

A Newsletter from the Houston Urban Network for Science, Technology, Engineering and Mathematics ([HUNSTEM](#))

Best Links:

- [GHEEC](#)
 - [NSTA Science Classroom](#)
 - [Mechanisms](#)
- [nola.com article: Natural Selection](#)

Inside Stories:

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HUNSTEM News

I would like to mention three new projects that [HUNSTEM](#) is helping to develop. Please let us know what we can do to make these projects successful, or to expand these efforts to other areas.

First, with the guidance of Jackie Nowlin in Aldine ISD, we built a [TAKS Help](#) page. The intent of this page is to provide direct links to internet sites that best address the topics on the TAKS test. Jackie

developed an outline of TAKS topics, and [HUNSTEM](#) located appropriate sites. This is a first draft, so comments are welcome!

We also worked with Nancy Easterly on a new site of the Houston Area Physics Teachers ([HAPT](#)). We are please to help [HAPT](#) get established on the web, so take a look and get involved. A lot is going on with Physics education right now!

And third, we are working

with Alice Hahn in the Central Region of HISD on a new site for HISD [elementary school science fairs](#). Alice has already done a great job with this, but we hope to make her site more permanent and powerful.

Please take a look at these new sites and let us know what features would benefit you. We encourage everyone to do this for all of [HUNSTEM's](#) pages. Your comments are the engine that makes [HUNSTEM](#) grow!

Push for better data quality paying off

From [eSchool News](#) staff and wire service reports

States are making progress in building longitudinal data systems to support instruction, according to a new report--by there is still more work to be done

November 27, 2006—A year-old campaign that seeks to improve the collection and use of data to drive school reform appears to be bearing results: States around the nation are making progress in building longitudinal data systems to support instruction, according to the

Data Quality Campaign (DQC).

On the first anniversary of its launch, the Data Quality Campaign has released a report highlighting states' successes in building longitudinal data systems.

Over the past year, the DQC--a national partnership that aims to improve the quality, accessibility, and use of data in education--has highlighted the power of developing and using data systems that follow individual students' progress over time as a key tool to improve student achievement, and its work now seems to be paying off.

As a result of its efforts, the group says ...

"42 states (up from 37 last year) now report having a unique student identifier in place--an integral part of a longitudinal data system;

"Nine states have eight or nine of the 10 essential elements the Data Quality Campaign has identified as necessary building blocks for a longitudinal data system. No state reports having all 10 elements, but only six states have three or fewer;

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Study of Language Use in Children Suggests Sex Influences How Brain Processes Words



Washington, D.C.--Boys and girls tend to use different parts of their brains to process some basic aspects of grammar, according to the first study of its kind, suggesting that sex is an important factor in the acquisition and use of language.

Two neuroscientists from Georgetown University Medical Center discovered that boys and girls use different brain systems

when they make mistakes like "Yesterday I holded the bunny". Girls mainly use a system that is for memorizing words and associations between them, whereas boys rely primarily on a system that governs the rules of language.

"Sex has been virtually ignored in studies of the learning, representation, processing and neural bases of language. This study shows that differences between males and females

may be an important factor in these cognitive processes," said the lead author, [Michael Ullman](#), PhD, professor of neuroscience, psychology, neurology and linguistics.

He added that since the brain systems tested in this study are responsible for more than just language use, the study supports the notion that

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"Is what the Wall Street Journal and New York Times reported true? Is NCTM really going back to basics?."

All Eyes Are on NCTM's Curriculum Focal Points

The September 12 release of *Curriculum **Focal Points** for Prekindergarten through Grade 8 **Mathematics**: A Quest for Coherence* was widely reported in the news media and has generated considerable discussion among members and within the education community. The new publication marks the next step in the implementation of *Principles and Standards for School **Mathematics*** and is the Council's most significant

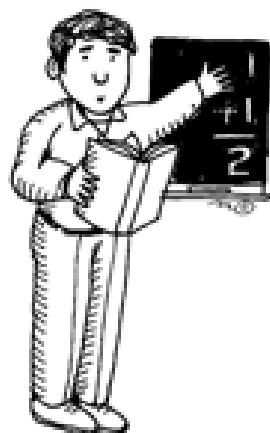
initiative since the Standards were published in 2000.

