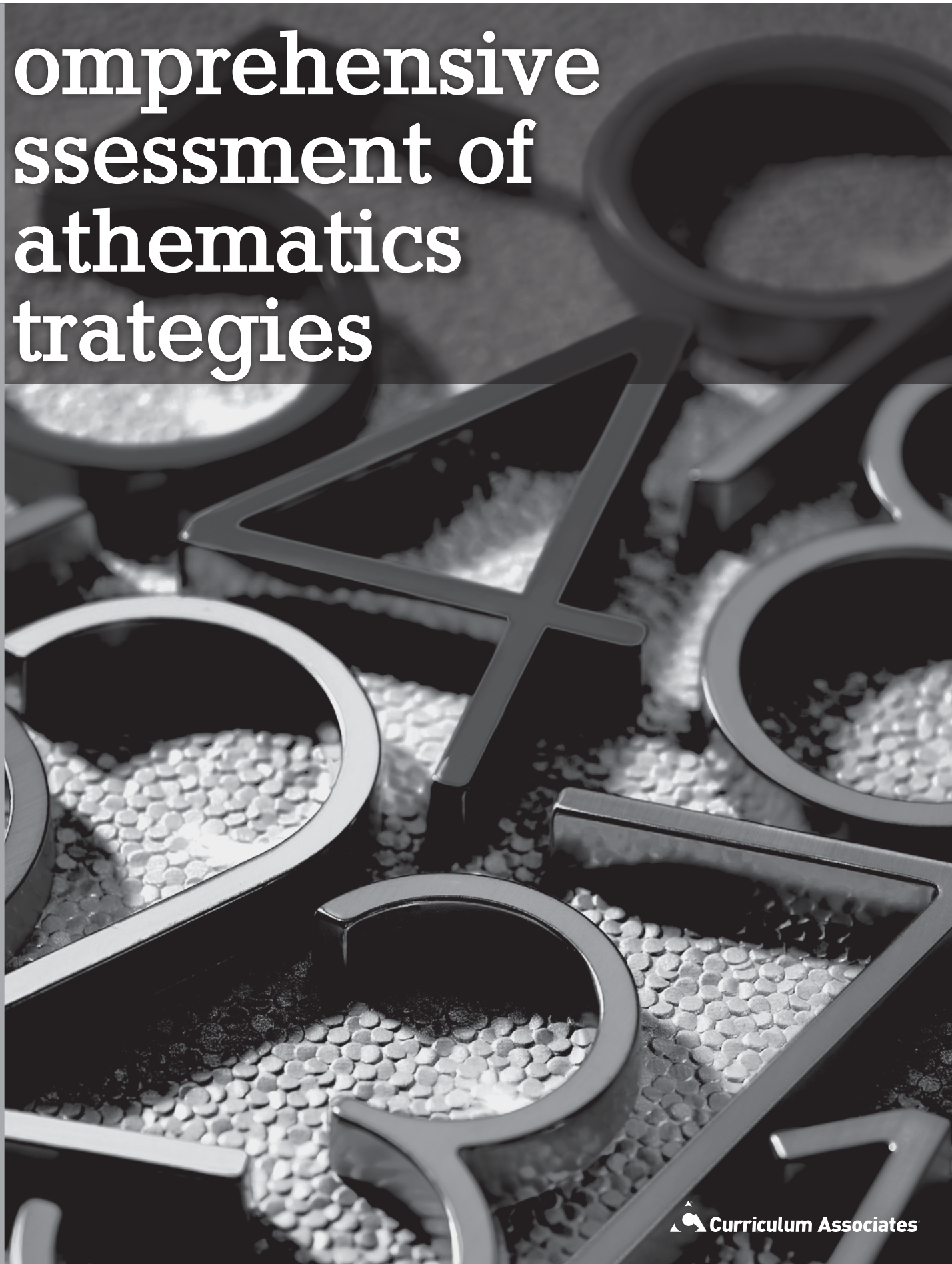
Assessment

CAMS® series
Teacher Guide A

CAMS

Comprehensive Assessment of Mathematics Strategies



Curriculum Associates

CAMS® and *STAMS*® Program
Grade-Level Foundational Concepts and Skills

Book A (Grade 1)
Understand Addition and Subtraction
Fact Families
Make Tens to Add and Subtract
Solve Word Problems
Add Three Numbers
Count to 120
Place Value
Compare Numbers
Add and Subtract Ten
Add 2-Digit Numbers
Subtract Tens
Shapes
Equal Parts
Length
Time
Data

