

Getting to Know the CMT₄

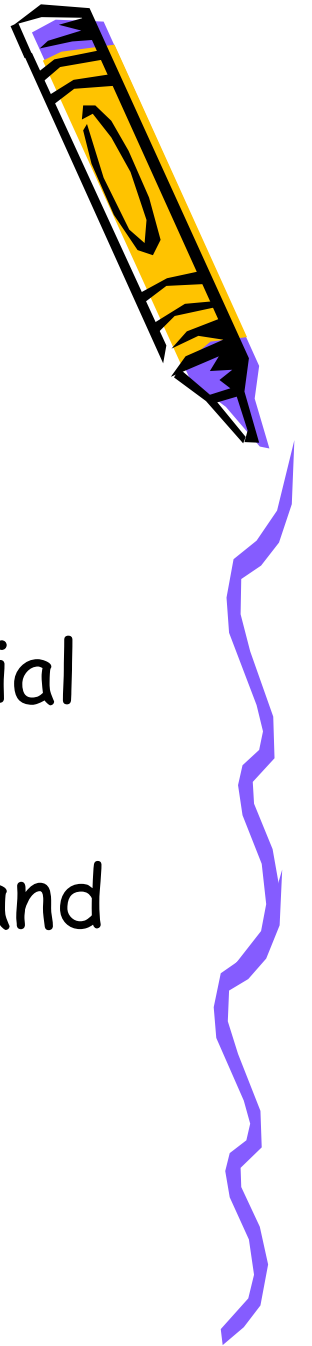
CAS 2006

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Today we will:

- Review available CSDE CMT material
- Examine scored student work
- Discuss instructional implications and strategies



Organization of Framework

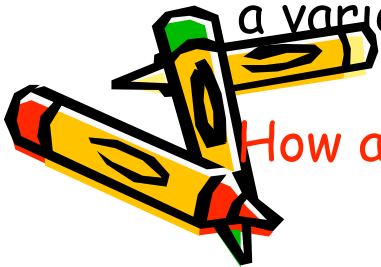
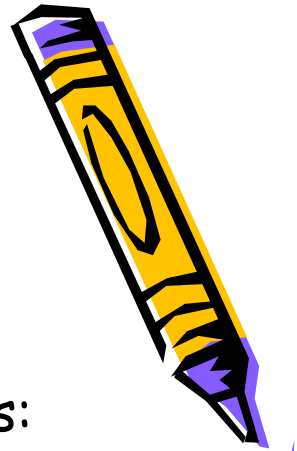
Consists of four **Content Standards** with guiding questions:
(p. 5)

1. **Algebraic Reasoning: Patterns and Functions** - Patterns and functional relationships can be represented and analyzed using a variety of strategies, tools and technologies.

How do patterns and functions help us describe data and physical phenomena and solve a variety of problems?

2. **Numerical and Proportional Reasoning** - Quantitative relationships can be expressed numerically in multiple ways in order to make connections and simplify calculations using a variety of strategies, tools and technologies.

How are quantitative relationships represented by numbers?



Organization of Framework

Consists of four **Content Standards** with guiding questions:

3. Geometry and Measurement -

Shapes and structures can be analyzed, visualized, measured and transformed using a variety of strategies, tools and technologies.