A first wave of inaccurate coverage in the general news media left some NCTM members and others in the education community asking, "Is what the *Wall Street Journal* and *New York Times* reported true? Is NCTM really going back to basics?"

In a letter to the *Wall Street Journal* published on

September 26, NCTM President Francis (Skip) Fennell clarified: "Contrary to the impression left in your article, learning the basics is certainly not 'new marching orders' from the NCTM, which has always considered the basic computation facts and related work with operations to be important. Nor is the new **focal points** approach to curriculum development a 'remarkable reversal' for NCTM.

Continued on pg 5



This Month in HUNBlog – A Gedanken Experiment for Teachers

Here's a problem for discussion, a [Gedanken Experiment](#) you might say.

There is an exercise that illustrates the potential pitfalls of lecturing and test construction, called the Monotillation of Traxoline.

See if you can pass the test that follows the scenario:

It is very important that you learn about traxoline. Traxoline is a new form of zionter. It is monotilled in Ceristanna. The Ceristannians gristerlate

large amounts of fevon and then bracter it to quasel traxoline. Traxoline may well be one of our most lukised snezlaus in the future because of our zionter lescelidge.

Read the rest on page 5 and take the test:

GHEEC Wins Award

"Greater Houston Energy Education Collaborative" Wins

"Best Outreach Program Award"

at the 2006 World Oil Awards

HOUSTON – October 20, 2006 - *World Oil*® magazine announced the eleven winners of the fifth annual World Oil Awards at a black-tie gala dinner last night in Houston, Texas. The winner of the "Best Outreach Program Award" was the Greater Houston Energy Education Collaborative (G.H.E.E.C.). The dinner,

attended by close to 350 industry leaders, also benefited three universities that offer programs leading to careers in the petroleum industry.

The Greater Houston Energy Education Collaborative is a group of nearly 30 professional societies, energy companies, universities and education professionals dedicated to improving science, technology, engineering and math education with a focus on energy. The Greater Houston Energy Education Collaborative accepted this award from award sponsor, Rod Nelson, Vice President,

Strategic Marketing at Schlumberger, and Rusty Meador, Publisher of *World Oil*.

This is how *World Oil* describes GHEEC: "GHEEC and its member organizations generate a critical mass that makes a significant difference for the energy industry today and for the energy workforce of the future. By consolidating fragmented efforts into one volunteer organization, GHEEC has the potential to accelerate the impact of energy education in the community and reach more than 500,000 students per year."



GHEEC is the Greater Houston Energy Education Collaborative

Harmony School of Excellence to Focus on Energy Education

Houston now has its first energy focused magnet school! I'll send out the official press release as soon as I have it this week.

The Harmony School of Excellence is an open charter, science and technology school that has chosen energy for its theme. The Gifted and Talented Instructional Coordinator for the school has degrees in engineering and math and the elementary school principal has recently been awarded a postdoctoral fellowship in education at

Harvard. The school is currently for K - 8th grade students but when the 8th graders finish this school year they will become the 9th grade class. In a few years the school will be K - 12th grade.

Students go to school from 8:00 am to 5:00 pm. School clubs which are held the last two periods of the day include Junior Engineers, Robotics, Odyssey of the Mind, Science Fair, Science Olympiad, Horticulture, and Chess Club to name a few. School is also in session of Saturday for certain clubs

as they approach regional and state competition dates in science. TAKS tutoring is also offered free of charge on Saturdays.

This information was provided by Kristina Hardwick, a member of the HUNSTEM Board of Directors.

"Houston now has its first energy focused magnet school!"

