Number and Computation – The student uses numerical and computational concepts and procedures in a variety of situations.

Benchmark 3: Estimation – The student uses computational estimation with whole numbers, fractions, decimals, and money in a variety of situations.

Fifth Grade Knowledge Base Indicators	Fifth Grade Application Indicators
The student: 1. estimates whole numbers quantities from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero through hundredths place; and monetary amounts to $10,000 using various computational methods including mental math, paper and pencil, concrete materials, and appropriate technology (2.4.K1a-c) ($). 2. ▲N uses various estimation strategies to estimate whole number quantities from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero through hundredths place; and monetary amounts to $10,000 and explains how various strategies are used (2.4.K1a-c) ($). 3. recognizes and explains the difference between an exact and an approximate answer (2.4.K1a-c). 4. explains the appropriateness of an estimation strategy used and whether the estimate is greater than (overestimate) or less than (underestimate) the exact answer (2.4.K1a).	The student: 1. adjusts original estimate using whole numbers from 0 through 100,000 of a real-world problem based on additional information (a frame of reference) (2.4.A1a) ($), e.g., given a large container of marbles, estimate the quantity of marbles. Then, using a smaller container filled with marbles, count the number of marbles in the smaller container and adjust your original estimate. 2. estimates to check whether or not the result of a real-world problem using whole numbers from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero to tenths place; and monetary amounts to $10,000 is reasonable and makes predictions based on the information (2.4.A1a-c) ($), e.g., at your birthday party, you ate 4 ½ pepperoni pizzas, 3 ¼ cheese pizzas, and 2 ¾ sausage pizzas. On the bill they charged you for 10 pizzas. Is that reasonable? If pizzas cost $6.99 each, about how much should you save for your next birthday party? 3. selects a reasonable magnitude from given quantities based on a real-world problem using whole numbers from 0 through 100,000 and explains the reasonableness of selection (2.4.A1a), e.g., about how many tulips can fit in the flower vase, 2, 10, or 25? The student chooses ten and explains that the vase at home is a jelly jar and either two or ten will fit, but ten looks prettier. 4. ▲ ■ determines if a real-world problem calls for an exact or approximate answer using whole numbers from 0 through 100,000 and performs the appropriate computation using various computational methods including mental math, paper and pencil, concrete materials, and appropriate technology (2.4.A1a) ($).

▲ – Assessed Indicator on the Objective Assessment

■ – Assessed Indicator on the Optional Constructed Response Assessment

N – Noncalculator

($) – Financial Literacy   THESE STANDARDS ARE ALIGNED <u>ONLY</u> TO THE ASSESSMENTS THAT WILL BEGIN DURING THE 2005-06 SCHOOL YEAR.

Module 2   Page 1

Math

Standard 1: Number and Computation   **FIFTH GRADE**

Number and Computation – The student uses numerical and computational concepts and procedures in a variety of situations.

Benchmark 3: Estimation – The student uses computational estimation with whole numbers, fractions, decimals, and money in a variety of situations.

Fifth Grade Knowledge Base Indicators	Fifth Grade Application Indicators
The student: 1. estimates whole numbers quantities from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero through hundredths place; and monetary amounts to $10,000 using various computational methods including mental math, paper and pencil, concrete materials, and appropriate technology (2.4.K1a-c) ($). 2. ▲N uses various estimation strategies to estimate whole number quantities from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero through hundredths place; and monetary amounts to $10,000 and explains how various strategies are used (2.4.K1a-c) ($). 3. recognizes and explains the difference between an exact and an approximate answer (2.4.K1a-c). 4. explains the appropriateness of an estimation strategy used and whether the estimate is greater than (overestimate) or less than (underestimate) the exact answer (2.4.K1a).	The student: 1. adjusts original estimate using whole numbers from 0 through 100,000 of a real-world problem based on additional information (a frame of reference) (2.4.A1a) ($), e.g., given a large container of marbles, estimate the quantity of marbles. Then, using a smaller container filled with marbles, count the number of marbles in the smaller container and adjust your original estimate. 2. estimates to check whether or not the result of a real-world problem using whole numbers from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero to tenths place; and monetary amounts to $10,000 is reasonable and makes predictions based on the information (2.4.A1a-c) ($), e.g., at your birthday party, you ate 4 ½ pepperoni pizzas, 3 ¼ cheese pizzas, and 2 ¾ sausage pizzas. On the bill they charged you for 10 pizzas. Is that reasonable? If pizzas cost $6.99 each, about how much should you save for your next birthday party? 3. selects a reasonable magnitude from given quantities based on a real-world problem using whole numbers from 0 through 100,000 and explains the reasonableness of selection (2.4.A1a), e.g., about how many tulips can fit in the flower vase, 2, 10, or 25? The student chooses ten and explains that the vase at home is a jelly jar and either two or ten will fit, but ten looks prettier. 4. ▲ ■ determines if a real-world problem calls for an exact or approximate answer using whole numbers from 0 through 100,000 and performs the appropriate computation using various computational methods including mental math, paper and pencil, concrete materials, and appropriate technology (2.4.A1a) ($).

