

Upcoming Workshop Opportunities

For information about HCESC workshop opportunities, click on the green [LINK](#) above.



NOTE: When you click on the links in this newsletter, the window may pop up BEHIND your newsletter

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- End of Year ideas
- Summer Break ideas
- NCTM Conference Updates
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Contact Us by Email

Gale Jorgensen

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NCTM's Tips for Finishing the Year

- Celebrate Progress: Revisit that pre-test from the beginning of the year.
- Create a Class Timeline: Brainstorm a historic timeline for your class.
- Request a scientist, engineer, or mathematician come to your classroom - be part of National Lab Day!
- Hold a Math Carnival: Invite family and friends to your classroom to enjoy math, refreshments, and music!
- Keep Expectations High: Don't let your students know how anxious YOU are for summer to start!
- Encourage Reflection: Discuss what went well, what went wrong, and how to be better prepared for the next time.
- Become Experts: Students choose a topic to research and share with their classmates.
- Present the Best in Your Students: Write down a few good things you've learned about each of your students... consider sharing these thoughts with students, parents, and even next year's teachers.
- Try Something New: New groupings, different activities, class outside, different mode of assessments... give it a try!



For more details, visit NCTM's [website](#).



PLANTING A MATH GARDEN

- Think “real life.”
- Think “student-centered.”
- Think “differentiated.”
- Think “meaningful.”
- Don’t think “worksheets.”

Growing a Summer Math Garden by Wendy Petti

Help your students keep their math skills blooming during the summer months by encouraging them to participate in activities with their families.

As you think about helping students’ math skills thrive over the summer, also consider the skills, concepts, and attitudes you hope to find in your new students next fall. You might like to share some of these ideas with other teachers at your school and work together to help every student’s garden grow.



Check out Wendy’s [suggestions](#) for integrating math into typical summer-time activities.

Let the Summer Games Begin

Check out [NCTM’s website](#) for “Keepin’ Up With Math Skills Over Break” which includes resources for students: Online Games, Paper-Based Games, and Other FUN Resources ... and opportunities for teachers: Professional Development, Writing and Presentation Opportunities, and Opportunities Galore.



Did you miss the NCTM Conference in Indianapolis?

Check out [NCTM’s website](#) for links to conference highlights, webcasts, activity packets (including rich problems), blogs and more!

Our local celebrities presented at NCTM!
Jennifer Nickell & Kevin Carlin (Lakota)
“Promoting Higher-Level Geometric Thinking through Constructions and Writing Assignments”

Sara Garrison & Brad Hunt (Norwood)
“Go with the Flow: Describing Storm Water Runoff Using Derivatives”

Marilyn Burns’ slides have been posted from her NCTM presentation

Mark your calendar for NCTM 2012 in Philadelphia, PA!





Stay up to date with [ODE's website](#).

What would these Mathematical Practices look like in your classroom?



Common Core Blog

Check out this [Blog](#) recommended by Brad Findell, ODE

Progressions for the Common Core State Standards of Mathematics (DRAFTS) explain why standards are sequenced the way they are, point out cognitive difficulties and pedagogical solutions, and give more detail on particularly knotty areas of the mathematics. Progressions documents also provide a transmission mechanism between mathematics education research and standards.



Current Progressions DRAFTS posted:

- K-5, Number and Operations in Base Ten
- Expressions and Equations

Standards for Mathematical Practices

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students.

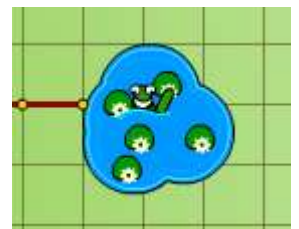
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

“Those content standards which set an expectation of understanding are potential ‘points of intersection’” between the Standards for Mathematical Content and the Standards for Mathematical Practice.”
Common Core Standards (p. 8)

Can you get the Turtle to the Pond?

This [Illuminations lesson](#) is recommended for Pre-K to 2, but can you find an application in your intermediate, middle school and high school classrooms?

Use the Turtle Pond Applet to explore a variety of Geometry concepts!

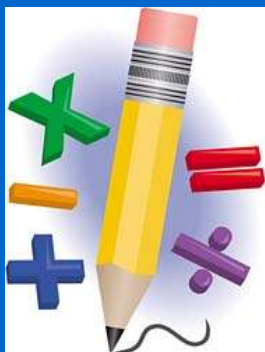


Motivating Those Dendrites!



Classroom Discussion Questions:

- Is there another way to solve the problem?
- Could there be other solutions to the problem?
- What happens if we change (some variable) in the problem?
- Explain your answer.
- Create a similar problem - one that is solved in the same way or one that has a similar answer.



In her book, *Mathematics Worksheets Don't Grow Dendrites*, Marcia Tate describes numeracy strategies that engage the brain for students Pre-K to Grade 8. Now that state testing is over for the year, you can experiment with some new instructional strategies in your math class.