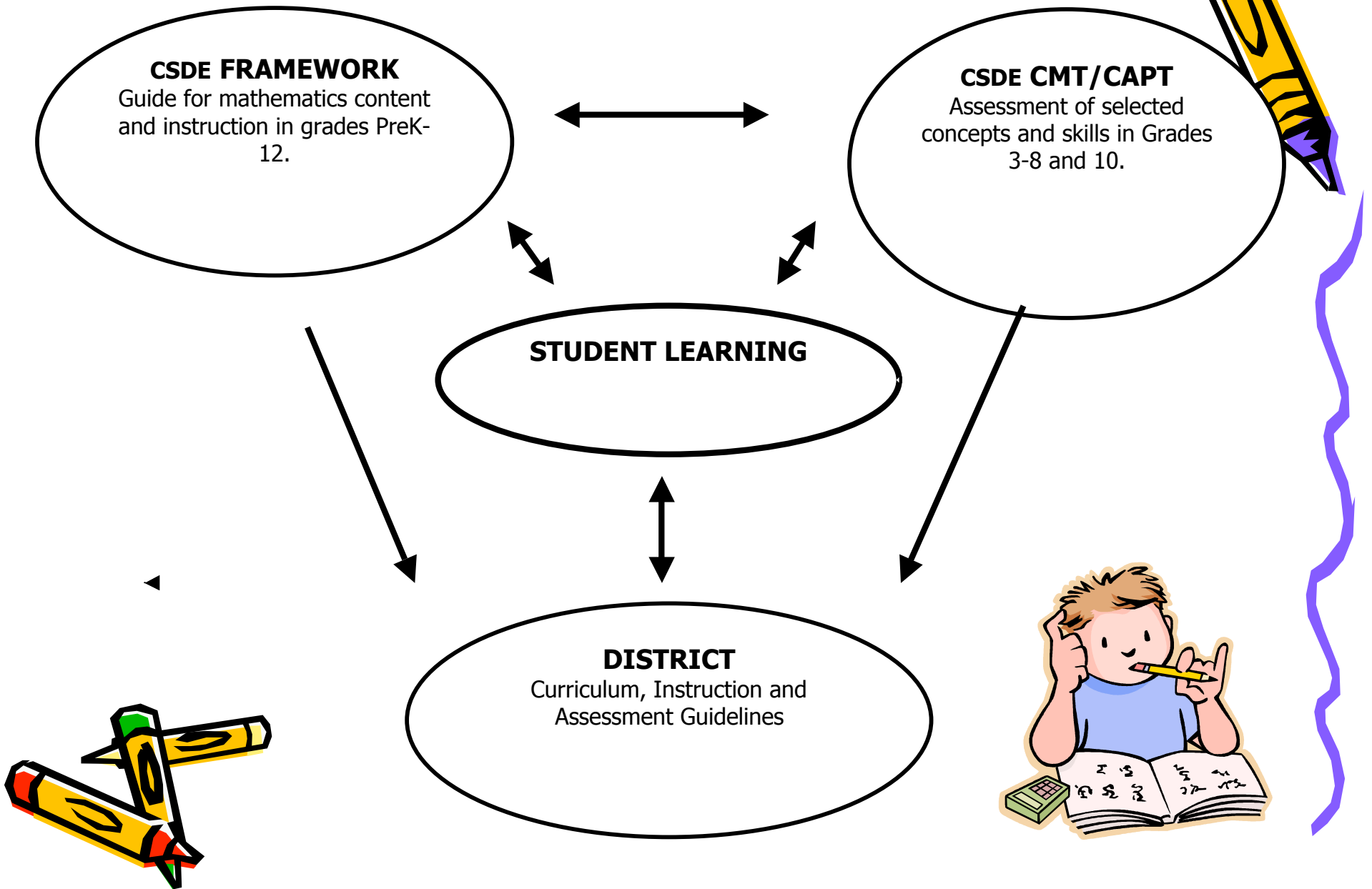
How do geometric relationships and measurements help us to solve problems and make sense of our world?

4. Working with Data: Probability and Statistics - Data can be analyzed to make informed decisions using a variety of strategies, tools and technologies.

How can collecting, organizing and displaying data help us analyze information and make reasonable and informed decisions?



The Mathematics Framework/CMT Connection



Connecting the Framework to the CMT AND CAPT

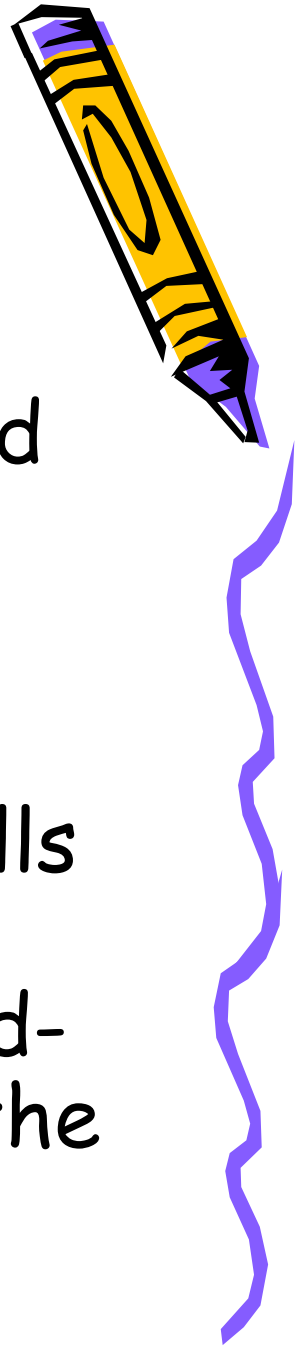
The Framework outlines:

- what concepts and skills should be taught
- how and to what extent the concepts and skills should be taught at the grade level indicated



Connecting the Framework to the CMT and CAPT

- The CMT and CAPT assess selected skills and concepts at the grade levels indicated
- The mathematics concepts and skills assessed on the CMT and CAPT reflect what students have learned—not just at the grade levels when the tests are administered



Reporting Format

25 content strands organized by the four standards:

- numerical and proportional reasoning;
- geometry and measurement;
- working with data: probability and statistics; and
- algebraic reasoning: patterns and functions.