Assessed Indicators are marked with a ▲ Delta

5-7
January 31, 2004

▲ – Assessed Indicator on the Objective Assessment
■ – Assessed Indicator on the Optional Constructed Response Assessment
N – Noncalculator
($) – Financial Literacy   THESE STANDARDS ARE ALIGNED ONLY TO THE ASSESSMENTS THAT WILL BEGIN DURING THE 2005-06 SCHOOL YEAR.

Module 2   Page 2   Math

Number and Computation – The student uses numerical and computational concepts and procedures in a variety of situations.

Benchmark 3: Estimation – The student uses computational estimation with whole numbers, fractions, decimals, and money in a variety of situations.

Fifth Grade Knowledge Base Indicators	Fifth Grade Application Indicators
The student:	The student:
1. estimates whole numbers quantities from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero through hundredths place; and monetary amounts to $10,000 using various computational methods including mental math, paper and pencil, concrete materials, and appropriate technology (2.4.K1a-c) ($).	1. adjusts original estimate using whole numbers from 0 through 100,000 of a real-world problem based on additional information (a frame of reference) (2.4.A1a) ($), e.g., given a large container of marbles, estimate the quantity of marbles. Then, using a smaller container filled with marbles, count the number of marbles in the smaller container and adjust your original estimate.
2. ▲N uses various estimation strategies to estimate whole number quantities from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero through hundredths place; and monetary amounts to $10,000 and explains how various strategies are used (2.4.K1a-c) ($).	2. estimates to check whether or not the result of a real-world problem using whole numbers from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero to tenths place; and monetary amounts to $10,000 is reasonable and makes predictions based on the information (2.4.A1a-c) ($), e.g., at your birthday party, you ate 4 ½ pepperoni pizzas, 3 ¼ cheese pizzas, and 2 ¾ sausage pizzas. On the bill they charged you for 10 pizzas. Is that reasonable? If pizzas cost $6.99 each, about how much should you save for your next birthday party?
3. recognizes and explains the difference between an exact and an approximate answer (2.4.K1a-c).	3. selects a reasonable magnitude from given quantities based on a real-world problem using whole numbers from 0 through 100,000 and explains the reasonableness of selection (2.4.A1a), e.g., about how many tulips can fit in the flower vase, 2, 10, or 25? The student chooses ten and explains that the vase at home is a jelly jar and either two or ten will fit, but ten looks prettier.
4. explains the appropriateness of an estimation strategy used and whether the estimate is greater than (overestimate) or less than (underestimate) the exact answer (2.4.K1a).	4. ▲■ determines if a real-world problem calls for an exact or approximate answer using whole numbers from 0 through 100,000 and performs the appropriate computation using various computational methods including mental math, paper and pencil, concrete materials, and appropriate technology (2.4.A1a) ($).

Constructed Response Assessment Indicators are marked with a **Square ■**

▲ – Assessed Indicator on the Objective Assessment
■ – Assessed Indicator on the Optional Constructed Response Assessment
N – Noncalculator
($) – Financial Literacy　　　THESE STANDARDS ARE ALIGNED ONLY TO THE ASSESSMENTS THAT WILL BEGIN DURING THE 2005-06 SCHOOL YEAR.