Book B (Grade 2)
Counting Patterns
Place Value
Compare Numbers
Mental Math
Addition Strategies
Subtraction Strategies
Solve Word Problems
Add and Subtract to 1,000
Arrays
Equal Parts of Shapes
Length
Add and Subtract Length
Time
Money
Data and Line Plots
Graphs

Book C (Grade 3)
Place Value
Add and Subtract
Multiplication Concepts
Fact Strategies
More Fact Strategies
Division Concepts
Fact Families
Fraction Concepts
Model Equivalent Fractions
Benchmark Fractions
Compare Fractions
Fractions Greater Than 1
Plane Figures
Length
Perimeter
Pictographs and Bar Graphs

Book D (Grade 4)
Multiplication Properties
Multiply Mentally
Multiply by 1-Digit Numbers
Multiply by 2-Digit Numbers
Relate Division to Multiplication
Divide Without Regrouping
Divide with Regrouping
Equivalent Fractions
Simplify Fractions
Decimal Place Value
Compare and Order Decimals
Relate Decimals to Fractions
Angles
Understand Area
Area of Rectangles
Line Plots

Book E (Grade 5)
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Divide Mentally
Estimate Quotients
1-Digit Divisors
Zeros in the Quotient
2-Digit Divisors
Understand Mixed Numbers
Add and Subtract Like Fractions
Compare Unlike Fractions
Add and Subtract Unlike Fractions
Add and Subtract Mixed Numbers
Add and Subtract Decimals
Area
Surface Area
Understand Volume
Line Graphs

Book F (Grade 6)
Multiply Whole Numbers by Fractions
Multiply Fractions
Divide Whole Numbers by Fractions
Divide Fractions by Fractions
Multiply and Divide by Powers of Ten
Multiply Decimals
Divide Decimals by Whole Numbers
Divide by Decimals
Understand Ratios
Understand Percent
Unit Rates
Ratios in Tables of Data
Solve Equations Using Number Sense
Solve Equations Using Inverse Operations
Use Formulas
Volume

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CAMS® and STAMS® Program Overview

CAMS® Features

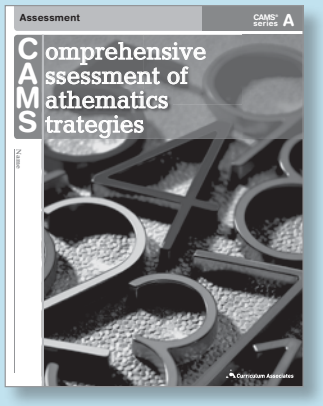
Comprehensive Pretest and Post Test to obtain reliable data on children's mastery of 16 foundational concepts and skills

Four Benchmark tests to measure child progress throughout instruction

Created to support the Common Core State Standards (CCSS). See Correlation Chart on page 14.

Reproducible record forms to simplify record-keeping and lesson-planning

The *CAMS*® and *STAMS*® Program is a powerful integrated program of assessment and data-driven instruction. The program focuses on the critical math concepts and skills that children need to advance to the next grade level. The *CAMS Series* and *STAMS Series* work together effectively to ensure that your children gain a solid understanding of the key math concepts and skills. This knowledge will ultimately help them become independent problem solvers and succeed on high-stakes state tests.