The CMT scores will continue to be reported by strand.



CMT Changes Generation 4

- For each grade, 3-8.
- Spring testing beginning 2006.
- There are no separate answer booklets.
- Students can underline and highlight in booklets.
- There are no grid-in items for Grades 3 and 4.
- Grade-appropriate rulers are provided.
- A formula sheet is provided for Grade 8, other grades should know formulae and conversions.
- Number of multiple-choice items decreases while constructed-response items increases as the grade level increases.



Rulers For Use During The Connecticut Mastery Test

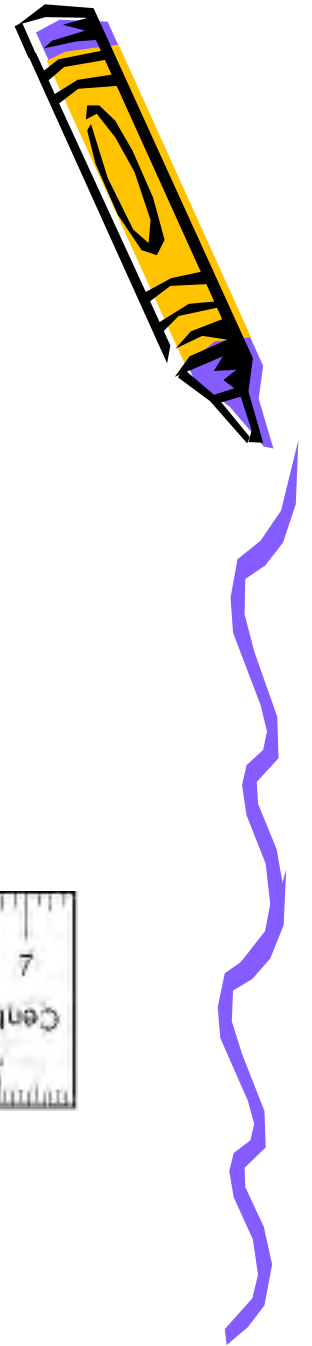


Grades 3 & 4



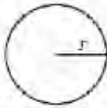



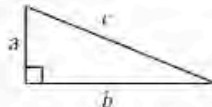
Grades 5, 6, 7 & 8

CMT Handbook (p. 2)



Grade 8 Formula Sheet CMT Handbook (p. 3)



CMT Formula Chart			
Circumference	circle	$C = 2\pi r$	
		$\pi = \pi$	Use 3.14 OR $\frac{22}{7}$
Area	triangle	$A = \frac{1}{2}bh$	
	circle	$A = \pi r^2$	
Volume	cylinder	$V = \pi r^2 h$	
Pythagorean Theorem	right triangle	$a^2 + b^2 = c^2$	
Measurement Conversion			
Customary Length	1 mile = 5,280 feet		
Customary Volume	1 gallon = 4 quarts 1 quart = 2 pints 1 pint = 2 cups 1 cup = 8 ounces		
Customary Weight and Mass	1 ton = 2,000 pounds 1 pound = 16 ounces		
Time	1 year = 365 days 1 year = 52 weeks		

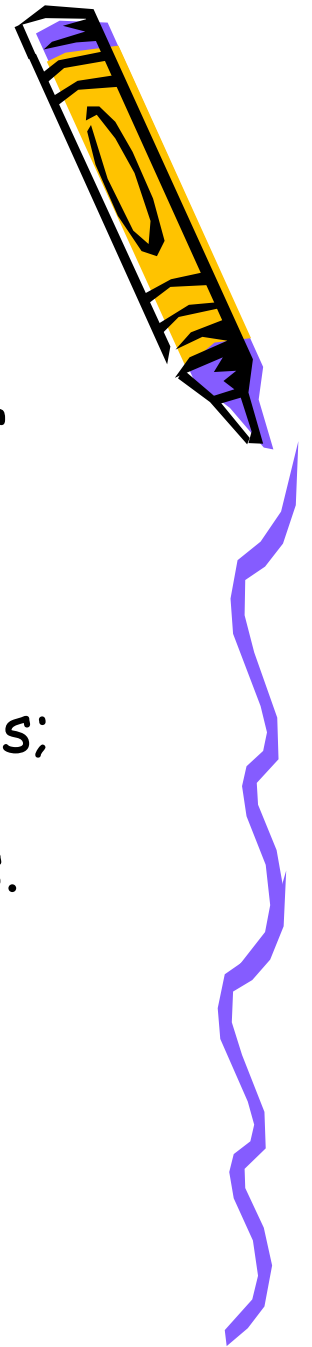


Reporting Format

25 content strands organized by the four standards:

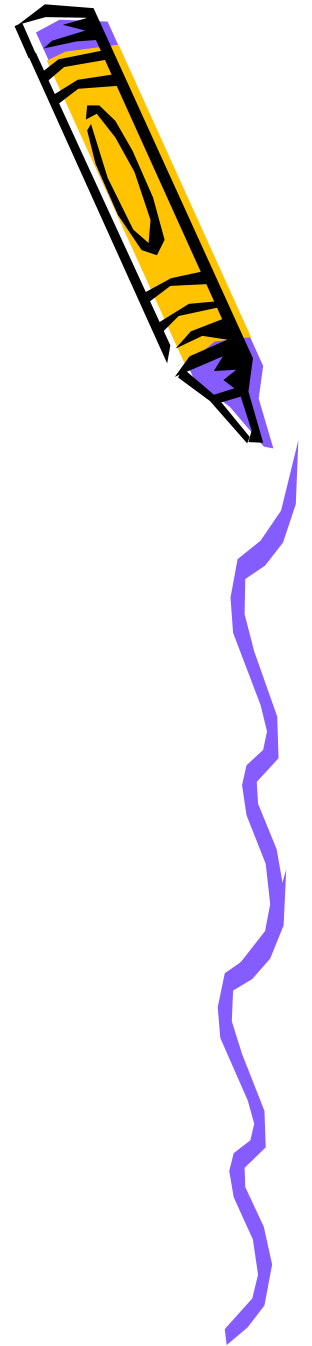
- numerical and proportional reasoning;
- geometry and measurement;
- working with data: probability and statistics; and
- algebraic reasoning: patterns and functions.

The CMT scores will continue to be reported by strand.



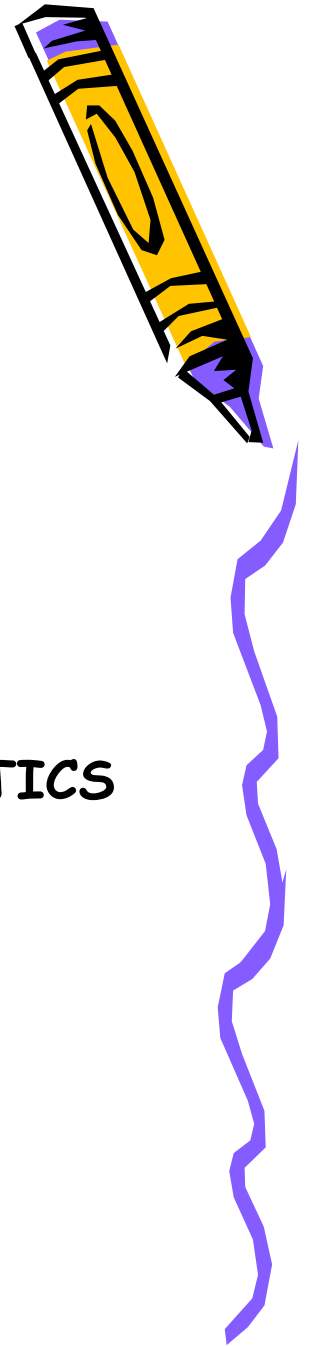
ORGANIZATION OF CMT STRANDS BY STANDARD

- **NUMERICAL and PROPORTIONAL REASONING**
 - 1. Place Value
 - 2. Pictorial Representations of Numbers
 - 3. Equivalent Fractions, Decimals and Percents
 - 4. Order, Magnitude and Rounding of Numbers
 - 5. Models for Operations
 - 6. Basic Facts
 - 7. Computation with Whole Numbers and Decimals
 - 8. Computation with Fractions
 - 9. Solve Word Problems
 - 10. Numerical Estimation Strategies
 - 11. Estimating Solutions to Problems
 - 12. Ratios and Proportions
 - 13. Computation with Percents