Module 2　Page 3　　　　　　　　　　　　　　**Math**

Standard 1: Number and Computation   **FIFTH GRADE**

Number and Computation – The student uses numerical and computational concepts and procedures in a variety of situations.

Benchmark 3: Estimation – The student uses computational estimation with whole numbers, fractions, decimals, and money in a variety of situations.

Fifth Grade Knowledge Base Indicators	Fifth Grade Application Indicators
The student:	The student:
1. estimates whole numbers quantities from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero through hundredths place; and monetary amounts to $10,000 using various computational methods including mental math, paper and pencil, concrete materials, and appropriate technology (2.4.K1a-c) ($).	1. adjusts original estimate using whole numbers from 0 through 100,000 of a real-world problem based on additional information (a frame of reference) (2.4.A1a) ($), e.g., given a large container of marbles, estimate the quantity of marbles. Then, using a smaller container filled with marbles, count the number of marbles in the smaller container and adjust your original estimate.
2. ▲N uses various estimation strategies to estimate whole number quantities from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero through hundredths place; and monetary amounts to $10,000 and explains how various strategies are used (2.4.K1a-c) ($).	2. estimates to check whether or not the result of a real-world problem using whole numbers from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero to tenths place; and monetary amounts to $10,000 is reasonable and makes predictions based on the information (2.4.A1a-c) ($), e.g., at your birthday party, you ate 4 ½ pepperoni pizzas, 3 ¼ cheese pizzas, and 2 ¾ sausage pizzas. On the bill they charged you for 10 pizzas. Is that reasonable? If pizzas cost $6.99 each, about how much should you save for your next birthday party?
3. recognizes and explains the difference between an exact and an approximate answer (2.4.K1a-c).	
4. explains the appropriateness of an estimation strategy used and whether the estimate is greater than (overestimate) or less than (underestimate) the exact answer (2.4.K1a).	3. selects a reasonable magnitude from given quantities based on a real-world problem using whole numbers from 0 through 100,000 and explains the reasonableness of selection (2.4.A1a), e.g., about how many tulips can fit in the flower vase, 2, 10, or 25? The student chooses ten and explains that the vase at home is a jelly jar and either two or ten will fit, but ten looks prettier.
	4. ▲ ■ determines if a real-world problem calls for an exact or approximate answer using whole numbers from 0 through 100,000 and performs the appropriate computation using various computational methods including mental math, paper and pencil, concrete materials, and appropriate technology (2.4.A1a) ($).

(N) None
Calculator
Indicator for
Assessment

▲ – Assessed Indicator on the Objective Assessment
■ – Assessed Indicator on the Optional Constructed Response Assessment
N – Noncalculator
($) – Financial Literacy   THESE STANDARDS ARE ALIGNED ONLY TO THE ASSESSMENTS THAT WILL BEGIN DURING THE 2005-06 SCHOOL YEAR.

Module 2   Page 4   **Math**

Standard 1: Number and Computation   **FIFTH GRADE**

Number and Computation – The student uses numerical and computational concepts and procedures in a variety of situations.

Benchmark 3: Estimation – The student uses computational estimation with whole numbers, fractions, decimals, and money in a variety of situations.

