My Content Pedagogy
- My Assessment/Evaluation Skills
- My Technology Skills
- My Leadership Skills
- My Management Skills
- Impact on Student Learning

Category: My Content Knowledge
Goal: Earth Science Review
Evidence: Earth's Changing Surface SciPack

My Tasks
- Upload File
- Add Note
- Edit Evidence
- Delete Evidence

Instructions
In this step, you can edit the information associated with the evidence you plan to use in your portfolio to communicate about your successful professional development experiences for the selected goal. You can upload files, create your own files (i.e., a note describing specific journals or books you have read), and edit the information about how a specific evidence file does, in fact, communicate your successful accomplishments.

About Upload File
About Add Note
## View Status

<table>
<thead>
<tr>
<th>Category</th>
<th>Goal</th>
<th>Action</th>
<th>Expected Date of Goal Completion</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>My Content Knowledge</td>
<td>Review/Improve Physical Science Understanding</td>
<td>Edit Reflection</td>
<td>6/30/2008</td>
<td>green</td>
</tr>
<tr>
<td>My Content Pedagogy</td>
<td>Increase Inquiry</td>
<td>Edit Reflection</td>
<td>11/28/2008</td>
<td>yellow</td>
</tr>
<tr>
<td>My Assessment/Evaluation Skills</td>
<td>Improving Formative and Summative Assessment Skill</td>
<td>Edit Reflection</td>
<td>6/15/2008</td>
<td>red</td>
</tr>
<tr>
<td>My Technology Skills</td>
<td>Increase Effective Use of Technology</td>
<td>Edit Reflection</td>
<td>6/15/2008</td>
<td>yellow</td>
</tr>
<tr>
<td>Impact on Student Learning</td>
<td>Earth Science</td>
<td>Edit Reflection</td>
<td>12/31/2008</td>
<td>green</td>
</tr>
</tbody>
</table>
Let’s Pause for Two Questions
Accountability System for States, Districts, and Schools

Texas Regional Collaborative for Excellence in Science and Mathematics Teaching Directors Admin Page

Welcome to your NSTA resource administrator page.

Data below is provided to assist you in tracking activity and progress of your program participants.

<table>
<thead>
<tr>
<th>Overview</th>
<th>Individual Users</th>
<th>SciPack Summary</th>
<th>Calendar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of Licenses Purchased:</th>
<th>Number of Licenses Used:</th>
<th>% Used:</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>55</td>
<td>110%</td>
</tr>
</tbody>
</table>

Total Products Added by Type

<table>
<thead>
<tr>
<th>Product Type</th>
<th>Number Added:</th>
</tr>
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<tbody>
<tr>
<td>SciPack</td>
<td>155</td>
</tr>
<tr>
<td>Science Object</td>
<td>101</td>
</tr>
<tr>
<td>Journal Article</td>
<td>51</td>
</tr>
</tbody>
</table>
Support Components for the Learning Center

- Auto System Check Wizard
  (detects and assists with necessary plug-ins)

- Orientation Support
  (how to navigate the Learning Center)

- Technical Support Help Desk
  (issues accessing content)

- Subject Matter Expert Wizard
  (intelligent SciPack coach via email)
Where We Are: Scaling Up Implementation

Over 25,000 Individual accounts with over 138,000 resources added to users “My Library”

- West Virginia Department of Education
- New Hampshire Department of Education
- Hawaii Department of Education
- Vermont Department of Education
- Nebraska Department of Education
- Cincinnati Public School, Cincinnati, OH
- Louisville County Public Schools, Louisville, KY
- Gwinnett and Forsyth County Public Schools, Atlanta, GA
- Lincoln County Public Schools, Lincoln, NE
- LASER Alliance, Mountain to Harbor Alliance, WA
- Oregon Science Teachers Association
- Florida Science Teachers Association
- Zero-G Flight Initiative
- Twin Harbors Science Consortium
- Duval County Public Schools, Jacksonville, FL
- Texas Education Service Center-20 TRC
- University of Texas, Tyler, TX
- Texas A&M University, Texarkana, TX
- Towson University, Towson, MD

Over 20 State/District Partnerships as of Nov. 2008
Math/Science Partnership and 21st Century Skills Initiative
Blended with Face-to-Face PD
Middle School and Special Education Teachers
Phase III roll-out in 2008 (~100 teachers/yr)
Marshall University awards graduate credit