Outdoor Habitat Coalition Planned



According to Lawrence Spence, President of the Environmental Educator's Exchange (EEE), The National Wildlife Federation (NWF) has approached EEE with a proposition to devise an Outdoor Habitat Coalition that focuses on serving HISD schools in the development and construction of school-yard habitats as well as the training of teachers to better

use these and existing habitats.

For more information about the Environmental Educator's Exchange, go to: <http://www.eehouston.org>

For more information about the National Wildlife Federation's Backyard Wildlife Habitat Program, follow this link:

<http://www.nwf.org/backyard/>



... Continued from Study of Language in Children

"men and women may tend to process various skills differently from one another." One potential underlying reason, suggested by other research, is that the hormone estrogen, found primarily in females, affects brain processing, Ullman said.

The study, whose co-author is **Joshua Hartshorne**, was published earlier this year in

the journal *Developmental Science*.

Researchers know that women tend to be better than men at verbal memory tasks, such as remembering word lists, and that this ability depends on declarative memory. Included within declarative memory is a "mental lexicon" in which word forms are memorized and remembered. The

grammatical rules that allow us to combine words in sentences depend on "procedural" memory. Researchers have found that both boys and girls may be equally adept at this process, which depends on a different part of the brain than declarative memory.

Go here to read the rest of this article; [EurekaAlert!](#)

... Continued from eSchool News Story

Links:

Data Quality Campaign
<http://www.dataqualitycampaign.org>

National Center for Educational Accountability
<http://www.nc4ea.org>

Bill & Melinda Gates Foundation
<http://www.gatesfoundation.org>

"36 states have put into place an audit system to ensure high-quality data, which is one of the 10 essential elements the DQC has identified;

"26 states indicate they have or are working on building data warehouses; and

"28 states have some form of web-based data and analysis tools available for local educators.

The progress made over the

past year is encouraging, the group says, but there is still more work to be done.

"As we work to provide a high-quality education, our hopeful vision of the future requires us to take a hard look at the past," said U.S. Education Secretary Margaret Spellings in a statement. "By measuring children's performance over time, we can determine how best to educate the next generation. The Data Quality

Campaign is committed to making reliable and relevant longitudinal data accessible to all. Its member partners include some of the nation's most dedicated and serious educational organizations. I am confident that with their help, policy makers will clearly see the educational challenges ahead, so they can make the very best decisions to meet them."

Go here to read the rest of the article: [eSchool News online - Push for better data quality paying off](#)

... Continue The Monotillation of Traxoline

1. What is traxoline?
2. Where is traxoline monotilled?
3. How is traxoline quaselled?
4. Why is traxoline important?

Now, this is funny, but it is made up. To provide a similar example using "real" information, I've devised the following exercise from my own specialty of paleoecology:

It is very important that you learn about arcellacean taphonomy. Arcellaceans are a major group of testaceous rhizopods. During preservation in any depositional environment,

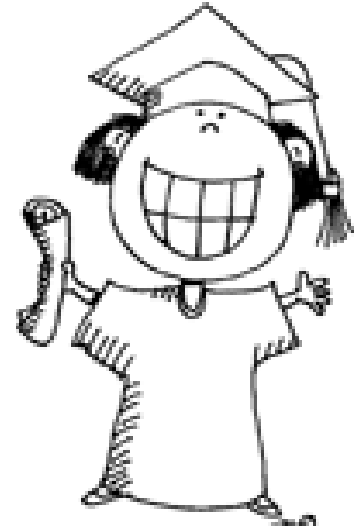
taphonomy produces different thanatocoenoses from extant biocoenoses. Thanatocoenoses are the result of differential preservation during burial, but differ between environments of deposition due to differences in original biocoenoses and soil biogeochemistry. Arcellaceans are one of our most useful paleoindicators for lacustrine environments.

1. What are arcellaceans?
2. How do thanatocoenoses form?
3. Why do thanatocoenoses differ?
4. Why are arcellaceans important?

