



# **NSTA Learning Center Update and Free PD Resources**

**Presented by: Flavio Mendez and Leisa Clark**

March 23, 2011

# Agenda

- What is the Learning Center?
- Learning Center Update
- Free PD Resources



<http://learningcenter.nsta.org>



# *Learning Center*

## Overview



# 2010 National Education Technology Plan

Through online learning systems, teachers may enhance their learning through **blending the best of onsite PD with online PD** that provides immediacy, convenience, self-direction, and collaboration with other colleagues and experts via professional learning communities.

For teachers to effectively facilitate using interactive resources, learning systems, and connectedness to online communities, **teachers need to experience it firsthand as part of their own learning and professional development.**

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[Discussion Forums](#)
[Education Administrator](#)

## Welcome to Your Professional Development

The Learning Center is NSTA's e-professional development (PD) portal to help you address your classroom needs and busy schedule. You can gain access to more than 6,000 different resources, of which [over 1,800 are free](#). A suite of practical tools such as *My Library*, *My PD Record*, and *My PD Plan and Portfolio* help you organize and document your PD growth. [Create your free account](#) and watch the [overview](#).



**NEW: Earn as you learn!** Collect points and badges as you aggregate, comment, and complete PD! Create collections with your own resources and share with others!



**NEW: Live Support!** Chat with Online Advisors while navigating your professional development. Simply log in or register to get started.

[Explore Learning Opportunities](#)

- [Advanced Search](#)

- [See all FREE Lesson Plans](#)
- [See all FREE Resources](#)

[Login](#)

E-mail:   
Password:

- [I'm an NSTA member but I don't have a password](#)
- [Register Now for Free](#)
- [Lost password?](#)

[RSS](#)
[SHARE](#)
[Facebook](#)
[Twitter](#)
[Email](#)

### Growing in the Right Direction!

Over 547,000 additions across teachers' personal libraries



**Start Your FREE Collection TODAY!**

[Most Popular Resources](#)

**A community with over 6,100 resources, and tools**



# The NSTA Learning Center

Search the Learning Center



Home

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Subjects

Learning Resources  
& Opportunities

Discussion  
Forums

Education  
Administrator

## My Learning Center

Welcome, Flavio [Admin](#) | [Log Out](#)

Welcome

My  
Library

My  
PD Indexer

My PD Plan  
and Portfolio

My PD Record  
and Certificates

My  
Calendar

My  
Notepad

New: Discussion  
Forums

Help  
Desk

## Welcome to Your Professional Development Web Space!

Flavio, you've already earned [4325 Activity Points!](#)

You've recently earned:



**Web Seminar Activator**  
[Attend Web Seminars](#)

You're close to earning:



**Sapphire Commenter**  
[Post 15 more comment/questions](#)

Activity Progress Bar

Your Activity Matters!  
It reduces  
your  
carbon  
footprint!



Be sure to [update your profile and review your points & badges!](#)

With these resources you can build your professional development plan, track your activities and assess your progress. You can start at "Explore Learning Opportunities" below or by creating your game plan with the PD Plan and Portfolio tool. You may also review an [archived Web Seminar](#) or a [multimedia overview](#) of the Learning Center.

### NEW LIVE SUPPORT



Online  
Advisors  
now  
available!

### Featured PD Resource



**Science  
OBJECTS**

[Force and Motion: Position and Motion](#)

⌘ [Explore Learning Opportunities](#)  
⌘ [Advanced Search](#)

⌘ [See all FREE Lesson Plans](#)  
⌘ [See all FREE Resources](#)



**LIVE SUPPORT  
ONLINE**

[Click here](#) →




When did you start using the Learning Center?

Over a year ago	Six months ago	Within the last month

In your opinion, what are its best features?

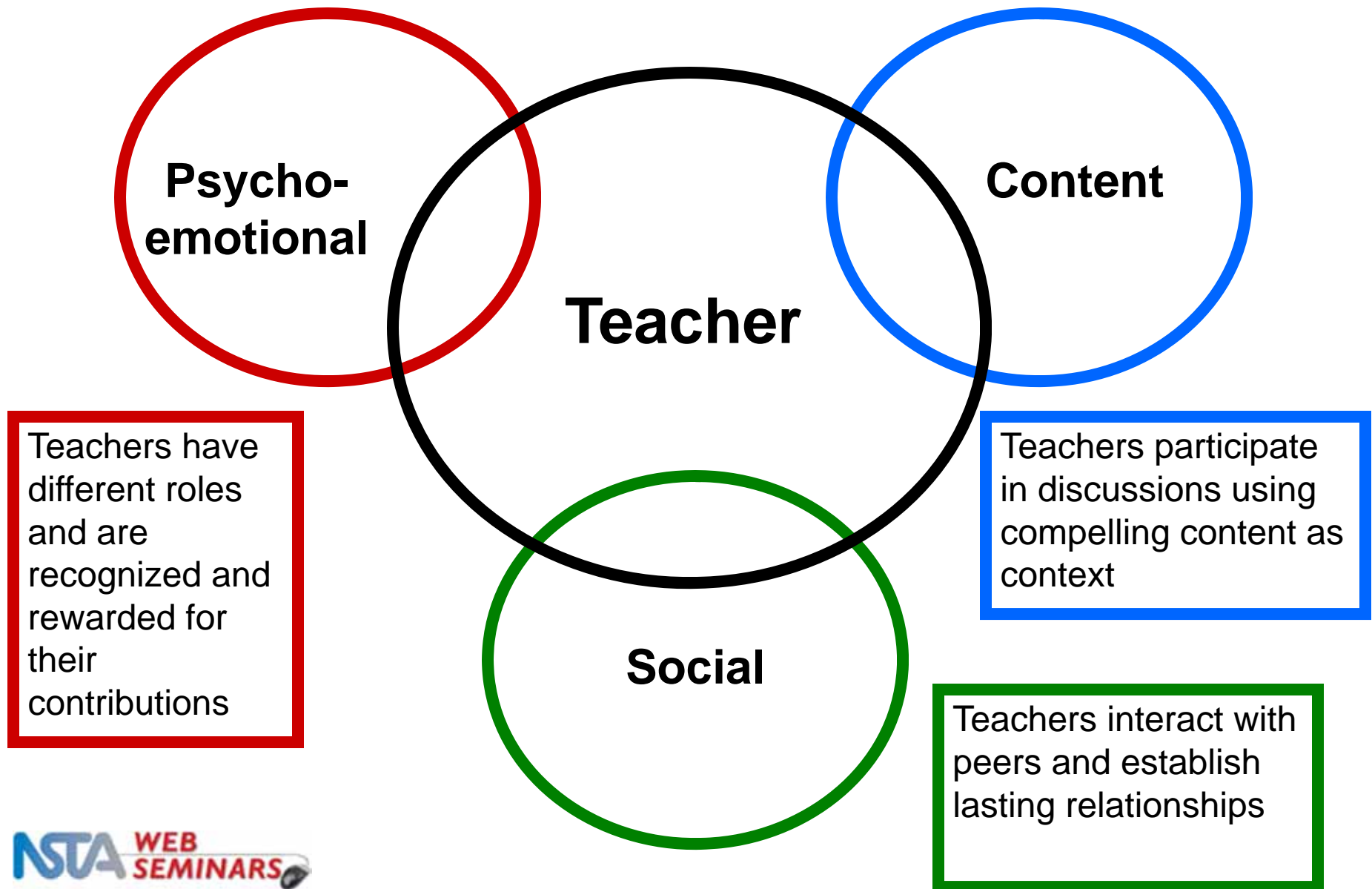
Easy to navigate	Variety of resources	Help Desk
The tools	Always open	Standards-based