Books A–H (Grades 1–8)

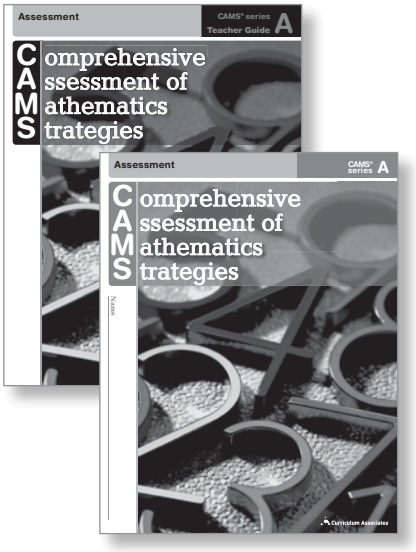
Assessment

Use the *CAMS Assessment Series* to gather information for targeting instruction and measuring progress on 16 concepts and skills necessary for success at grade level.

Books A–H (Grades 1–8)

Instruction

Use the *STAMS Instruction Series* for in-depth teaching of the 16 concepts and skills that will help children succeed.



Assessment with the CAMS® Series

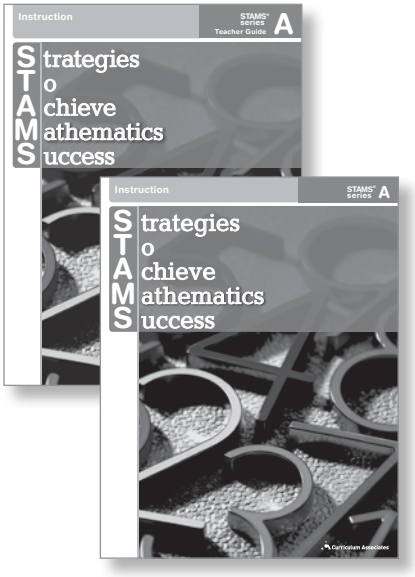
Measure both your children's progress in and their mastery of 16 foundational math topics, which cover both concepts and skills. Aligned to the NCTM Focal Points and Connections as well as to Common Core State Standards, these topics are key to grade-level success in math. The *CAMS® Assessment Series* is designed specifically to provide data for targeted instruction with the *STAMS® Instruction Series* but can also be used as a stand-alone assessment of children's grade-level progress.

Student Book

- A Pretest diagnoses children's strengths and weaknesses, and guides their placement in the *STAMS Series*. Pretest results can be compared with Post Test results to measure progress at year end.
- Four Benchmarks each test the same 16 topics as the Pretest, so individual and class progress can be monitored throughout the year.
- A Post Test assesses children's mastery of topics following instruction with the *STAMS Series* or at year end.
- Self-assessment forms prompt children to reflect on their learning and set goals.

Teacher Guide

- Answer keys make scoring fast and easy.
- Reproducible recording forms for each test facilitate data collection and interpretation. Class profiles, as well as individual strengths and weaknesses, are easy to identify.



Instruction with the STAMS® Series

Provide children with explicit instruction of the 16 math topics, which cover both concepts and skills, identified as the most important instructional goals for the grade.

- Highly scaffolded lessons in the student book support struggling children as they become more independent and confident learners.
- Full step-by-step support in the teacher guide helps teachers easily differentiate instruction and effectively present each lesson.

Using the CAMS® and STAMS® Program

Each *CAMS*® student book includes a Pretest, a Post Test, four Benchmark tests, and three self-assessment forms. The Pretest and Post Test, which both include five items for each of the 16 *STAMS*® lessons, are designed to assess mastery.

The Benchmarks are designed to be given at regular intervals during *STAMS* instruction. With one item for each lesson, they provide an ongoing measure of overall progress for individual children and the class as a whole.

The chart below describes common scenarios for when to administer the Pretest and how to use the results.

Use	Purpose of Pretest	Timing for Pretest	Using Pretest Results
During the School Year for On-level Children	To determine which grade-level topics children have mastered and which topics need remediation.	Give the Pretest in late fall, about 3 months into the school year.	Use the results to create an instructional plan for the class or small groups based on areas in which children showed weaknesses. (See *STAMS* teacher guide.)
	To assess children's mastery of a topic you have taught with your core program.	Following instruction on a specific topic with your core program, give the page or pages from the Pretest that address that topic. (See page 8.)	Immediately begin *STAMS* instruction in that topic for those children who need it.
During the School Year for Below-level Children	To identify gaps in each child's understanding of below-grade-level topics.	Administer the appropriate level of the *CAMS*® Pretest as early in the school year as possible. Use standardized test scores to identify the grade level at which the child should be tested.	Immediately begin remediation with the corresponding *STAMS* lessons at that level.
During Summer School for Below-level Children	To identify the grade-level topics that children have not mastered.	Give the entire Pretest at the start of summer school.	Provide instruction with *STAMS* lessons for the topics children still need to learn.

