


RUSMP Summer Campus Program
Colloquium
June 18, 2003

A decorative horizontal bar consisting of a series of vertical rectangular segments in various colors including black, blue, light blue, teal, yellow, and dark blue, arranged in a slightly wavy pattern.

The Many Hats of a Mathematics
Teacher
Marla Stanley



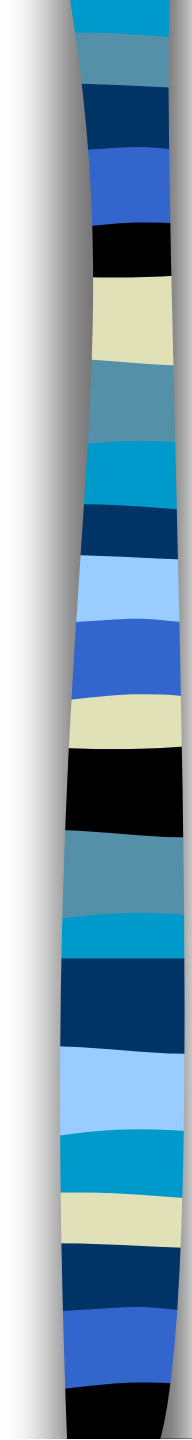
About Me

- I am recovering “math phobic.”
- Since 1989, I am secure and math empowered.



How I gained math empowerment

- The Rice University School Mathematics Project



The First Hat: Dinosaur

Old ways are not for the
MTV generation.

INSTEAD:

- Math must be engaging.
- Math must be about problem solving.
- Learn to embrace change; it will happen.



The Second Hat: Wizard

Magic is happening in math.

- You must be a wizard to “cover” all the topics in math.
- NAG MD meets CPR.



Content Standards

- Number and Operation
- Algebra
- Geometry
- Measurement
- Data Analysis and Probability

The “Nag Doctors” NAG MD



Process Standards

- Communication
- Connections
- Problem Solving
- Reason and Proof
- Representation

The CPRs for your classroom



The Third Hat: Timekeeper/manager Time flies-maximize it.

- Teach across the curriculum, write in math, do math in reading.
- Expository reading is needed on TAKS.
- Don't waste time re-teaching same way-
-using old methods or favorite units.



The Fourth Hat: Elephant

Get your students to remember
as you do

- Do basic facts, but in context-- out of context is useless.
- Match facts with concrete/pictorial representations.



Elephant (cont.)

- Learn facts in new ways- acknowledge different learning styles; make learning student-centered.
- $6 \times 9 = 54$, 456 as $4 + 5 = 9 \times 6 = 54$
- $7 \times 8 = 56$, 5678 as $56 = 7 \times 8$
- Doubling $6 \times 18 =$, $1 \times 18 = 18$, $2 \times 18 = 36$,
 $4 \times 18 = 72$ $2 + 4 = 6$, $36 + 72 = 108$



The Fifth Hat: Card

You've got to take
some chances.

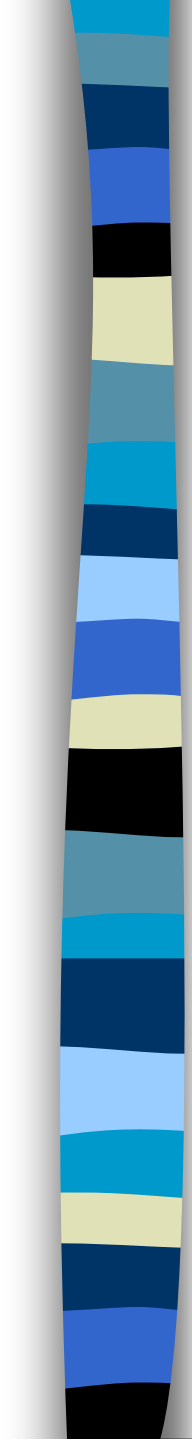
- Teachers are chance takers in front of kids and parents.
- Probability of students learning is greater when students are engaged and constructing their own ideas about mathematics.



The Sixth Hat: NASA

Teachers are futurists.

- Invest in future needs of students.
- 80% of jobs in 2020 do not exist today.
- Jobs will require math and problem-solving skills.



Testimony before Congress: “Saving Lives and Saving Money” 6/2/03

- “Aside from an attack with a WMD by terrorists, the next greatest threat to the U.S. is the failure to teach math and science. The government not continuing to support progress in this area is akin to not addressing homeland security. In the next 20 years, the greatest threat to the U.S. comes from lack of knowledge in math and science and not from war.”



The Final Hat: Top Hat

Be a magician and
direct a 3-ring circus.

- Teach- NAG MD > CPR
- Remediate
- Assess
- Challenge
- Enlighten
- Empower