# *Learning Center* **Community**



# Building a Teacher-centered community




# User Profile

- About you, interests, goals, expertise
- Display your badges, points awarded for community building activities:

- ✓ Aggregate
- ✓ Disseminate
- ✓ Advocate
- ✓ Comment

## Learning Center Profile




**Patricia Rourke**


[1130 Activity Points](#)

Affiliation: Science Technology Consultant


Location: Arlington, VA and Cape May Point, NJ

Badges:







**Aggregator:** Add personal resources to your library



**Disseminator:** Share your resource collections



**Advocator:** Review and rate resources




**Commenter:** Post in the Discussion Forums

[View all activities](#)

Badges Yet to be Earned

[Visit the activities page](#) to learn how you can earn points and badges. The NSTA Learning center awards badges based on activities performed within the website. Pursuing badges is a great way to explore all the resources and professional development tools the Learning Center has to offer.



### Contact

IM: Patty Rourke

### Statistics

Joined: Tue Nov 29, 2005 11:01 AM

Last Visited: Yesterday, 9:04 PM

Total Posts: 152

### Recent Posts

Tue Nov 30, 2010 7:33 PM in [Force and Motion with Kindergarten](#)

Hi Kathy,

Now that you've snagged our attention, please upload and share your lesson plan and for sure, tell us all about how it was received in Alabama. We look forward to it :)

Cheers,

Patty R

[View Full Post](#)

▸ Back to NSTA.org ▸ Contact Us ▸ Help ▸ Feedback

# The NSTA Learning Center

Search the Learning Center

Home My PD Tools Subject Learning Resources & Opportunities Discussion Forums Education Administrator

Welcome, Flavio :: [Admin](#) | [Log Out](#)

My PD Tools

- My Profile
- My Library
- My PD Indexer
- My PD Plan & Portfolio
- My PD Record & Certificates
- My Calendar
- My Notepad
- Discussion Forums
- My Help Tickets
- Give Us Feedback

Welcome, Flavio

You've received 1 Web Activity

Be sure to **update your profile and review your points & badges!**

With these resources you can build your professional development plan, track your activities and assess your progress. You can start at "Explore Learning Opportunities" below or by creating your game plan with the PD Plan and Portfolio tool. You may also review an [archived Web Seminar](#) or a [multimedia overview](#) of the Learning Center.

Personal Development Web Space!

Activity Points!

You're close to earning:  
**Sapphire Commenter**  
[Post 15 more comment/questions](#)

Activity Progress Bar

Your Activity Matters!  
It donates Books and Pencils!

NEW LIVE SUPPORT

Online Advisors now available!

Featured PD Resource

Science OBJECTS **FREE**

Force and Motion: Position and Motion

**My PD Tools >> My Profile**



## Learning Center Profile

[Edit My Profile](#)



Flavio Putnam

[0 Activity Points](#)

Welcome: **Complete this space and upload your thumbnail image:**

Your profile is a professional reflection for others to learn about you as they view your contributions to this learning community. As you create, rate and share resources and collections of resources you will earn points and badges that will travel with you and reflect your contributions to the community. You are not an island unto yourself, but connected to a larger group of like-minded colleagues at various levels of experience. Get connected and engaged by contributing your ideas to the [discussion forums](#), uploading your best resources into a [public collection for others to try](#), and if you have a question, be sure to tap the [live online advisors](#).

**[So let's get started!](#)** Upload an image of yourself, let us know who you are, and become part of this dynamic community and the resources we can share amongst each other!



**Aggregator:** Add personal resources to your library



**Disseminator:** Share your resource collections



**Advocator:** Review and rate resources



**Commenter:** Post in the Discussion Forums

[View all activities](#)

### Badges Yet to be Earned

[Visit the activities page](#) to learn how you can earn points and badges. The NSTA Learning center awards badges based on activities performed within the website. Pursuing badges is a great way to explore all the resources and professional development tools the Learning Center has to offer.



## Community Profile

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Any information shared in this Community Profile section is publicly available to all registered users of the Learning Center.