Implementing CAMS® Assessments and STAMS® Lessons

Option 1: Data-Driven Instruction

1 Diagnose with *CAMS*® Pretest

- Use the *CAMS*® Pretest to place children in the *STAMS*® *Series*. Pretest questions correspond to each of the 16 topics in the *STAMS* lessons, so results clearly identify exactly which topics your children need to study.
  (See details on pages 8–9.)

2 Instruct with *STAMS*® Lessons

- Use the results of the *CAMS*® Pretest to assign specific lessons in the *STAMS Series* to remediate areas that need improvement.
  (See the *STAMS*® teacher guide for more details about instruction.)

3 Monitor Progress with *CAMS*® Benchmarks

- Use the four *CAMS*® Benchmarks, each with one question per topic, to monitor children's progress at four points during the year.
  (See details on pages 10–11.)

4 Assess Mastery with *CAMS*® Post Test

- Use the *CAMS*® Post Test to assess mastery of each of the 16 foundational topics following instruction with *STAMS*®.
  (See details on pages 12 and 13.).

Option 2: Comprehensive Instruction

For implementation of *CAMS*® and all 16 *STAMS*® lessons, follow this suggested pacing chart. Allocate 19 weeks, with each *STAMS*® lesson spanning 5 days.

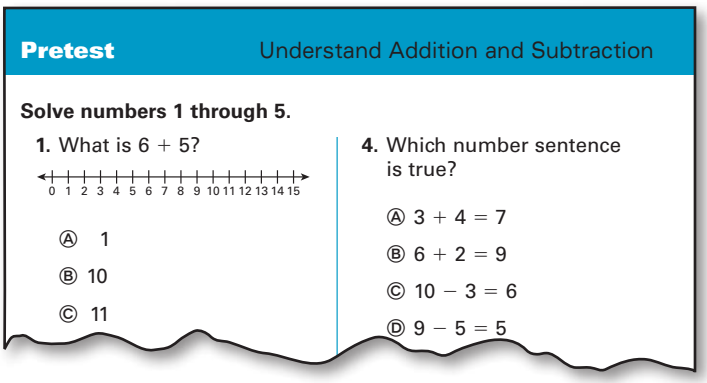
Suggested Pacing Chart for Book A of the CAMS® *and* STAMS® *Program*

Day(s)	Lesson	*CAMS*® *Assessment Series*	*STAMS*® *Instruction Series*	Minutes
1–5		*CAMS*® Pretest		30–45/day
6–10	1	Understand Addition and Subtraction		30–45/day
11–15	2	Fact Families		30–45/day
16–20	3	Make Tens to Add and Subtract		30–45/day
21–25	4	Solve Word Problems		30–45/day
26		*CAMS*® Benchmark 1		30–45
27–31	5	Add Three Numbers		30–45/day
32–36	6	Count to 120		30–45/day
37–41	7	Place Value		30–45/day
42–46	8	Compare Numbers		30–45/day
47		*CAMS*® Benchmark 2		30–45
48–52	9	Add and Subtract Ten		30–45/day
53–57	10	Add 2-Digit Numbers		30–45/day
58–62	11	Subtract Tens		30–45/day
63–67	12	Shapes		30–45/day
68		*CAMS*® Benchmark 3		30–45
69–73	13	Equal Parts		30–45/day
74–78	14	Length		30–45/day
79–83	15	Time		30–45/day
84–88	16	Data		30–45/day
89		*CAMS*® Benchmark 4		30–45
90–94		*CAMS*® Post Test		30–45/day

Note: Allocate 15 minutes more per day if *STAMS*® additional activities are used in conjunction with each lesson.