Marcia Tate says that if you want students to retain content long-term, there are 20 brain-compatible strategies that take advantage of how the brain learns best, that will help to accomplish this. Below is a list of the strategies, a correlation of those 20 strategies to Howard Gardner's (1983) Theory of Multiple Intelligences as well as to the four major modalities - visual, auditory, kinesthetic, and tactile.

| Brain-Compatible Strategies | Multiple Intelligences | Modality |
|--|-------------------------------|---------------------|
| Brainstorming and discussion | Verbal-linguistic | Auditory |
| Drawing and artwork | Spatial | Kinesthetic/tactile |
| Field trips | Naturalist | Kinesthetic/tactile |
| Games | Interpersonal | Kinesthetic/tactile |
| Graphic organizers, semantic maps, and work webs | Logical-mathematical/spatial | Visual/tactile |
| Humor | Verbal-linguistic | Auditory |
| Manipulatives, experiments, labs, and models | Logical-mathematical | Tactile |
| Metaphors, analogies, and similes | Spatial | Visual/auditory |
| Mnemonic devices | Musical-rhythmic | Visual/auditory |
| Movement | Bodily-kinesthetic | Kinesthetic |
| Music, rhythm, rhyme, and rap | Musical-rhythmic | Auditory |
| Project-based and problem-based instruction | Logical-mathematical | Visual/tactile |
| Reciprocal teaching and cooperative learning | Verbal-linguistic | Auditory |
| Role plays, drama, pantomimes, charades | Bodily-kinesthetic | Kinesthetic |
| Storytelling | Verbal-linguistic | Auditory |
| Technology | Spatial | Visual/tactile |
| Visualization and guided imagery | Spatial | Visual |
| Visuals | Spatial | Visual |
| Work study and apprenticeships | Interpersonal | Kinesthetic |
| Writing and journals | Intrapersonal | Visual/tactile |

Reprinted "Comparison of Brain-Compatible Instructional Strategies to Learning Theory" from *Mathematics Worksheets Don't Grow Dendrites* by Marcia L. Tate.



Classroom IDEA:

Have your students **role play** problem solving situations. This visual depiction of the problem helps students more clearly understand the steps in a multistep word problem.



21st Century Student Outcomes

Download the *Full Skills Definition Document* [here](#)

Click on "The Standards" to download your own PDF version.

More ideas to Motivate those Dendrites...

Classroom Activity Idea:

Empower students to learn from the process of discussing problem solving by modifying the "Problem of the Day" concept. Select a problem to begin the day, but instead of the focus being on solving the problem to get an answer, *focus on **discussing** the problem*. Here are some guidelines for "Problem Discussion of the Day".

Address items such as:

- Characteristics of the problem
- Context of the problem
- Vocabulary in the problem
- Tools (tangible or conceptual) needed to solve the problem
- Type of solution required by the problem
- Possible ways of solving the problem
- How the problem relates to other problems seen before

Problem-Based Learning

Visit the website at the following address:

<http://www.amath.washington.edu/~adams/gk12/PBM/index.html>

| Concepts | Project Title | Description | Grade |
|-----------------------------------|---|--|-------|
| Linear Relationships and Graphing | The Great Candy Train Robbery | Concepts in linear relationships, intersections, and rates | 7,8,9 |
| Perimeter, Area and Volume | Raised Garden Beds: Rectangles | Concepts in area, perimeter, and volume of rectangles | 6 |
| Perimeter, Area and Volume | Raised Garden Beds: Polygons | Concepts in area, perimeter, and volume of polygons | 7,8 |
| Fractions | Incredible Cookie Number Crunch | Exercise in working with mixed-number and improper (top-heavy) fractions | 6 |
| Graphing | The Trebuchet Project | Concepts in graphing | 6,7,8 |
| Proportion and Ratios | Scaling Seattle | Concepts in proportions and scaling | 5,6 |

Note: All the project materials above are copyrighted, and their use is restricted to non-commercial educational purposes only.

Math At A Glance

TI-Nspire for Intermediate Users

- Algebra
- High School Mathematics

June 15-17, 2011 @ Madeira HS



NCTM E-seminars ANYTIME for less than \$100

- View seminar ANYTIME
- One electronic copy of the E-Seminar Handout
- Video recording of seminar
- Facilitator Guide

HCESC PD Institute August 8-12, 2011

Choose from a variety of sessions on differentiation, co-teaching, technology, integration, and more!



OCTM 2011 Conference: Toledo, Ohio October 13-14, 2011

Other Math Links and information:

National Council of Teachers of Mathematics

Greater Cincinnati Council of Teachers of Mathematics

Ohio Council of Teachers of Mathematics



Building Computational Fluency K-5 Workshop

Investigations Workshops is offering the **Building Computational Fluency K-5** workshop at Winton Woods High School this summer. This 5-day workshop focuses on the 2nd Edition of *Investigations in Number, Data, and Space*[®], primarily on the development of computation and number in the curriculum. Participants will:

- learn about the structural foundations of computational fluency
- examine their own and children's computational strategies
- look closely at the ways in which strategies for fluency develop
- focus on activities in the Investigations curriculum that support the development of computational fluency
- discuss the development of number and computation ideas at different grade levels
- use assessment to make instructional decisions that support the development of computational fluency

This workshop is designed for teachers who have either a) attended our Investigations in the Classroom workshop and are using Investigations as their primary curriculum, or b) have been using Investigations as their primary curriculum for at least two years.



Where:

Winton Woods High School
1231 West Kemper Road
Forest Park, OH. 45240

When:

July 13-17, 2011

Hours:

Mon-Thurs: 8 am. - 3 pm
Friday: 8 am - 1 pm

Cost:

\$600



2067 Massachusetts Avenue | Cambridge, MA 02140
phone: 617.873.9600 | fax: 617.873.9601
email: investigations_workshops@terc.edu
web: <http://investigations-workshops.terc.edu>

Are you getting information about additional learning opportunities for the math education community? If so, please send Gale or Christina the information so we can add it to our list!!