[Change Profile Pic](#)

School / Work Affiliation

About Me

Location

IM Screen Name

Twitter

Facebook

Skype Name

S  
U  
B  
M  
I  
T







# *Complete your community profile*

# Who is Online?

- Find other Learning Center users
- Read their profiles, see their badges, points
- Read their most recent discussion forums posts and respond

The screenshot displays the NSTA Learning Center website. At the top, there's a navigation bar with links like 'Explore Learning Opportunities', 'Advanced Search', 'See all FREE Lesson Plans', and 'See all FREE Resources'. Below this, the main content area is divided into several sections: 'By Subject' (Earth & Space Science, Life Science, Physical Science), 'By Grade Level' (Elementary, Middle School, High School, College), and 'By State Standards' (with a dropdown menu). There are also sections for 'Do-It-Yourself Learning', 'Live Online Seminars & Classes', 'Books, Articles & Websites', and 'In Person Experiences'. A 'Our Content Collaborators' section features logos for various organizations like NASA, NSF, FDA, and NSTA Press. Below that, 'NSTA Learning Center Underwriters' are listed, including Hewlett Foundation, GE Foundation, and ExxonMobil Foundation. A large text block at the bottom describes the Learning Center as an e-professional development portal. On the right side, there's a 'LIVE SUPPORT ONLINE' section, 'NSTA Featured Resources' (including SciPacks), 'Most Popular Resources' (a list of topics like Cell Structure and Function), 'Reminders & Opportunities' (a list of upcoming events and resource expirations), and a 'Who is Online' section listing active users.

Explore Learning Opportunities  
Advanced Search  
See all FREE Lesson Plans  
See all FREE Resources

By Subject  
Earth & Space Science  
Life Science  
Physical Science

By Grade Level  
Elementary  
Middle School  
High School  
College

By State Standards  
Select your state to begin:  
Choose a state

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

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.  
SEE ALL ONLINE EVENTS

Books, Articles & Websites  
Books  
Book Chapters  
eBooks  
Journals  
SciLinks

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

Our Content Collaborators  
Logos for NSF, NASA, FDA, NSTA Press, etc.

NSTA Learning Center Underwriters  
Logos for Hewlett Foundation, GE Foundation, ExxonMobil Foundation, etc.

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 5,800 different resources that cater to your preference for learning. Over 1,700 resources, such as journal articles, science objects, podcasts and web seminars are available for free. Other resources include SciPacks, SciGuides, and Short Courses. A suite of practical tools including My Library, My PD Record, My Professional Development Plan and Portfolio, My Calendar, My Notepad, and My PD Indexer are available to help you organize, personalize, and document your growth over time. If desired, you may review an archived Web Seminar overview of the NSTA Learning Center, or download the "How to Guide" PDF (2.7 MB).

LIVE SUPPORT ONLINE  
Click here

NSTA Featured Resources  
NSTA SciPacks  
You Deserve the Credit!  
RSS SHARE

Most Popular Resources  
Enrolled Viewed  
1. Cell Structure and Function: Cells – The Basis of Life  
2. Plate Tectonics: Layered Earth  
3. Universe: The Sun as a Star  
4. Energy: Thermal Energy, Heat, and Temperature  
More Popular Resources...

Reminders & Opportunities  
16 DEC 2011 REMINDER Web Seminar: The NSTA Learning Center: Free PD Resources and Tools for Educators, December 16, 2011 View Info  
27 OCT 2011 RESOURCE EXPIRATION SciPack: Force and Motion View Info  
27 OCT 2011 RESOURCE EXPIRATION SciPack: Cell Structure and Function View Info  
27 OCT 2011 RESOURCE EXPIRATION SciPack: Coral Reef Ecosystems View Info  
27 OCT 2011 RESOURCE EXPIRATION SciPack: Earth's Changing Surface View Info  
27 OCT 2011 RESOURCE EXPIRATION SciPack: Earth, Sun, and Moon View Info  
More Reminders & Opportunities...

Who is Online  
Lisa Bangert, Jacqueline Carl, Victoria Chudy, Susan German, Dileida Gracia, Susanne Hokkanen, Heidi Keller, Flavio Hernandez, Kacie Pitzer, Chuck Schenck, Schenck, Tara Spitzer-Walt, Adah Stock, Nicole Sudie, David White, Polly White, Kristin Winslow, Kendra Young ...

# *Learning Center*

## **Activity Points**

# Learning Center Activity Points



A screenshot of a web interface showing a list of activities with icons and descriptions. The activities are: Aggregator (DNA icon), Disseminator (share icon), Advocate (magnifying glass icon), and Commenter (speech bubble icon). Below these is a link 'View all activities' which is circled in red.

-  **Aggregator:** Add personal resources to your library
-  **Disseminator:** Share your resource collections
-  **Advocator:** Review and rate resources
-  **Commenter:** Post in the Discussion Forums

[View all activities](#)

- Earn points/badges while completing tasks in the LC
- Badges displayed in User Profile and Discussion Forums
- Charitable donations made on your behalf

Exploring strategies that help build online communities of practice



## LOGIN ::

Welcome, Dawn

[Log Out](#)



[Hours of Operation](#)

## :: ADVANCED SEARCH

[Advanced Search](#)

## :: Learning Center Activity Points

Below is a list of the different types of activities you can do within the Learning Center to earn points and recognition for your efforts as you review, aggregate, rate, share and discuss your personal and e-PD resources and opportunities from NSTA.

[Activity Points](#)

[Auto Donations](#)

### Add an NSTA resource to your Learning Center Library

10 Activity Points (AP)

[How to add a resource to your library](#)



NSTA Resource Activator - Add 5 NSTA resources to your library



NSTA Resource Optimizer - Add 10 NSTA resources to your library



NSTA Resource Accelerator - Add 20 NSTA resources to your library

### Aggregator: Add a personal resource to your LC library

10 Activity Points (AP)

[Upload a personal resource](#)



Onyx Aggregator - Add 5 personal resources to your library



Sapphire Aggregator - Add 30 personal resources to your library



# Activities you can do to earn Points

Add NSTA res to lib	
Complete PD Indexer	
Add events to calendar	
Add personal res to lib	
Attend web seminar	
Complete/pass SciPack	
Review/rank a resource	
Recommend a resource	

Post on discussion forum	
Create a collection	
Share a collection	
Make collection public	
Create a PD portfolio	
Create a PD goal on port	
Upload evidence to port	
Write reflection to complete goal	
Generate port report	





# How many Activity Points do you have?

0	1-30	31-100	101-300	301+



???



