When our students come to us:

don't you know that
math sucks?

If necessity is the mother of invention
Then I'd like to kill the guy who invented this
The numbers come together in some kind of 3rd dimension
A regular algebraic bliss.
Let's start with something simple
Like one and one ain't three
And two plus two will never get you five
There's fractions in my subtraction
And X don't equal Y
But my homework is bound to multiply
Math sucks (math sucks)
Math sucks (math sucks)
I'd like to burn this textbook, I hate this stuff so much!
Math sucks (math sucks)
Math sucks (math sucks)
Sometimes I think that I don't know that much--
But math sucks!
I got so bored with my homework
I turned on the T.V.
The beauty contest winners were all smiling through their teeth
They asked the new Miss America "Hey babe, can you add up all those bucks?"
She looked puzzled then just said, "Math Sucks!"
Math sucks (math sucks)
Math sucks (math sucks)
You don't even have to spell it, all you have to do is yell it
Math sucks (math sucks)
Math sucks (math sucks)
Sometimes I think that I don't know that much--
But math sucks!
Geometry, trigonometry, and if that don't tax your brain
There are numbers too big to be named (too big to be named)
Numerical precision is a science with a mission
And I think it's gonna drive me insane
Parents fighting with their children and the Congress can't agree,
Teachers and their students are all jousting constantly
Management and labor keep rattling old sabers,
Quacking like those Peabody ducks
Math sucks (quack quack)
Math sucks (quack quack)
You don't even have to spell it, all you have to do is yell it!
Math sucks (math sucks)
Math sucks (math sucks)
Sometimes I think that I don't know that much--
But math sucks!

Why do we have this class?

Teachers must be able to do more than demonstrate remembered procedures. They must be able to select problems that anticipate the issues their students will next confront, then assess whether what the children make of those problems advances the mathematical agenda. Such skills require much deeper understanding of number and operation than many teachers now hold. MET report

Teachers need to become familiar with the pleasures of figuring things out, as well as with the concomitant experiences of confusion and frustration, tolerating their discomfort long enough for things to fall into place. If teachers never learn what this experience feels like, they won't have the gumption to allow their students to go through it either.

CBMS vol. 11

Students who have been taught to play with problems, patterns and connections approach mathematics very differently from students who have been taught that there is one right way to solve a problem, the teachers and the textbooks know what it is and it is the students' job to listen and find out.

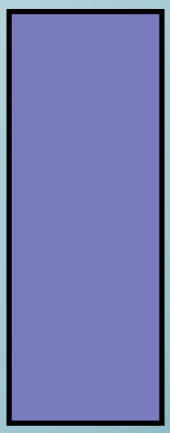
MET report

Evaluate the class.

What does a grade mean?

What goes into a grade?

- punctuality
- presence
- participation
- quality of work
- correctness of work
- thought behind work
- thoughtfulness
- reflection
- scores
- interest
- enthusiasm
- originality
- attitude



541 A
514
474
474
450
435
423
422
392
264 C

Sample:

What's fun about math?

YOUR AGE BY CHOCOLATE MATH

Don't tell me your age

YOUR AGE BY CHOCOLATE MATH

It takes less than a minute .
Work this out as you read .
Be sure you don't read the bottom until you've worked it out!

1. First of all, pick the number of times a week that you would like to have chocolate (more tha but less than 10)

2. Multiply this number by 2

3. Add 5

4. Multiply it by 50 -- I'll wait while you get the calculator

5. If you have already had your birthday this year add 1760 ..
If you haven't, add 1759..

6... Now subtract the four digit year that you were born.

You should have a three digit number

The first digit of this was your original number
(i.e., how many times you want to have chocolate each week).