How'd you do?

What do you really know about Arcellacean taphonomy?

Let's say you are a teacher and you have to teach this subject. You have plenty of resource materials on the subject, but no prior content knowledge. This topic is going to be on the standardized test your students will take at the end of the year. How do you teach it?



Did you pass the test?

... Continued from All Eyes Are On NCTM

As stated in NCTM's 1989 and 2000 *Standards*, conceptual understanding and problem solving are absolutely fundamental to learning **mathematics**. The Council has never promoted estimation 'rather than precise answers.' Estimation is a critical component to the overall understanding and use of numbers."

Fennell elaborated in a letter to the editor of the *New York Times* published on September 24: "What some refer to as basic skills (for example, multiplication facts, and fluency with the addition, subtraction, multiplication and division of whole numbers) have always

been a fundamental core of elementary school **mathematics**. Always. But we want more. We want children to understand the **mathematics** they are learning and we want them to be able to solve problems, which is, in the long run, why we do **mathematics**."

Curriculum **Focal Points** are important **mathematical** topics for each grade level that lay a strong foundation for understanding, lasting learning, and success in higher **mathematics**. They are not intended to be the only topics taught in each grade but are envisioned as the key topics to which others can be connected.

They help organize the curriculum and establish priorities that provide coherence in teaching **mathematics**. The **focal points** are not discrete topics to be mastered, and they allow for the fact that not all students will learn at the same rate. *Curriculum Focal Points* offers a framework for developing a **mathematics** curriculum at the school district and state level. The **focal points** are intended to frame discussions that will eventually shape the decisions of textbook publishers and assessment developers, as well.

*"The complete publication and related materials, including a space to submit questions, are available from the Curriculum **Focal Points** Web site (<http://www.nctm.org/focalpoints/>)"*

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Back Page Story

It Is Not Always May

The sun is bright,--the air is clear,
The darting swallows soar and sing.
And from the stately elms I hear
The bluebird prophesying Spring.

So blue you winding river flows,
It seems an outlet from the sky,
Where waiting till the west-wind blows,
The freighted clouds at anchor lie.

All things are new; - the buds, the leaves,
That gild the elm-tree's nodding crest,
And even the nest beneath the eaves; -
There are no birds in last year's nest!

All things rejoice in youth and love,
The fulness of their first delight!
And learn from the soft heavens above
The melting tenderness of night.

Maiden, that read'st this simple rhyme,
Enjoy thy youth, it will not stay;
Enjoy the fragrance of thy prime,
For oh, it is not always May!

Enjoy the Spring of Love and Youth,
To some good angel leave the rest;
For Time will teach thee soon the truth,
There are no birds in last year's nest!

By Henry Wadsworth Longfellow

About HUNSTEM

We believe that inquiry-driven, problem-based STEM (science, technology, engineering and mathematics) lessons are the best teaching method to attain increased science literacy. HUNSTEM will promote the use of inquiry-driven, problem-based science curricula in all classrooms in the Houston area. HUNSTEM will encourage problem-based curricula through collaboration between teachers, school administrators, curriculum directors and developers, and the ISE and professional resources of the Houston community. HUNSTEM will spread the message of inquiry-driven, problem-based science throughout the Houston area by establishing a vanguard of effective teachers who will encourage and support beginning and science-shy teachers in their schools. HUNSTEM will provide the resources and training for all K-12 teachers of science to become more confident and effective. Houston is rich in professional organizations dedicated to promoting STEM. HUNSTEM will build professional networks in each area of STEM in the Houston area. HUNSTEM will connect these organizations to teachers and families more effectively than they can do through their own efforts. By building these networks of professional organizations into the HUNSTEM web site, they will be able to target their audience, and teachers, parents and students searching for resources will find them. HUNSTEM will also help informal science centers reach their audiences more effectively by encouraging curricula and curricula development that utilizes the resources of the various museums, nature centers, zoos and parks in the Houston area.