# *Learning Center*

# Discussion

# Forums

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# The NSTA Learning Center

Search the Learning Center



Home

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Subjects

Learning Resources  
& Opportunities

Discussion  
Forums

Education  
Administrator

## My Learning Center

Welcome, Flavio [Log Out](#)

Welcome

My  
Library

My  
PD Indexer

My PD Plan  
and Portfolio

My PD Record  
and Certificates

My  
Calendar

My  
Notepad

New: Discussion  
Forums

Help  
Desk

## Welcome to Your Professional Development Web Space!

Flavio, you've already earned 360 Activity Points!

You've recently earned:



**NSTA Resource Optimizer**  
[Add NSTA Resources](#)

You're close to earning:



**Onyx Commenter**  
[Post 5 more comment/questions](#)

Activity Progress Bar

Your Activity Matters!

It saves  
Polar  
Bears!



Be sure to update your profile and review your points & badges!

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### NEW LIVE SUPPORT



Online  
Advisors  
now  
available!

### Featured PD Resource



**Science  
OBJECTS**



Universe: How We Know What We Know

## Explore Learning Opportunities

[Advanced Search](#)

[See all FREE Lesson Plans](#)

[See all FREE Resources](#)



**LIVE SUPPORT  
ONLINE**

Click here [→](#)



## :: Discussion Forums






Below are group forums that you may join. Post to existing topics or start your own! All NSTA resources, personally uploaded resources, and collections may be shared and commented upon within these discussions.



[Hours of Operation](#)

26 people currently online

### Public Forums

Forum		Last Post	
	<b>Life Science</b> A public forum.	29 Topics 540 Posts	by Patricia Rourke Yesterday, 7:34 PM <a href="#">Environmental Science</a>
	<b>Physical Science</b> A public forum.	22 Topics 310 Posts	by Steve Werner Yesterday, 11:32 PM <a href="#">Physical Science in the News</a>
	<b>Earth and Space Science</b> A public forum.	31 Topics 426 Posts	by Adah Stock Today, 10:04 AM <a href="#">Earth Science Standards</a>
	<b>General Science and Teaching</b> A public forum.	85 Topics 1053 Posts	by Jan Tuomi Today, 12:15 PM <a href="#">Topics in Science Course</a>
	<b>Evaluation and Assessment</b> A public forum discussing formative, sumative, and dynamic assessments and evaluations.	2 Topics 5 Posts	by Dorian Janney Yesterday, 8:17 PM <a href="#">Evaluating Science Programs</a>

### Who is Online

Sean Andersen, Debra Bridges, Michelle Brown, Cheryl Dix, Cheryl Dix, Sharon Euler, Eddie H, Julie Heintz, Danielle Hoffman, Marcella Jimenez, Leigh Lace, Renee Lodi, Flavio Mendez, Judy Meredith, Arturo Navar, Melissa Ocker, Gina Peters, Julie Poth, heidi putman, Joel Rolon, nancy shock, Gerald Skoog, Allyson Streeper, Debbie Tomlin, Jan Tuomi, Jennifer Wyland

by [Patricia McGinnis](#), Sat Aug 28, 2010 10:52 AM

Subject: Patty McGinnis' Collection

I will be working with gifted students this year as a gifted resource specialist so I have started my collection with items that I can use with the gifted students. I have selected 3 articles from NSTA journals and 3 archived webinars about science competitions like Exploravision. Normally teachers don't have time in the curriculum to conduct competitions. It is my hope that I can build a program that would include all sorts of challenging activities for students, including science competitions.



[Patricia McGinnis](#)



Learning Center Activity Points:



Posts: 28

[REPORT](#)

by [Patricia Rourke](#), Mon Aug 30, 2010 11:43 AM

This will be interesting since I just went in and copied my current Library Profile and attached it below. I will take the time to explore NSTA Resources with new eyes looking for items that may be useful to us as on-line advisors. As I scanned the posts prior to this one, and I am sure those that will follow, I know that there will be additional areas selected by you that I will want to explore also. My current profile reflects my recent collaboration with NSTA.

#### Attachments



[PAR Library Profile Aug 30.jpg](#) (0.07 MB)



[Patricia Rourke](#)



Learning Center Activity Points:



Posts: 55

[REPORT](#)

## A Teacher's Testimonial

“I am finding the Learning Center discussion forums very **helpful**. People are really coming forward with **suggestions**, articles, etc. You can also get help for a very specific topic in a **timely** fashion.”  
Chicago, IL

Have you posted a comment on the  
Discussion Forums?



Yes	No	Maybe I'll try it soon

# *Learning Center*

# Online Advisors



# Learning Center Online Advisors

- Educators who moderate discussion, assist users
- 7 days/week; ~60 hours/week

## Wendy Ruchti

Wendy Ruchti has been part of the Educational Foundations Department at Idaho State University's College of Education since 2008. She received a PhD in Education from the University of Idaho in 2005 with an emphasis in curriculum and instruction in STEM education. At ISU, she has taught several educational foundations courses. Her research interests include elementary science education and creating collaborative online learning environments. Before coming to ISU, she taught middle school science and math.



## Lara Smetana

Lara Smetana is an assistant professor of science education at Southern Connecticut State University. She brings classroom experience as an 8th grade physical science teacher and has worked with a variety of informal education programs across the country. Lara teaches courses in elementary science methods and educational technology and mentors student teachers. Her research interests include pre- and in-service teacher education and the use of educational technology in science teaching and learning.



## Kathy Sparrow

Dr. Kathy Sparrow is currently an adjunct professor at Florida International University (FIU), teaching Elementary Science Methods. She previously worked as a middle and high school science teacher as well as the Science Supervisor for Akron Public Schools. She was a Regional Director for SECO, served on the NSTA Board of Directors and was president of the National Science Education Leadership Association (NSELA). Kathy was also awarded the Outstanding National Science Supervisor Award in 1999.