Using the Pretest

The *CAMS*® Pretest consists of 16 pages of test items, with one page of five problems for each *STAMS*® lesson. Each page is labeled with the lesson name and number, so when Pretest results identify an area of weakness, it is easy to know exactly which lesson should be used to remediate.



Pretest Understand Addition and Subtraction

Solve numbers 1 through 5.

1. What is 6 + 5?

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Ⓐ 1
Ⓑ 10
Ⓒ 11

4. Which number sentence is true?

Ⓐ 3 + 4 = 7
Ⓑ 6 + 2 = 9
Ⓒ 10 − 3 = 6
Ⓓ 9 − 5 = 5

When to Give the Pretest

On-level children

- The Pretest includes grade-level topics that will be largely unfamiliar to your children at the start of the school year. So, wait at least three months into the school year before administering the Pretest.

TIP: If you do give the Pretest at the beginning of the school year, expect low scores, because the concepts and skills have not yet been taught. Use the results only as a baseline from which to measure progress.

- Specific Pretest pages can be used to assess mastery of topics covered in your core program. Throughout the year, administer those Pretest pages that correspond to units just taught in the core program. See the inside front cover of this teacher guide for the list of topics in each level of the *CAMS* and *STAMS* Program.

How to Administer the Pretest

- This grade level requires direct teacher administration. Guide children through the Pretest problem by problem, reading aloud any problem that requires reading words.
- Allow 30 to 45 minutes a day over a five-day period to administer the Pretest. Each page should take about 10 to 15 minutes, so children should complete 3 pages per day.
- Provide each child with sharpened pencils, an inch ruler (Books B–E only), erasers, and scratch paper.
- Explain to children how to choose an answer by filling in an answer bubble below each problem. (Alternatively, have children with testing experience record their answers on the Pretest Answer Form on page 51 of their books.)
- Then begin the test. As you guide children through the problems, have them complete each problem in sequential order. Be sure children are working on the same problem that you are reading aloud.

How to Correct the Pretest and Record Results

Use the Pretest Answer Key (page 20) to correct each child's test. Then use the following two recording forms to record the results.

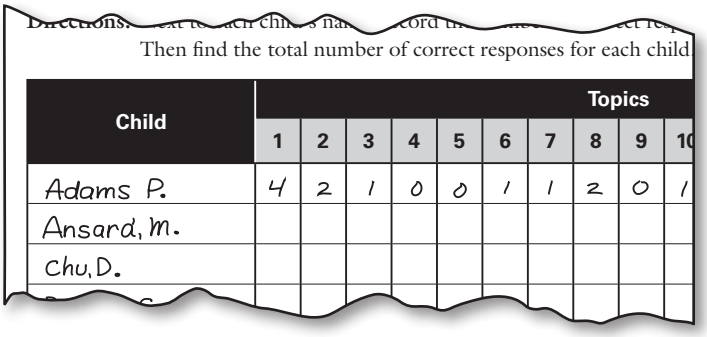
Individual Record Sheet

- Make one copy of the Individual Record Sheet—Pretest/Post Test (page 16) for each child.
- Record the number of correct responses for each topic on the Individual Record Sheet. Then calculate and record the percent of correct responses.

Topic	Pretest Score	*STAMS*
1. Understand Addition and Subtraction	4 / 5 = 80 %	yes
2. Fact Families	2 / 5 = 40 %	yes
3. Make Tens to Add and Subtract	2 / 5 = 40 %	yes
4. Solve Word Problems	0 / 5 = 0 %	yes
5. Add Three Numbers	1 / 5 = 20 %	yes
6. Co[illegible] 120	2 / 5 = 40 %	yes

Class Record Sheet

- Make a copy of the Class Record Sheet—Pretest/ Post Test (page 18).
- Write each child's name on the Class Record Sheet.
- Record the number of correct responses for each topic next to each child's name. Then calculate and record the total number of correct responses for all 16 topics.



Then find the total number of correct responses for each child.