Deployment: IHE Partnership for Graduate Credit
West Virginia Department of Education
Deployment: Accountability
New Hampshire Department of Education

- Math/Science Partnership
- All teachers required to use the PD Plan and Portfolio tool
- Provides documentation on building content knowledge
- Assists teachers meeting state requirements for certification (pilot)
Deployment: Leverage Statewide Systemic System
Texas Regional Collaboratives for Excellence in Science and Mathematics Teaching (http://thetrc.org)

- 36 TRC’s provide PD f2f to 900 of 1,037 school districts in Texas
- Located across universities throughout Texas
- Use Learning Center to provide 20 hours of 105 hrs/year requirement (900 teachers)
- At least one SciPack and PD Plan and Portfolio Tool
As an Administrator who is responsible for investing district or state funds in teachers PD...

Would you like to have the ability to track the progress your teachers are making?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>Not sure</th>
</tr>
</thead>
</table>

Would you like to know if the investment you made is actually making a difference?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>Not sure</th>
</tr>
</thead>
</table>
Accountability Tracking Reports

Track Resource Preferences and Usage

- What resources are added to libraries
- Track by resource and individual usage
SciPacks Admin Tracking Reports

Track SciPack Progress

- Frequency of Access
- Percentage of completion
- Final Assessment Results with Certificate
- Pre/Post Assessment Results
## SciPack Progress Report

**John Smith**  
9/21/2007

<table>
<thead>
<tr>
<th>Object</th>
<th>% Complete</th>
<th>Score</th>
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<tbody>
<tr>
<td>Force and Motion</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Force and Motion</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Position and Motion</td>
<td>100%</td>
<td>N/A</td>
</tr>
<tr>
<td>Newton's First Law</td>
<td>100%</td>
<td>N/A</td>
</tr>
<tr>
<td>Newton's Second Law</td>
<td>100%</td>
<td>N/A</td>
</tr>
<tr>
<td>Newton's Third Law</td>
<td>100%</td>
<td>N/A</td>
</tr>
<tr>
<td>Force and Motion Final Assessment</td>
<td>100%</td>
<td>83.30%</td>
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<tr>
<td>Glossary</td>
<td>100%</td>
<td>N/A</td>
</tr>
<tr>
<td>Pedagogical Implications</td>
<td>100%</td>
<td>N/A</td>
</tr>
<tr>
<td>Learning Outcomes</td>
<td>100%</td>
<td>N/A</td>
</tr>
<tr>
<td>Credits</td>
<td>100%</td>
<td>N/A</td>
</tr>
<tr>
<td>Gravity and Orbits</td>
<td>70%</td>
<td></td>
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<tr>
<td>Gravity and Orbits</td>
<td>70%</td>
<td></td>
</tr>
<tr>
<td>Universal Gravitation</td>
<td>100%</td>
<td>N/A</td>
</tr>
<tr>
<td>Gravitational Force</td>
<td>100%</td>
<td>N/A</td>
</tr>
<tr>
<td>Orbits</td>
<td>100%</td>
<td>N/A</td>
</tr>
<tr>
<td>Gravity and Orbits Final Assessment</td>
<td>100%</td>
<td>70.60%</td>
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<tr>
<td>Glossary</td>
<td>62%</td>
<td>N/A</td>
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<tr>
<td>Pedagogical Implications</td>
<td>0%</td>
<td>N/A</td>
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<tr>
<td>Learning Outcomes</td>
<td>0%</td>
<td>N/A</td>
</tr>
<tr>
<td>Credits</td>
<td>100%</td>
<td>N/A</td>
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</table>
## SciPack Access History

### John Smith

<table>
<thead>
<tr>
<th>Object</th>
<th>Access Date</th>
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<tbody>
<tr>
<td>Position and Motion</td>
<td>07/20/2007 9:35AM</td>
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<tr>
<td>Pedagogical Implications</td>
<td>07/20/2007 9:40AM</td>
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<td>Pedagogical Implications</td>
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<td>Gravitational Force</td>
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<td>Orbits</td>
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<td>Glossary</td>
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<td>07/20/2007 10:48AM</td>
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<td>Newton's First Law</td>
<td>07/22/2007 10:13PM</td>
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<td>Newton's First Law</td>
<td>07/29/2007 9:54PM</td>
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<tr>
<td>Newton's First Law</td>
<td>07/30/2007 4:53PM</td>
</tr>
<tr>
<td>Newton's Second Law</td>
<td>08/07/2007 6:49PM</td>
</tr>
</tbody>
</table>
Input critical dates for upcoming events and reminders

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**New Hampshire Admin Page**

Welcome to your NSTA resource administrator page.

