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MSD Decatur Township  
School City of East Chicago  
Vigo County Schools

Bartholomew Consolidated School Corp.  
Fort Wayne Community Schools  
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School City of Hammond



# IMI Newsletter

## Middle School & High School Math Teachers Study Dinosaurs

Is it really true? Middle school and high school math teachers studied the egg laying behavior of dinosaurs? As weird as it sounds this is exactly what took place during the first weekend in December at Indiana University.

Approximately 25-30 secondary math teachers were posed with the question:

**Are dinosaurs more like birds or reptiles?** A guest speaker from **Montana State University, Dr. Ted Hodgson**, posed this problem to the math teachers.

Ted explained that reptiles generally lay many eggs at a time and in a random pattern, whereas the forerunners to modern birds possessed two working ovaries and laid their eggs in pairs. Patterns in the way dinosaur eggs are laid can suggest an evolutionary link to birds or reptiles. A paired pattern would suggest a link to birds.

Of course, the audience of secondary math teachers asked how can we get dinosaur eggs to test the hypothesis? Sounds great, but we have no dinosaur

eggs lying around. Ted then showed a picture of an actual dinosaur nest containing 22 eggs that was found in central Montana in the 1990's. The picture was all the teachers needed. Many conjectures were made about the egg configuration within the dinosaur nest. As one might think, the eggs within the nest had turned into fossils.

Teachers were instructed to determine whether the eggs in the nest were laid in a random pattern or in pairs. Work teams of two to four teachers were formed to tackle this problem. The eggs in the nest appeared to be paired, but how does one know for sure. As it turns out, mathematics provides an answer.

Deciding on how to test whether the eggs in the nest were truly paired was a major challenge for all of the work groups. Most work groups felt that measuring the distance between pairs of eggs in the nest seemed to be a rational way to go about business. If the total



distance between pairs of eggs was unusually small, it was taken as evidence that the eggs were laid in pairs. On the other hand, if the total paired distances was relatively large, then one cannot conclude that the eggs were paired.

Dr. Hodgson reconvened the teachers later in the morning to hear their ideas for solving the paired-egg problem and share the conclusions of Montana State University scientists. The evidence points toward a paired pattern of eggs, which indicates that dinosaurs are more like birds than they are "terrible lizards."

## Indiana Mathematics Initiative

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### IMI Events & Dates

- Middle School Liaison Teachers
- Feb. 6-7 (Indianapolis)
  - March 20 (Indianapolis)
  - April 30-May 1 (Indpls.)

- Math Modeling Sessions
- Feb. 6-7 (Indianapolis)
  - April 30-May 1 (Indpls.)
  - June 13-25 (Bloomington)

- Grade 2 & 5 Teacher Leaders
- April 30-May 1 (Indpls.)

- Grade 3 Follow-Up #3 Sessions
- Feb. 24-25 (Indianapolis)
  - March 2-3 (Merrillville)

- Grade 4 Follow-Up #2 Sessions
- Feb. 25-26 (Indianapolis)
  - March 3-4 (Merrillville)

- Gr 2, 3, 4, 5 Summer Session
- June 28 (Indianapolis)
  - July 26 (Merrillville)

- PreK, K, 1st Summer Session
- June 29-July 1 (Indpls)
  - July 27-29 (Merrillville)

- Administrator Awareness Workshop Session #3  
4-8 p.m. with dinner provided.
- Feb. 25 (Indianapolis)
  - March 3 (Merrillville)

Note:

The Indianapolis sessions will be held at the Sheraton Hotel, Keystone at the Crossing.

The Merrillville sessions will be housed at the Radisson Star Plaza Hotel.

# Grade 2 and Grade 5 Select Cadre Teacher Leaders Collaborate

On Saturday, January 10, 2004

seventeen grade 2 and grade 5 teachers met at the Sheraton Hotel in Indianapolis. This select group of talented teachers brainstormed many concerns associated with mentoring and leading teacher meetings at the district level. Leading teacher meetings is a very important segment of the IMI mission. Building the teaching capacity of teachers is another major objective of the project.

The teachers discussed the importance of receiving support from district coordinators and school administrators. Many indicated that they are getting this support and appreciate the project involvement of their district's

leaders.

Getting fellow teachers to examine instructional strategies is a major concern for these teacher leaders to address. Some teachers seem to be reluctant to try new methodologies and strategies in their classrooms. Teaching a spiraling curriculum such as Everyday Math requires following the prescribed pace and procedures.

The real challenge for most teachers seems to be not teaching for 100% mastery the first time through the material. Using multiple assessment techniques, emphasizing mental arithmetic, and infusing games as a learning strategy are a few of the other major obstacles facing our pilot teachers.

Even with these obstacles, many success stories were shared by the teachers from our 9 participating districts. This group of leaders will continue to meet and seek ways to promote sound math education in our Indiana schools.



## ISTEP+ Scores Hit the Schools

The results of grades 3, 6, 8, and 10 ISTEP+ testing were sent to schools in early December. The other off-grade testing scores will be sent to schools later in the school year.

ISTEP+ testing results will be published in many local Indiana newspapers for public review. Using ISTEP+ testing data to improve student achievement is a very important process used by most school districts. The state of Indiana provides a variety of data re-

ports for schools to examine and use to determine students' academic strengths and weaknesses.

The applied skills report reflects the point values of questions in that category and how those problems connect with other content standards (i.e., number sense, computation, etc.)

The applied skills student answer booklets are returned to schools for future curricular planning. These "image papers" are a great source of information

for teachers to use when determining teaching strategies to improve student achievement.



## Additional In-Services Offered to School Administrators

IMI school administrators will have the opportunity to attend a third in-service focusing on "How to Support and Improve Mathematics Education in Your School." As teachers begin using different instructional strategies in a standards-based mathematics curriculum, administrators need to be aware of new teaching techniques and classroom activities. Administrators also need to learn ways to support teachers

who implement these new strategies.

The upcoming administrator awareness sessions are scheduled for Wednesday, February 25 in Indianapolis and Wednesday, March 3 in Merrillville. At these sessions administrators will be asked to do some troubleshooting activities. Two of the topics to be examined are: What is the role of practice and drill in instruction?

and, When should students master ba-

sic computational skills? Other pertinent topics of this nature will also be presented for discussion during these sessions.

