Encouraging Students to Demonstrate the Standards for Mathematical Practices

Saturday, October 22, 2011
East Butler Public Schools
District Characteristics

- Rural School District
  - Small communities of Brainard, Dwight, Prague, Loma, Abie, Bruno, Bee, and a few others
  - Farming families and commuters

- NSAA Class C-2 school district

- Three K-6 elementary centers
  - Dwight(48), Prague(19) and Brainard(102) - preschool

- 7-12 building in Brainard (170)

- 339 Total students
East Butler Educational Centers

Brainard

Dwight

Prague
Demonstrating Standards for Mathematical Practices

- **Kathy Bohac**
  - 5th and 6th grade mathematics teacher at Brainard Elementary
  - 20th year teaching upper elementary students
  - Graduate of the 4th cohort of Math in the Middle
  - Masters in Special Education - Behavior Disorder

- **Doug Glasshoff**
  - 7th through 12th grade mathematics teacher at High School in Brainard
  - 11th year teaching junior high and high school students
  - Graduate of the 1st cohort of Math in the Middle
  - Graduate of the Nebraska Assessment Cohort (2003)
Mathematics Textbooks

- 5th and 6th grades
  - Mathematics: The Path to Math Success!
    - Silver, Burdett and Ginn

- 7th grade
  - Houghton Mifflin Mathematics Structure and Method Course 1
    - Dolciani, Sorgenfrey and Graham

- 8th grade
  - Houghton Mifflin Mathematics Structure and Method Course 2
    - Dolciani, Sorgenfrey and Graham
  - Houghton Mifflin Algebra Structure and Method Course 1
    - Brown, Dolciani, Sorgenfrey and Cole
5th and 6th Grade Math Classes

- Traditional approach to lessons
  - Reading and discussing lesson and objectives
  - Practice exercises led by students and teachers

- Problems of the day
  - Addresses the need for problem solving skills
  - “Habits of Mind” type problems
  - Presented by student volunteer - Promethean Boards
  - Others present if they solved in a “different way”
Problem of the Day Examples
99 Remainder 98

QuickTime™ and a DV/DVCPRO - NTSC decompressor are needed to see this picture.
Problem of the Day Examples
Fence Posts

QuickTime™ and a DV/DVCPRO - NTSC decompressor are needed to see this picture.
Problem of the Day Examples
5, 10, 20 Chart

QuickTime™ and a
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Problem of the Day Examples
28 Steps

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2010 NeSA Mathematics Testing

- **5th grade**
  - District: 72% meets/exceeds the standards (107 ave. scale score)
  - State: 66% meets/exceeds the standards (103 ave. scale score)

- **6th grade**
  - District: 71% meets/exceeds the standards (105 ave. scale score)
  - State: 63% meets/exceeds the standards (100 ave. scale score)

- **7th Grade**
  - District: 80% meets/exceeds the standards (109 ave. scale score)
  - State: 61% meets/exceeds the standards (99 ave. scale score)

- **8th Grade**
  - District: 66% meets/exceeds the standards (102 ave. scale score)
  - State: 60% meets/exceeds the standards (98 ave. scale score)
Question and Answer