Data below is provided to assist you in tracking activity and progress of your program participants.

---

**State, District and Organization Events and Reminders**

From this page you may insert dates and reminders that will be visible to all teachers with access to the NSTA Learning Center through your district, state, or organization subscription. When teachers log into the Learning Center these dates will appear both within their "My Calendar" tool and underneath the "Reminders and Opportunities" header on the lower right side of their "My Learning Center" page as the date approaches. It will be labeled with the color purple in the calendar.

<table>
<thead>
<tr>
<th>Title</th>
<th>Description</th>
<th>Dates</th>
<th>Visible</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Hampshire Event</td>
<td>Test</td>
<td>8/26/2008 (All Day)</td>
<td>Visible</td>
</tr>
</tbody>
</table>

---

Add New Event

View My Calendar
Teacher Calendar

Reminders

:: Reminders & Opportunities

:: OPPORTUNITIES

DON'T MISS
Web Seminar: The NSTA Learning Center: Free Classroom Resources and PD Tools – All in One Place
View Info

REGISTER
Web Seminar: Energy and the Polar Environment
View Info

REGISTER
Online Short Course: Force and Motion
View Info

:: MY CALENDAR

To add, update and delete your own events click here
Select which events to display on your calendar

Nov, 2008

Sun Mon Tue Wed Thu Fri Sat
26 27 28 29 30 31 1 2
3 4 5 6 7 8
9 10 11 12 13
14 15
16 17 18
19 20 21 22
23 24 25
26 27 28 29
30

:: District Inservi

:: Web Seminar

:: NSTA Conf

:: Inquiry
Let’s Pause for Two Questions

Thank you!
Thanks to our presenter, Al Byers, and to the NSTA Learning Center collaborators for sponsoring this program.
Welcome to Your Professional Development

The Learning Center is NSTA's e-professional development portal to help you address your classroom needs and busy schedule. You can gain access to more than 2,600 different resources that cater to your preference for learning. Over 700 hundred resources, such as journal articles, science objects and web seminars are available for free. A suite of practical tools such as My Library, My Transcript, and My Professional Development Plan and Portfolio tool help you organize, personalize, and document your growth over time.

Explore Learning Opportunities

**By Subject**
- Earth & Space Science
- Life Science
- Physical Science

**By Grade Level**
- Elementary
- Middle School
- High School
- College

**By State Standards**
Many resources now permit you to select your grade, standard document, and state to view the standards that align to the resource you've selected.

Do-It-Yourself Learning
Learn at your own pace online with these 1-2 or 6-10 hour interactive activities.

Books & Articles
- Books
- Book Chapters

Live Online Seminars & Classes
Learn online from certified instructors with your colleagues. 1-2 hour seminars, week and month long courses are available. Earn state and university credit.

In Person Experiences
Attend an NSTA workshop in person to learn hands-on techniques with other teachers. Earn state and university credit.

http://learningcenter.nsta.org
Join us at an upcoming NSTA Area Conference!

Portland
Nov. 20-22

Cincinnati
Dec. 4-6
• **NSDL: Beyond Penguins and Polar Bears: Energy and the Polar Environment**

  November 13, 2008

• **AAAS: Intro to the Atlas of Science Literacy**

  November 18, 2008

• **FDA: Teach Science Concepts and Inquiry with Food**

  December 2, 2008

http://learningcenter.nsta.org
National Science Teachers Association
Dr. Francis Q. Eberle, Executive Director
Zipporah Miller, Associate Executive Director
Conferences and Programs
Al Byers, Assistant Executive Director e-Learning

NSTA Web Seminars
Flavio Mendez, Senior Director
Jeff Layman, Technical Coordinator

NSTA Web Seminars
LIVE INTERACTIVE LEARNING @ YOUR DESKTOP