

## Math-Ese Workshop

May 30, 2006

### Vocabulary Development & Assimilation Strategies

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## What's the Problem??

*A television personality made the following comments about NBA basketball player John Stockton:*

"Who is more unique than a John Stockton? A 40-year-old point guard who gives 110% every night! Most 40-year-olds are sitting in their rocking chairs with a cold one right now—not out on the court setting countless back screens on guys twice their sizes and half their ages...he's one of the greatest players in the history of the game."

## Morphology and Etymology to Improve Understanding

- ◆ Word Histories

## Things to Think About...

- ◆ Why do students have difficulty learning mathematics vocabulary?
- ◆ What are the best ways to develop students' understanding of mathematics terminology?

## Negotiating the Language of Mathematics

- ◆ Common English words with special math definitions
- ◆ Technical mathematical words
- ◆ Need to understand concepts embedded within other concepts
- ◆ Varied use and large number of math symbols, graphics and systems
- ◆ Conceptual density of mathematics texts

## Structural Analysis

- ◆ Word Study

## Vocabulary List

- ◆ Taxonomy by grade levels
- ◆ Who teaches what and when

## Verbs and Symbols

- ◆ What is the action?

## Nouns and Concepts

- ◆ What is the meaning in specific terms?

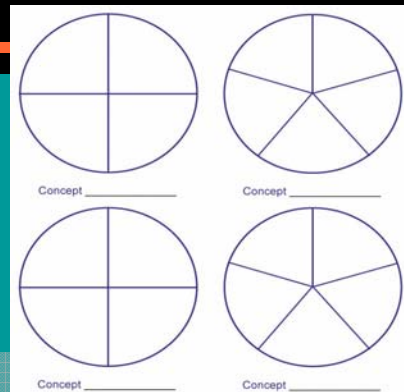
## Vocabulary Development Strategies

- ◆ Use these with the kiddos!
- ◆ Gets the students thinking about learning math vocabulary
- ◆ Students are ACTIVELY building and assimilating math vocabulary

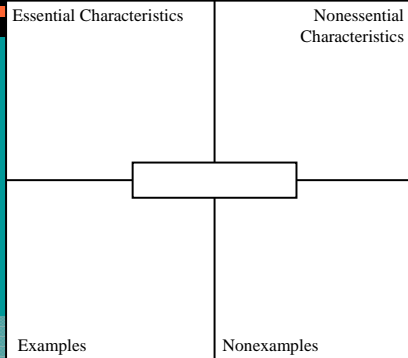
## Some Math Vocabulary Development Strategies:

- ◆ Concept Circles\*\*
- ◆ Concept Definition Mapping
- ◆ Frayer Model\*\*
- ◆ List-Group-Label
- ◆ Semantic Feature Analysis\*\*
- ◆ Semantic Mapping
- ◆ Taxonomies\*\*
- ◆ Student VOC Strategy
- ◆ Verbal & Visual Word Association\*\*
- ◆ Word/Number Sort
- ◆ Concentration
- ◆ Cue Cards\*\*
- ◆ Number Cubes
- ◆ Keeping a Journal
- ◆ Venn Diagrams

## Concept Circles



## Frayer Model

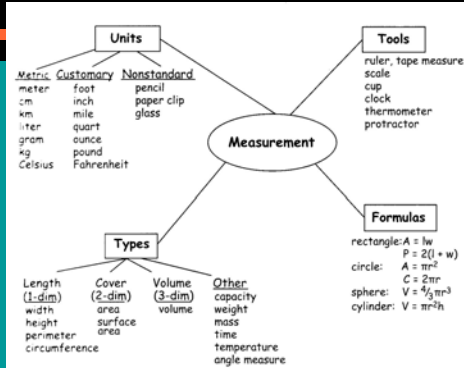


## Semantic Feature Analysis

Category:

Terms	Features/Properties					

## Semantic Mapping Example



## Taxonomies

Algebra

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A	arithmetic, attributes, arrays
B	binomial
C	coefficients
D	distributive laws
E	equal, even
F	factor
G	grid
H	
I	intervals, integers
J	
K	
L	
M	minus, multiplier
N	numbers, number line
O	order, odd
P	plus, positive, negative, points, polynomials, parentheses
Q	
R	rules
S	sequence, same, symbols, sum
T	
U	units
V	
W	
X	x
Y	y
Z	zero

## Verbal & Visual Word Association

Vocabulary term:	Visual Representation:
Definition:	Personal Association:

## Cue Cards

Set of cards for each student:

$n + 7$	$7 - n$	$n/7$	$7/n$
$n - 7$	$7n$	$n > 7$	$n < 7$

Cue cards:

A number $n$ is less than 7	7 more than a number $n$
A number $n$ decreased by 7	The sum of a number $n$ and 7
7 is less than a number $n$	The difference between $n$ and 7
7 divided by a number $n$	The quotient of a number $n$ and 7
7 subtracted from a number $n$	7 less than a number $n$
The product of a number $n$ and 7	A number $n$ increased by 7
7 times a number $n$	7 is greater than a number $n$

## Others? Let's Brainstorm!

## 100 NO EXCUSE LIST of Math Terms