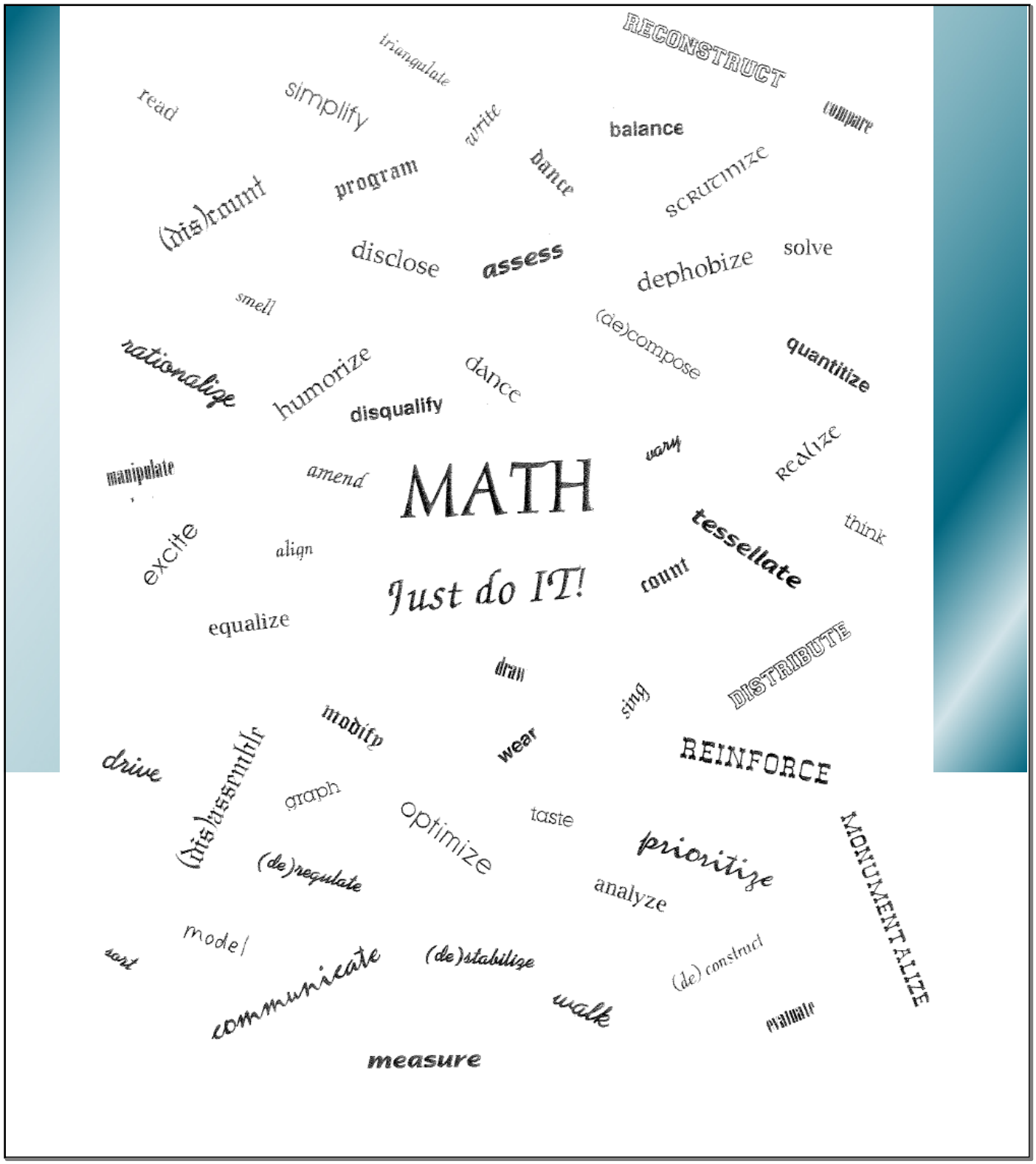
The next two numbers are

YOUR AGE! (Oh YES, it is!!!!!)

THIS IS THE ONLY YEAR (2010) IT WILL EVER WORK, SO SPREAD IT AROUND WHI LASTS.

Chocolate Calculator.

What did we set out to do?


RECONSTRUCT
triangulate
read
simplify
write
balance
compare
dance
program
scrutinize
(dis)count
disclose
assess
dephobize
solve
smell
(de)compose
quantitize
rationalize
humorize
dance
disqualify
vary
realize
manipulate
amend
MATH
tessellate
think
excite
align
Just do IT!
count
equalize
draw
sing
DISTRIBUTE
modify
drive
wear
REINFORCE
(dis)assemble
graph
optimize
taste
prioritize
MONUMENTALIZE
(de)regulate
analyze
model
communicate
(de)stabilize
(de) construct
walk
measure