Fifth Grade Knowledge Base Indicators	Fifth Grade Application Indicators
The student: 1. estimates whole numbers quantities from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero through hundredths place; and monetary amounts to $10,000 using various computational methods including mental math, paper and pencil, concrete materials, and appropriate technology (2.4.K1a-c) ($). 2. ▲N uses various estimation strategies to estimate whole number quantities from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero through hundredths place; and monetary amounts to $10,000 and explains how various strategies are used (2.4.K1a-c) ($). 3. recognizes and explains the difference between an exact and an approximate answer (2.4.K1a-c). 4. explains the appropriateness of an estimation strategy used and whether the estimate is greater than (overestimate) or less than (underestimate) the exact answer (2.4.K1a).	The student: 1. adjusts original estimate using whole numbers from 0 through 100,000 of a real-world problem based on additional information (a frame of reference) (2.4.A1a) ($), e.g., given a large container of marbles, estimate the quantity of marbles. Then, using a smaller container filled with marbles, count the number of marbles in the smaller container and adjust your original estimate. 2. estimates to check whether or not the result of a real-world problem using whole numbers from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero to tenths place; and monetary amounts to $10,000 is reasonable and makes predictions based on the information (2.4.A1a-c) ($), e.g., at your birthday party, you ate 4 ½ pepperoni pizzas, 3 ¾ cheese pizzas, and 2 ¾ sausage pizzas. On the bill they charged you for 10 pizzas. Is that reasonable? If pizzas cost $6.99 each, about how much should you save for your next birthday party? 3. selects a reasonable magnitude from given quantities based on a real-world problem using whole numbers from 0 through 100,000 and explains the reasonableness of selection (2.4.A1a), e.g., about how many tulips can fit in the flower vase, 2, 10, or 25? The student chooses ten and explains that the vase at home is a jelly jar and either two or ten will fit, but ten looks prettier. 4. ▲ ■ determines if a real-world problem calls for an exact or approximate answer using whole numbers from 0 through 100,000 and performs the appropriate computation using various computational methods including mental math, paper and pencil, concrete materials, and appropriate technology (2.4.A1a) ($).

($) Indicator uses Currency or linked to Financial Literacy Standards

▲ – Assessed Indicator on the Objective Assessment
■ – Assessed Indicator on the Optional Constructed Response Assessment
N – Noncalculator
($) – Financial Literacy   THESE STANDARDS ARE ALIGNED <u>ONLY</u> TO THE ASSESSMENTS THAT WILL BEGIN DURING THE 2005-06 SCHOOL YEAR.

Module 2   Page 5   **Math**

Standard 1: Number and Computation

FIFTH GRADE

Number and Computation – The student uses numerical and computational concepts and procedures in a variety of situations.

Benchmark 3: Estimation – The student uses computational estimation with whole numbers, fractions, decimals, and money in a variety of situations.

Fifth Grade Knowledge Base Indicators	Fifth Grade Application Indicators
The student: 1. estimates whole numbers quantities from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero through hundredths place; and monetary amounts to $10,000 using various computational methods including mental math, paper and pencil, concrete materials, and appropriate technology (2.4.K1a-c) ($). 2. ▲N uses various estimation strategies to estimate whole number quantities from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero through hundredths place; and monetary amounts to $10,000 and explains how various strategies are used (2.4.K1a-c) ($). 3. recognizes and explains the difference between an exact and an approximate answer (2.4.K1a-c). 4. explains the appropriateness of an estimation strategy used and whether the estimate is greater than (overestimate) or less than (underestimate) the exact answer (2.4.K1a).	The student: 1. adjusts original estimate using whole numbers from 0 through 100,000 of a real-world problem based on additional information (a frame of reference) (2.4.A1a) ($), e.g., given a large container of marbles, estimate the quantity of marbles. Then, using a smaller container filled with marbles, count the number of marbles in the smaller container and adjust your original estimate. 2. estimates to check whether or not the result of a real-world problem using whole numbers from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero to tenths place; and monetary amounts to $10,000 is reasonable and makes predictions based on the information (2.4.A1a-c) ($), e.g., at your birthday party, you ate 4 ½ pepperoni pizzas, 3 ¼ cheese pizzas, and 2 ¾ sausage pizzas. On the bill they charged you for 10 pizzas. Is that reasonable? If pizzas cost $6.99 each, about how much should you save for your next birthday party? 3. selects a reasonable magnitude from given quantities based on a real-world problem using whole numbers from 0 through 100,000 and explains the reasonableness of selection (2.4.A1a), e.g., about how many tulips can fit in the flower vase, 2, 10, or 25? The student chooses ten and explains that the vase at home is a jelly jar and either two or ten will fit, but ten looks prettier. 4. ▲ ■ determines if a real-world problem calls for an exact or approximate answer using whole numbers from 0 through 100,000 and performs the appropriate computation using various computational methods including mental math, paper and pencil, concrete materials, and appropriate technology (2.4.A1a) ($).