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## My Learning Center

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### Featured PD Resource



**Science  
OBJECTS**



[Force and Motion: Position and Motion](#)

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[Advanced Search](#)

[See all FREE Lesson Plans](#)  
[See all FREE Resources](#)



**LIVE SUPPORT  
ONLINE**

[Click here](#)

# Reviewing resources and making collections



Number of reviews made by Online Advisors	Number of collections created by Online Advisors
<b>877</b>	<b>59</b>

# *Learning Center*

## e-PD Resources





- Free, self-paced, learning experiences
- Interactive simulations
- Questions to promote interaction and learning
- Based on science education standards
- Eighty (80) currently available



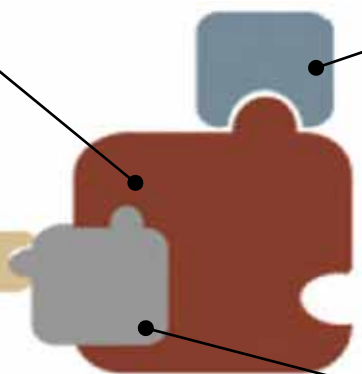




3-5 Science Objects



Unlimited Content  
Mentor Email  
Support



**SciPack**



Assessment and  
Certification  
Opportunity



Pedagogical  
Implications  
Component



# What's new?



## Cell Division and Differentiation:

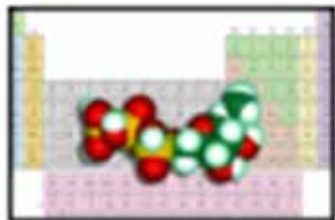
- Continuity of Life
- Variation and Specialization of Cells
- Multicellular Organization



## Explaining Matter with Elements, Atoms, and Molecules:

- Characteristics of Elements
- Classifying the Elements
- Evidence for Atoms and Molecules





Characteristics of  
Elements

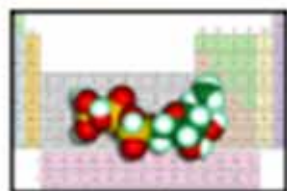
# Characteristics of Elements

## Science Object

**KEY IDEAS:** Based on NSES and AAAS Benchmarks

- When substances in the world undergo changes, these are evident through changes in the properties of substances.

- Properties that do not change with the amount of a substance, such as density, solubility or boiling point, are called characteristic properties...



Characteristics of  
Elements

# Interactive Simulation

Designed to meet at least

- one Key Idea and
- one Evidence of Understanding


**NSTA SCIENCE INTERACTIVE: Density**

INSTRUCTIONS ⓘ

To determine the density, first you need to measure the mass of the object. Click on one of the objects below and drag it to the scale to find its mass. Then click 'Next Item' to find the mass of another object. After you have found the mass of all three objects, click 'Finished' to move on.

Item	Mass	Volume	Density
Wood			
Bolt			
Marble			

⚙️ 🔍 🔺



0.0 g

Finish



# Evidences of Understanding (EOUs)

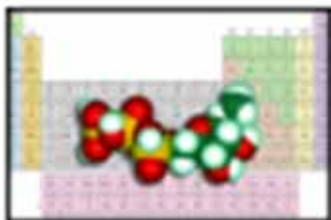
For which EOU was the Density simulation designed?

**EAM 1.1 Identify changes in substances evident through changes in their characteristic properties.**

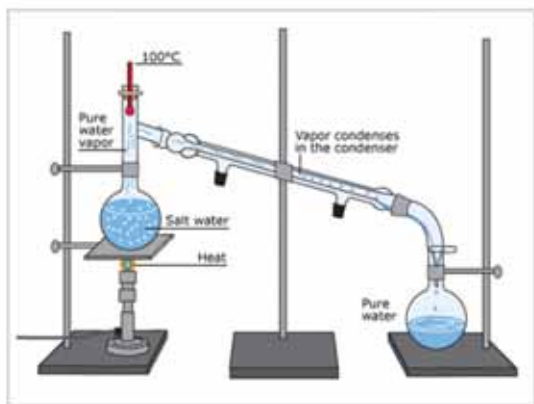
**EAM 1.2 Provide examples of characteristic properties for a substance.**



# Characteristics of Elements



Characteristics of  
Elements



2 of 3

Science Object includes

- Simulations
- Photographs
- Slide Shows
- Illustrations
- Student  
Preconception  
Boxes
- Glossary
- Assessment

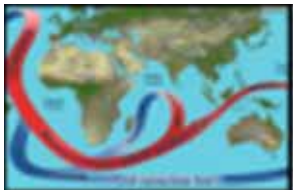


Figure 2.8. A skater stuck on an icy sidewalk after rock salt was applied to the sidewalk lowering the freezing point of the ice-salt mixture.



1 of 4

The initial heating of mercuric oxide, with glowing splint prepared for placing it inside the test tube.



# What's new?

## Tides and Currents SciGuide



Home > [Guide: Tides and Currents](#) > [Theme: Tides](#)

### Tides

If you live near the coast or have ever visited the beach, you are probably aware of tides. But did you know that tides are really big waves that move through the ocean in response to the forces of the Moon and the Sun? Tides appear as the regular rise and fall of the sea surface. How much the water level changes over the day varies depending on where you are and what day it is.

[http://oceanservice.noaa.gov/education/kits/tides/tides01\\_intro.html](http://oceanservice.noaa.gov/education/kits/tides/tides01_intro.html)



NOAA's National Ocean Service has been measuring and predicting tides since the 1800s using engineered systems that automatically detect and record changes in water levels. These early sets of data were collected mechanically on drums of paper which had to be frequently attended to and adjusted by scientists on a regular basis. Today data are recorded electronically, transmitted via satellite, and made available online. At the backbone of this system is a network of long-term, continuously operating water-level stations known as the National Water Level Observation Network. There are real-time tidal observations and prediction stations around the United States. If the level of water is constantly changing, how do we know how much water levels have risen or fallen from normal? To define normal, scientists use a reference, or datum, as a starting point from which all measurements are made. The numbers that appear on a nautical chart represent water depths measured relative to such a datum.