Child	Topics									
	1	2	3	4	5	6	7	8	9	10
Adams P.	4	2	1	0	0	1	1	2	0	1
Ansard, M.										
Chu, D.										

How to Use the Pretest Data

Individual Record Sheet

Use the data on each child's Individual Record Sheet to evaluate mastery of the topics.

- Circle *yes* or *no* in the corresponding box of the *STAMS*® Instruction column, using the following criteria.
  - For a score of 80% or more (4 or 5 correct) per topic, no instruction is suggested.
  - For a score of less than 80% (3 or fewer correct) per topic, remediation is recommended.

TIP: If a child responds correctly to 3 items for a topic, you may want to conduct a brief interview to determine whether or not instruction for that topic is necessary.

- Ask the child to explain or show how he or she solved two different problems. Choose one problem that was answered correctly and one that was answered incorrectly.
- Use your judgment to assess the child's level of understanding and decide whether or not *STAMS* instruction is needed.

Class Record Sheet

Use the data on the Class Record Sheet to help plan instruction.

- Highlight each score of 3 or fewer correct responses.
- Scan down each column to see which children require remediation for that topic.
- Use this information to group children and create an instructional plan. Choose the corresponding *STAMS* lessons from the same grade level to remediate.
- If children are not succeeding with a lesson, review prerequisite skills taught in earlier lessons or in the previous grade level.

(See pages 10–13 in the *STAMS* teacher guide for more details about instruction.)

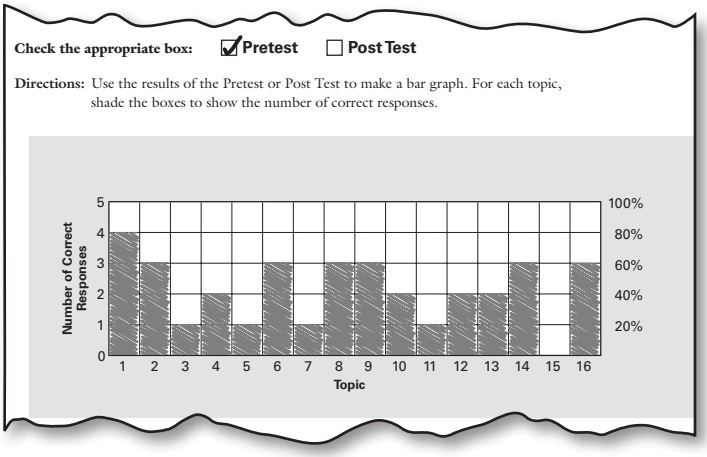
How to Use the Performance Graph and Self-Assessment

After finishing the Pretest, help children evaluate their performance.

Individual Performance Graph

The Individual Performance Graph (page 17) provides children with a visual display of their performance, while the Self-Assessment/Pretest allows children to identify their strengths and areas that need improvement.

- Complete an Individual Performance Graph for each child by shading the bars to show the number of correct responses for each topic.
- In individual conferences, discuss the graph with each child. Encourage the child to think about what he knows and what he does not understand.
- Then discuss the questions on the Self-Assessment/ Pretest with the child. Help him identify his strengths and areas that need improvement. Record his responses.



Using the Benchmarks

The *CAMS*® student book includes four Benchmarks that provide a snapshot of the class's progress while working with the *CAMS*® *Series* and *STAMS*® *Series*. Each Benchmark includes 16 items, one for each of the foundational topics. These tests are not meant to assess mastery of topics, but rather to give a quick measurement of the class's growth overall.

When to Give the Benchmarks

The Benchmarks cover all *STAMS* lesson topics and can be given at different times during *STAMS* instruction. See the suggested intervals provided in the Pacing Chart on page 7. These intervals may be modified to meet your children's needs or your school's schedule.

How to Administer the Benchmarks

- This grade level requires direct teacher administration. Guide children through the Benchmark problem by problem, reading aloud any problem that requires reading words.
- Allow 30 to 45 minutes to administer each Benchmark.
- Provide each child with sharpened pencils, an inch ruler (Books B–E only), erasers, and scratch paper.
- Explain to children how to choose an answer by filling in an answer bubble below each problem. (Alternatively, have children with testing experience record their answers on the Benchmark Answer Form on page 53 of their books.)
- Then begin the test. As you guide children through the problems, have them complete each problem in sequential order. Be sure children are working on the same problem that you are reading aloud.