Instructional Examples for some Indicators are given as e.g.

▲ – Assessed Indicator on the Objective Assessment
■ – Assessed Indicator on the Optional Constructed Response Assessment
N – Noncalculator
($) – Financial Literacy   THESE STANDARDS ARE ALIGNED ONLY TO THE ASSESSMENTS THAT WILL BEGIN DURING THE 2005-06 SCHOOL YEAR.

Number and Computation – The student uses numerical and computational concepts and procedures in a variety of situations.

Benchmark 3: Estimation – The student uses computational estimation with whole numbers, fractions, decimals, and money in a variety of situations.

Fifth Grade Knowledge Base Indicators	Fifth Grade Application Indicators
The student:	The student:
1. estimates whole numbers quantities from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero through hundredths place; and monetary amounts to $10,000 using various computational methods including mental math, paper and pencil, concrete materials, and appropriate technology (2.4.K1a-c) ($).	1. adjusts original estimate using whole numbers from 0 through 100,000 of a real-world problem based on additional information (a frame of reference) (2.4.A1a) ($), e.g., given a large container of marbles, estimate the quantity of marbles. Then, using a smaller container filled with marbles, count the number of marbles in the smaller container and adjust your original estimate.
2. ▲N uses various estimation strategies to estimate whole number quantities from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero through hundredths place; and monetary amounts to $10,000 and explains how various strategies are used (2.4.K1a-c) ($).	2. estimates to check whether or not the result of a real-world problem using whole numbers from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero to tenths place; and monetary amounts to $10,000 is reasonable and makes predictions based on the information (2.4.A1a-c) ($), e.g., at your birthday party, you ate 4 ½ pepperoni pizzas, 3 ¼ cheese pizzas, and 2 ¾ sausage pizzas. On the bill they charged you for 10 pizzas. Is that reasonable? If pizzas cost $6.99 each, about how much should you save for your next birthday party?
3. recognizes and explains the difference between an exact and an approximate answer (2.4.K1a-c).	3. selects a reasonable magnitude from given quantities based on a real-world problem using whole numbers from 0 through 100,000 and explains the reasonableness of selection (2.4.A1a), e.g., about how many tulips can fit in the flower vase, 2, 10, or 25? The student chooses ten and explains that the vase at home is a jelly jar and either two or ten will fit, but ten looks prettier.
4. explains the appropriateness of an estimation strategy used and whether the estimate is greater than (overestimate) or less than (underestimate) the exact answer (2.4.K1a).	4. ▲ ■ determines if a real-world problem calls for an exact or approximate answer using whole numbers from 0 through 100,000 and performs the appropriate computation using various computational methods including mental math, paper and pencil, concrete materials, and appropriate technology (2.4.A1a) ($).

Indicator in parenthesis note link to another indicator

▲ – Assessed Indicator on the Objective Assessment
■ – Assessed Indicator on the Optional Constructed Response Assessment
N – Noncalculator
($) – Financial Literacy   THESE STANDARDS ARE ALIGNED ONLY TO THE ASSESSMENTS THAT WILL BEGIN DURING THE 2005-06 SCHOOL YEAR.

Module 2   Page 7   Math

Module II Part 2:   Differences among Content Standards - Mathematics

In what grade levels are Standards for Mathematics written?
K-5
6-8
9-10
All of the above

   The correct answer is (D. All of the above)

   2) The Mathematics Standards are only available in Grade Level form?
       True or False

   The correct answer is (False)

The Mathematics Standards are written with Knowledge and Application Indicators?
       True or False

   The correct answer is (True)

Indicators in the Grade Level Standards document that are marked with a Delta (▲) are
those that will be assessed at that grade level?
       True or False

   The correct answer is (True)

The Indicators with the Deltas at a given grade level are the only Indicators that should be
taught by that grade level teacher?
       True or False

   The correct answer is (False)