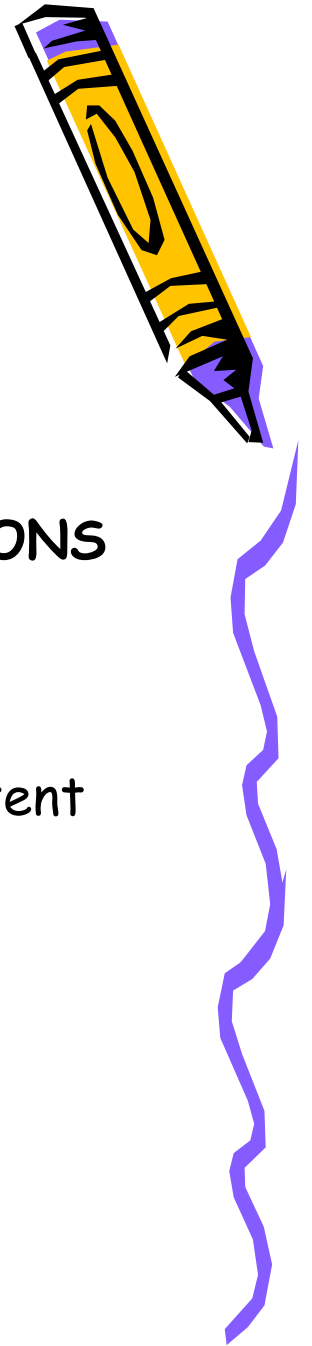
ORGANIZATION OF CMT STRANDS BY STANDARD

- **GEOMETRY and MEASUREMENT**
 - 14. Time
 - 15. Approximating Measures
 - 16. Customary and Metric Measures
 - 17. Geometric Shapes and Properties
 - 18. Spatial Relationships
- **WORKING with DATA: PROBABILITY and STATISTICS**
 - 19. Tables, Graphs and Charts
 - 20. Statistics and Data Analysis
 - 21. Probability
 - 24. Classification and Logical Reasoning



ORGANIZATION OF CMT STRANDS BY STANDARD

- **ALGEBRAIC REASONING: PATTERNS and FUNCTIONS**
 - 22. Patterns
 - 23. Algebraic Concepts
- **INTEGRATED UNDERSTANDINGS** (May include content from 1 or more of the 4 standards)
 - 25. Mathematical Applications



Preparing students for the Connecticut Mastery Test (CMT)

A sound K-8 mathematics program embeds these strategies into all instructional planning.

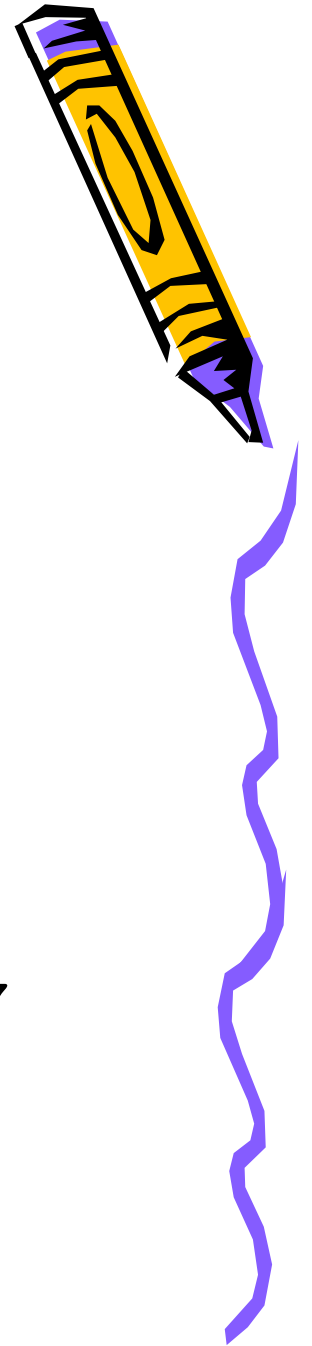
Strategy 1: Asking "Why?"

**Strategy 2: Embed In Context, Present
As A Problem**

CMT Handbook (p. 10)



Sample Lessons and Activities by Standard and Grade Level (p. 15)



- **NUMERICAL and PROPORTIONAL REASONING**
- PreK-2 PageLet's Count to 10 17
- Do It with Dominoes 17
- How Many More Fish? 17
- **Grades 3-5**
- Estimation 17
- Fun With Estimation 17
- Parking at the Mall 17
- **Grades 6-8**
- A Conceptual Model for Solving Percent Problems (5-8) 17
- Shops at the Mall 17
- Developing Number Sense 18



Sample Lesson and Activity Descriptions

NUMERICAL AND PROPORTIONAL REASONING

Let's Count to 10 - Grades PreK-2 -

http://illuminations.nctm.org/index_o.aspx?id=147

Do It with Dominoes - Grades PreK-2 -

http://illuminations.nctm.org/index_o.aspx?id=47



CMT Handbook p. 17



CMT Information

CSDE Mathematics Page -

[http://www.state.ct.us/sde/
dtl/curriculum/currmath.htm](http://www.state.ct.us/sde/dtl/curriculum/currmath.htm)