#### • Coastal Tides:

##### • [9-12 Coastal Tides links](#)

Tides are a regular event on every coastline and their timing is predictable. Their occurrence is of great importance to all marine activities, including the natural daily flooding and drying of coastal wetlands, where animals and plants have evolved to thrive in these unique environments. Many coastal wetland areas are also the outlet to terrestrial streams and rivers that flow to the ocean. In these locations, organisms need to be able to tolerate a range of environmental conditions including large variations in salinity that occur in relation to the level of freshwater input. Natural and human changes to these regular cycles can have devastating effects on these ecosystems. Some of these changes are tidal and some come from man-made alterations to the coastline and induced wave patterns.

### Lesson Resources:

#### • Ups and Downs

- [Lesson Plan](#)
- [Vignette \(Case Study\)](#)
- [Audio Clip](#)
- [Sample of Student Work](#)

#### • Salinity and Tides

- [Lesson Plan](#)
- [Vignette \(Case Study\)](#)
- [Audio Clip](#)
- [Sample of Student Work](#)

#### • Journal Articles

- [Scope on the Shores: Tidal forces](#)
- [Idea Bank: Monitoring the Oceans from the Classroom](#)
- [The Need for Ocean Literacy in the Classroom - Part I: An overview of efforts to promote ocean literacy](#)
- [Ocean Science in the Classroom](#)
- [Science Sampler: My glass of water has "circulating streams" in](#)

**Lesson Plans**

**Educator  
Feedback**

**Student Work  
Examples**

**Journal articles**

**Web Seminars**

**Podcasts**

**Content-based  
URLs for  
Teachers and  
Students**





???



# Add free Science Objects to your “Library”





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# The NSTA Learning Center

Search the Learning Center



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[Subjects](#)

[Learning Resources  
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[Discussion  
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[Education  
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## My Learning Center

[Welcome](#)

[My  
Library](#)

[My  
PD Indexer](#)

[My PD Plan  
and Portfolio](#)

### Welcome to Your Professional Development Space!

**NEW: Earn as you learn!** Collect points and badges for your comment, and complete PD! Create collections, and share with others!

Be sure to [update your profile and review](#)

With these resources you can build your professional development plan. You can start at "Explore Learning Opportunities". You may also review an [archived Web Seminar](#).

[Science Objects](#)  
[SciPacks](#)  
[SciGuides](#)  
[Symposia](#)  
[Symposia Archives](#)  
[Professional Development  
Institutes](#)  
[Web Seminars](#)  
[Web Seminar Archives](#)  
[Podcasts](#)  
[Online Courses](#)  
[NSTA Journal Articles](#)  
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[My  
Notepad](#)

[New: Discussion  
Forums](#)

[Help  
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### space!



Featured PD Resource

**NSTA ONLINE  
SHORT COURSES**  
Force and Motion

Track your activities and assess your progress. Create a game plan with the PD Plan and Portfolio tool. Explore the Learning Center.

Explore Learning Opportunities

[Advanced Search](#)

[See all FREE Lesson Plans](#)

[See all FREE Resources](#)



**LIVE SUPPORT  
OFFLINE**

Leave a message



See All  
Science  
Objects  
  
or  
  
Display  
Science  
Objects by  
Subject Area



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# The NSTA Learning Center

Search the Learning Center

Home | My PD Tools | Subjects | Learning Resources & Opportunities | Discussion Forums | Education Administrator

Learning Center Home > Resources > Science Objects

RSS | SHARE | Facebook | Twitter | Email

## LOGIN ::

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**OFFLINE**

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## ADVANCED SEARCH

[Advanced Search](#)



**Science  
OBJECTS**  
BUILDING CONTENT KNOWLEDGE

## BROWSE SCIENCE OBJECTS

- All Science Objects
- Earth and Space Science
- Physical Science
- Life Science

## Science Objects

**Ready When You Are — for Free!**

You're teaching a subject for the first time, or for the first time in a long time. You need a content refresher now. Where can you find help that's engaging, high-quality, easy to access—and affordable, too?

From NSTA's latest ready resource: Science Objects! Science Objects are two hour on-line interactive inquiry-based content modules that help you better understand the science content you teach.

With support from sponsors, Science Objects provide all teachers of science open access to these valuable new resources—at no cost!

The [system check](#) will detect your current browser settings and plug-ins you have on your computer as are required to access the rich media content in the Science Objects, such as the Flash and QuickTime media players.

[Learn More](#)



## FEATURED SCIENCE OBJECTS

Click on any of the titles below, to launch the Science Object:

Topic: Coral Reef Ecosystems	Topic: Ocean's Effect on Weather and Climate
<input type="checkbox"/> THE LIVING REEF	<input type="checkbox"/> GLOBAL CLIMATE PATTERNS
<input type="checkbox"/> THE ABIOTIC SETTING	<input type="checkbox"/> GLOBAL PRECIPITATION AND ENERGY
<input type="checkbox"/> INTERDEPENDENCE	



# Add a Science Object to Library

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# The NSTA Learning Center

Search the Learning Center

Home | My PD Tools | Subjects | Learning Resources & Opportunities | Discussion Forums | Education Administrator

Learning Center Home > Advanced Search

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**ADVANCED SEARCH**  
[Advanced Search](#)

**RESOURCE FILTERS**  
Narrow your search by subject, grade level, or price

**FILTER BY SUBJECT:**

- Life Science
- Earth & Space Science
- Physical Science

**FILTER BY GRADE LEVEL:**

- Elementary School
- Middle School
- High School
- College
- Informal Education

**FILTER BY PRICE:**

- Free
- <\$1
- \$1-\$3

Subject: [All Subjects](#)  
Opportunities: [All Opportunities](#) | [Do-it-Yourself Learning](#) | [Science Objects](#)

Individual Resources | Collections Created by Users | Collections Created by NSTA