How to Correct the Benchmarks and Record the Results

Use the Benchmarks Answer Key (page 21) to correct each child's test. Then record the results.

Class Record Sheet

- Make a copy of the Class Record Sheet—Benchmarks (page 19).
- Write each child's name on the Class Record Sheet.
- Record the number of correct responses for each Benchmark next to each child's name.
- Calculate the average number of correct responses for the class by dividing the total number of correct responses by the number of children. Record the result at the bottom of the corresponding column.
- Use the space at the bottom of the page for recording any notes or observations about child behavior or progress.

How to Use the Data

Class Record Sheet

- Use the Class Record Sheet—Benchmarks to see individual overall progress. Recognize that scores will be quite low on the earlier Benchmarks because many topics have not yet been taught.
- If you give the first Benchmark after instruction in four *STAMS* lessons, as shown on the Pacing Chart, you shouldn't expect scores higher than about 7 or 8.
- For the second, third, and fourth Benchmarks, expect the highest scores to be around 10, 13, and 16, respectively.
- Compare the results of each Benchmark with the previous one to see individual child progress.
- If the class average of a Benchmark is lower than expected, you might want to take extra time to review topics with which the whole class struggled. Since these are foundational math topics, it's important to fill gaps in understanding before moving on.

Directions: Next to each child's name, record the date each Benchmark was given and the number of correct responses for the test.

Child	Benchmark 1	Benchmark 2	Benchmark 3	Benchmar
	Date Dec. 3	Date Jan. 18	Date March 3	Date
Adams, P.	7	11	13	
Ansara, M.	8	11	13	
Chu, D.	9	12	14	
Duarte, C.	5	8	9	
Ferris, J.	7	10	13	
Fong, D.	6	8	9	
Fowler, A.	6	10	12	
Gonzales, A.	5	10	12	
Haak, J.	6	9	10	
Herron, C.	9	11	12	
Ikeda, R.	6	10	13	
Jones, K.	7	12	13	
Juarez, P.	7	11	12	

How to Use the Student Self-Assessment

After finishing each Benchmark, have children self-evaluate their performance.

- Have children turn to the Self-Assessment/ Benchmarks form in their student book.
- Suggest that they briefly look back at each problem in the Benchmark test and think about how well they understood the problem.
- Have children locate the column in the Self-Assessment form that corresponds to the Benchmark they just took. Ask them to circle either the happy face or the confused face next to each problem to describe their level of understanding. You may wish to discuss the meaning of the faces with the children:

  The child did not understand the problem.

  The child was able to solve the problem and could explain how to solve it.
- Be sure children understand that the first three Benchmarks include problems on some topics they have not yet been taught. Make it clear that they are not expected to understand all the problems until Benchmark 4.
- Use this information as a basis for individual conferences. Make a plan for each child to provide instruction in specific topics.

For each benchmark, circle the face that tells what you think about each problem.

I do not understand. | I can solve the problem and explain how.

Problem	Benchmark 1	Benchmark 2	Benchmark 3	Benchmark 4
1. Understand Addition and Subtraction				
2. Fact Families				
3. Make Tens to Add and Subtract				
4. Solve Word Problems				
5. Add Three Numbers				
6. Count to 120				
7. Place Value				
8. Compare Numbers				
9. Add and Subtract Ten				
10. Add 2-Digit Numbers				
11. Subtract Tens				
12. Shapes				
13. Equal Parts				

from CAMS® Book A *Student Book*

Using the Post Test

The Post Test structure directly matches the Pretest structure, with five problems for each *STAMS*® lesson. This uniformity makes it easy to see child progress with each topic and to know exactly which lessons need to be reviewed to address areas of weakness.

When to Give the Post Test

Administer the Post Test after completing instruction of all the *STAMS* lessons.