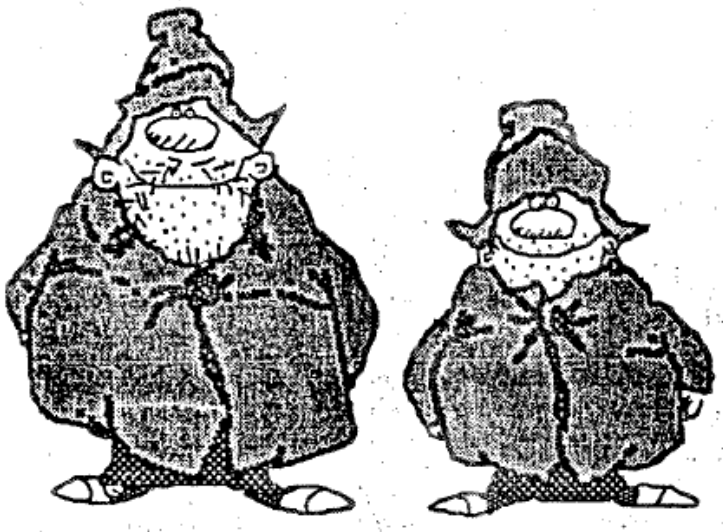
Terrific Teaching Techniques for MATH

A day in the library
Accept "close" answers, encourage further thought
Adequate time
Aerobics (function aerobics, angle aerobics, etc)
Algebra tiles
Allowing questions
Alternative assessment
Authentic tasks
Back-to-back quizzes
Before-math, AfterMath
Begin with attention grabber
Build things (bridges, polyhedra, etc)
Celebrate math month, pi day, metric day
Chalkboard drawings
Challenging the students
Class census
Communication
Connections to real world
Cooperative learning
Creative activities, making booklets
Cut and paste
Dancing math
Data from students to model
Decimal the halls with powers, by golly
Deriving formulas through manipulation
Describe the solution orally
Design a math T-shirt
Discovery
Discussion vs. lecture
Draw
Enthusiasm and excitement
Flexibility
Food
Fractals
Games (Math Jeopardy, relay races, who wants to be a M
Gelboards
Geoboards
Getting out of the desk
Graphing calculators
Greet them at the door
Guide on the side, not Sage on the stage
Hands on
High energy
Higher level questioning
Holiday math
Human conics, human coordinates
Humorous demonstration (dress in the wrong order to il
I have, Who has?
I spy metrics
Immediate feedback
Individual white boards for quick assessment
Inquiry based activities
Internet Field trip
Jokes and funny stories
Learning centers in the room (4 different areas)
Learning log
Make a poster
Math cartoons
Memory techniques

Modeling
Modeling a situation numerically, graphically, algebraically and verbally
Mold it with clay
Move!
Multiple learning styles
Music
Newspapers as source of data
No book math day
No paper, no pencil, no book, no calculator day
Object lessons
Open ended questions
Oral assessment
Pass around problem
Peer teaching
Pets
Picture books
Play
Poetry
Portfolio
Poster assessment
Problem of the day (week, month, etc)
Programming the calculator
Projects
Puzzles
Reading about math
Real problem solving
Relating math to life
Relaxed, friendly attitude
Reward quiz
Riddles
Scavenger hunt
Silence (teach an entire lesson without saying a word)
Silent student response, (student holds up correct number of
Songs
Stand up at the buzzer
Standards based instruction
Step by step logical list
Story problems
Student led discussions
Student reflection
Students assess the teacher
Students invent the quiz on the spot (six students ad-lib ques
Students involved
Teacher as facilitator
Teaser on the board or hanging on the door
Tessellate!
Use of technology
Use overheads instead of writing on the board
Use students' names in examples
Using bodies to model
Using manipulatives
Variety in assessment
Variety in methods of explaining
Venn Diagrams
Videos used wisely
Virtual Field Trip day
Visual Aides
Visualization
Web diagrams

We have not succeeded
in answering all of our problems.

Indeed, we often feel
we have not completely
answered any of them.



The answers we have found
only serve to raise a whole set of
new questions. In some ways
we feel we are as confused as
ever, but we believe we are
confused on a much higher level,
and about more important things.

I hope that posterity will judge me kindly, not only as to the things which I have explained, but also as to those which I have intentionally omitted so as to leave to others the pleasure of discovery.

Rene Descartes, 1637

When our students leave us:

That's Mathematics!

1 That's Mathematics by Tom Lehrer

Counting sheep
When you're trying to sleep,
Being fair
When there's something to share,
Being neat
When you're folding a sheet,
That's mathematics!
When a ball
Bounces off of a wall,
When you cook
From a recipe book,
When you know
How much money you owe,
That's mathematics!
How much gold can you hold in an elephant's ear?
When it's noon on the moon, then what time is it here?
If you could count for a year, would you get to infinity,
Or somewhere in that vicinity?
When you choose
How much postage to use,
When you know
What's the chance it will snow,
When you bet
And you end up in debt,
Oh try as you may,
You just can't get away
From mathematics!

Andrew Wiles gently smiles,
Does his thing, and voila!
Q.E.D., we agree,
And we all shout hurrah!
As he confirms what Fermat
Jotted down in that margin,
Which could've used some
enlargin'.

Tap your feet,
Keepin' time to a beat,
Of a song
While you're singing along,
Harmonize
With the rest of the guys,
Yes, try as you may,
You just can't get away
From mathematics!