Sort by: Relevancy  
Results: 1 - 10 of 74  
1 2 3 4 5 6 7 8 Next

**Coral Reef Ecosystems: Ecosystems in Crisis** ★★★★★  
Science Object  
[In My Library](#) [Add to PD Plan](#)  
Average User Rating: ★★★★★  
Science Objects are two hour on-line interactive inquiry-based content modules that help teachers better understand the science content they teach. This Science Object is the fourth of four Science Objects in the Coral Reef Ecosystems SciPack. It explores the natural and human causes of ecosystem stress. Human beings live near coral ecosystems and use them in a variety of ways. Increasing amounts of stress is brought on these ecosystems as humans... [View full summary](#)  
Member Price: **Free** Nonmember Price: **Free**  
Grade Level: Elementary School, Middle School

**Ocean's Effect on Weather and Climate: Global Climate Patterns** ★★★★★  
Science Object  
[Add to Library](#) [Add to PD Plan](#)  
Average User Rating: ★★★★★  
Science Objects are two hour on-line interactive inquiry-based content modules that



## My Learning Center

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[Welcome](#)[My  
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PD Indexer](#)[My PD Plan  
and Portfolio](#)[My PD Record  
and Certificates](#)[My  
Calendar](#)[My  
Notepad](#)[New: Discussion  
Forums](#)[Help  
Desk](#)

### Welcome to Your Professional Development Web Space!

Flavio, you've already earned [4325 Activity Points!](#)

You've recently earned:



**Web Seminar Activator**  
[Attend Web Seminars](#)

You're close to earning:



**Sapphire Commenter**  
[Post 15 more comment/questions](#)

Activity Progress Bar

Your Activity Matters!  
It reduces  
your  
carbon  
footprint!



Be sure to [update your profile and review your points & badges!](#)

With these resources you can build your professional development plan, track your activities and assess your progress. You can start at "Explore Learning Opportunities" below or by creating your game plan with the PD Plan and Portfolio tool. You may also review an [archived Web Seminar](#) or a [multimedia overview](#) of the Learning Center.

#### NEW LIVE SUPPORT



Online  
Advisors  
now  
available!

#### Featured PD Resource



**Science  
OBJECTS**



[Force and Motion: Position and Motion](#)

#### Explore Learning Opportunities

[Advanced Search](#)

[See all FREE Lesson Plans](#)

[See all FREE Resources](#)



**LIVE SUPPORT  
ONLINE**

[Click here](#)



## LOGIN ::

Welcome, Flavio

[Log Out](#)



[Hours of Operation](#)

## :: ADVANCED SEARCH

[Advanced Search](#)

## :: ADVANCED SEARCH

[Help](#)

Search all NSTA resources and offerings below:

Keyword:

Author:

Type of Learning Resource:

Grade Level:

- ☒ All Grade Levels
- ☐ Elementary School
- ☐ Middle School
- ☐ High School
- ☐ College
- ☐ Informal Education

Science Discipline:

Price:





# Add other free resources to your “Library”





▸ Back to NSTA.org ▸ Contact Us ▸ Help ▸ Feedback

# The NSTA Learning Center

Search the Learning Center

Home My PD Tools Subject Learning Resources & Opportunities Discussion Forums Education Administrator

Welcome, Flavio :: [Admin](#) | [Log Out](#)

My PD Tools

- My Profile
- My Library
- My PD Indexer
- My PD Plan & Portfolio
- My PD Record & Certificates
- My Calendar
- My Notepad
- Discussion Forums
- My Help Tickets
- Give Us Feedback

Welcome, Flavio

You've received 1 Web Activity

Be sure to **update your profile and review your points & badges!**

With these resources you can build your professional development plan, track your activities and assess your progress. You can start at "Explore Learning Opportunities" below or by creating your game plan with the PD Plan and Portfolio tool. You may also review an [archived Web Seminar](#) or a [multimedia overview](#) of the Learning Center.

Personal Development Web Space!

Activity Points!

You're close to earning:  
**Sapphire Commenter**  
[Post 15 more comment/questions](#)

Activity Progress Bar

Your Activity Matters!  
It donates Books and Pencils!

NEW LIVE SUPPORT

Online Advisors now available!

Featured PD Resource

Science OBJECTS **FREE**

Force and Motion: Position and Motion

**My PD Tools >> My Profile**



How many Activity Points do you have now?

0	1-30	31-100	101-300	301+

# *Learning Center*

# Tools

# the NSTA Learning Center

Search the Learning Center



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## My Learning Center

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New: Discussion  
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Help  
Desk

## Welcome to Your Professional Development Web Space!

Flavio, you've already earned 360 Activity Points!

You've recently earned:



**NSTA Resource Optimizer**  
[Add NSTA Resources](#)

You're close to earning:



**Onyx Commenter**  
[Post 5 more comment/questions](#)

Activity Progress Bar

Your Activity Matters!

It saves  
Polar  
Bears!



Be sure to update your profile and review your points & badges!

With these resources you can build your professional development plan, track your activities and assess your progress. You can start at "Explore Learning Opportunities" below or by creating your game plan with the PD Plan and Portfolio tool. You may also review an [archived Web Seminar](#) or a [multimedia overview](#) of the Learning Center.

### NEW LIVE SUPPORT



Online  
Advisors  
now  
available!

### Featured PD Resource



**Science  
OBJECTS** **FREE**

[Universe: How We Know What We Know](#)

Explore Learning Opportunities

[Advanced Search](#)

[See all FREE Lesson Plans](#)

[See all FREE Resources](#)



**LIVE SUPPORT  
ONLINE**

[Click here](#)



- A **community** of teachers to share ideas, questions, experiences
- Over 6,100 **resources**
- Practical **tools** for teachers to organize, personalize & document their growth over time



The screenshot displays the homepage of The NSTA Learning Center. At the top, there is a navigation bar with links: "Back to NSTA.org", "Contact Us", "Help", and "Feedback". The main header features the "The NSTA Learning Center" logo and a search bar with the text "Search the Learning Center". Below the header is a horizontal menu with tabs: "Home", "My PD Tools", "Subjects", "Learning Resources & Opportunities", "Discussion Forums", and "Education Administrator".

The main content area is divided into several sections:

- Welcome to Your Professional Development:** A text block explaining that the Learning Center is NSTA's e-professional development (PD) portal, offering access to over 6,000 resources, with over 1,800 being free. It mentions tools like "My Library", "My PD Record", and "My PD Plan and Portfolio". A small image of a smiling woman is included.
- NEW: Earn as you learn!** A section about collecting points and badges for professional development, with icons for various activities.
- NEW: Live Support!** A section about chatting with online advisors.
- Explore Learning Opportunities:** A section with links to "See all FREE Lesson Plans" and "See all FREE Resources".
- Login:** A section with fields for "E-mail" and "Password", a "LOGIN" button, and links for "I'm an NSTA member but I don't have a password", "Register Now for Free", and "Lost password?".
- Growing in the Right Direction!** A section celebrating "Over 547,000 additions across teachers' personal libraries" and a "Start Your FREE Collection TODAY!" button.
- Most Popular Resources:** A section at the bottom right.



# Collaborators



S.D. Bechtel, Jr.  
Foundation



Agilent  
Technologies  
Foundation



EXXONMOBIL  
FOUNDATION



# Don't forget the web seminar evaluation



## and to choose your FREE SciPack

	<b>Earth &amp; Space</b> <i>8 Topics</i>	<b>Physical</b> <i>7 Topics</i>	<b>Life</b> <i>6 Topics</i>
<b>Completed</b>	<ul style="list-style-type: none"><li>• Earth, Sun &amp; Moon</li><li>• Gravity &amp; Orbits</li><li>• The Solar System</li><li>• The Universe</li><li>• Weather &amp; Climate</li><li>• Rock Cycle</li><li>• Plate Tectonics</li><li>• Earth's Changing Surface</li></ul>	<ul style="list-style-type: none"><li>• Force &amp; Motion</li><li>• Energy</li><li>• Nature of Light</li><li>• Chemical Reactions</li><li>• Electric and Magnetic Forces</li><li>• Atomic Structure</li><li>• Explaining Matter with Elements, Atoms, and Molecules</li></ul>	<ul style="list-style-type: none"><li>• Cell Structure &amp; Function</li><li>• Coral Reef Ecosystems</li><li>• Science of Food Safety</li><li>• Resources &amp; Human Impact</li><li>• Nutrition</li><li>• Cell Division and Differentiation</li></ul>

# The NSTA Learning Center

Flavio Mendez  
Senior Director  
NSTA Learning Center

PH: 703-312-9250

Email:

fmendez@nsta.org

Questions?

A screenshot of the The NSTA Learning Center website. The header features the site's name and a search bar. Below the header is a navigation menu with links to Home, My PD Tools, Subjects, Learning Resources & Opportunities, Discussion Forums, and Education Administrator. The main content area includes a welcome message, a login section, and a list of featured resources. The footer contains a table of learning opportunities categorized by subject, grade level, and state standards.

Back to NSTA.org Contact Us Help Feedback

## The NSTA Learning Center

Search the Learning Center

Home My PD Tools Subjects Learning Resources & Opportunities Discussion Forums Education Administrator

### Welcome to Your Professional Development

The Learning Center is NSTA's e-professional development (PD) portal to help you address your classroom needs and busy schedule. You can gain access to more than 5,400 different resources, of which over 1,600 are free. A suite of practical tools such as *My Library*, *My PD Record*, and *My PD Plan and Portfolio* help you organize and document your PD growth. [Create your free account](#) and watch the [overview](#).

**NEW: Earn as you learn!** Collect points and badges as you aggregate, comment, and complete PD! Create collections with your own resources and share with others!

**NEW: Live Support!** Chat with Online Advisors while navigating your professional development. Simply log in or register to get started.

**Explore Learning Opportunities**

- [See all FREE Lesson Plans](#)
- [See all FREE Resources](#)
- [Advanced Search](#)

By Subject	By Grade Level	By State Standards
<ul style="list-style-type: none"><li>Earth &amp; Space Science</li><li>Life Science</li><li>Physical Science</li></ul>	<ul style="list-style-type: none"><li>Elementary</li><li>Middle School</li><li>High School</li><li>College</li></ul>	Select your state to begin: <input type="text" value="Choose a state"/>

### NSTA Featured Resources

**NSTA SciPacks**

You Deserve the Credit!

### Most Popular Resources

Emailed Viewed

- Cell Structure and Function: Cells – The Basis of Life
- Plate Tectonics: Layered Earth
- Universe: The Sun as a Star
- Energy: Thermal Energy, Heat, and Temperature

# Thank you to the sponsor of tonight's Web Seminar:



This web seminar contains information about programs, products, and services offered by third parties, as well as links to third-party websites. The presence of a listing or such information does not constitute an endorsement by NSTA of a particular company or organization, or its programs, products, or services.



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# The NSTA Learning Center

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## My Learning Center

Welcome, Learning Center [Log Out](#)

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[My PD Plan and Portfolio](#)
[My PD Record and Certificates](#)
[My Calendar](#)
[My Notepad](#)
[New: Discussion Forums](#)
[Help Desk](#)

### Welcome to Your Professional Development Web Space!

Learning Center, you've already earned **2875 Activity Points!**

You've recently earned:  
 **Diamond Commenter**  
[Post comment/questions](#)

You're close to earning:  
 **Platinum Commenter**  
[Post 45 more comment/questions](#)

Be sure to **update your profile and review your points & badges!**

With these resources you can build your professional development plan, track your activities and assess your progress. You can start at "Explore Learning Opportunities" below or by creating your game plan with the PD Plan and Portfolio tool. You may also review an [archived Web Seminar](#) or a [multimedia overview](#) of the Learning Center.

**Activity Progress Bar**  
 Your Activity Matters!  
 It saves Polar Bears!

**Winter Holiday Giveaway!**  
**Earn Triple Points**  
 for all Activity  
 Now - Jan 31

**Featured PD Resource**  
 **Science OBJECTS** **FREE**  
 Rocks: Environments of Formation

<http://learningcenter.nsta.org>





**<http://www.elluminate.com>**

## **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**

Paul Tingler, Director

Jeff Layman, Technical Coordinator