How to Administer the Post Test

- This grade level requires direct teacher administration. Guide children through the Post Test problem by problem, reading aloud any problem that requires reading words.
- Allow 30 to 45 minutes a day over a five-day period to administer the Post Test. Children will complete 3 pages per day, and each page should take about 10 to 15 minutes.
- Provide each child with sharpened pencils, an inch ruler (Books B–E only), erasers, and scratch paper.
- Explain to children how to choose an answer by filling in an anwer bubble below each problem. (Alternatively, have children with testing experience record their answers on the Post Test Answer Form on page 55 of their books.)
- Then begin the test. As you guide children through the problems, have them complete each problem in sequential order. Be sure children are working on the same problem that you are reading aloud.

TIP: Consider correcting the Post Test orally with the class after its completion.

- On the board, have children show how to solve each problem. Explain concepts that children may not fully understand. Discuss why an answer choice is correct and why the remaining answer choices are not correct.
- If possible, elicit from children their reasoning for choosing both correct and incorrect answers.

Discussions like these provide review and practice for upcoming state tests.

How to Correct the Post Test and Record Results

Use the Post Test Answer Key (page 22) to correct each child's test. Then use the following two recording forms to record the results.

Individual Record Sheet

- An individual child's Post Test scores are recorded in the same chart that includes the Pretest scores. This provides a convenient one-page summary of the child's performance.
- Record the number of correct responses for each topic on the Individual Record Sheet. Then calculate and record the percent of correct responses.

Pretest Score	*STAMS*® Instruction	Post Test Score
4 / 5 = 80 %	yes (no)	5 / 5 = 100 %
2 / 5 = 40 %	(yes) no	4 / 5 = 80 %
2 / 5 = 40 %	(yes) no	5 / 5 = 100 %
0 / 5 = 0 %	(yes) no	4 / 5 = 80 %
1 / 5 = 20 %	(yes) no	3 / 5 = 60 %
2 / 5 = 40 %	(yes)	5 / 5 = 100 %

Class Record Sheet

- Make a copy of the Class Record Sheet—Pretest/ Post Test (page 18).
- Write each child's name on the Class Record Sheet.
- Record the number of correct responses for each topic next to each child's name. Then calculate and record the total number of correct responses for all 16 topics.

Check the appropriate box: ☐ **Pretest** ☑ **Post Test** **Date:** __

Directions: Next to each child's name, record the number of correct responses fo
Then find the total number of correct responses for each child.

Child	Topics										
	1	2	3	4	5	6	7	8	9	10	11
Adams P.	4	4	2	5	4	4	4	3	4	5	
Ansard, M.	5	4	4	4	5	4	4	5	4	5	
Chu D.	4	4	4	5	5	5	5	4	5	5	

How to Use the Post Test Data

Individual Record Sheet

Use the data on each child's Individual Record Sheet to compare Pretest and Post Test results and determine where progress has occurred.

- Also use the results of the Post Test to evaluate mastery of each topic. Identify the topics for which the child's percent of correct responses is 80% or 100%.
- Make note of the topics with a score below 80%. The child could benefit from a review of these topics prior to state testing.

Class Record Sheet

Use the data on the Class Record Sheet to identify areas of weakness.

- Highlight each score of 3 or fewer correct responses.
- Scan down each column to identify those topics with which the class as a whole is still struggling. You may want to provide additional review of those topics for the whole class prior to state testing.

Check the appropriate box: ☐ **Pretest** ☑ **Po**

Directions: Next to each child's name, record the number
Then find the total number of correct respons

Child	1	2	3	4	5	6	7
Adams P.	4	4	2	5	4	4	4
Ansard, M.	5	4	4	4	5	4	4
Chu, D.	4	4	4	5	5	5	5
Duarte, C.	4	4	3	4	4	5	4
Ferris, J.	5	5	4	4	4	2	4
Fong, D.	4	4	2	5	4	4	5
Fowler, A.	4	4	1	4	4	4	4
Gonzales, A.	4	4	2	4	4	2	3

How to Use the Student Self-Assessment

After finishing the Post Test, have children self-evaluate their performance.

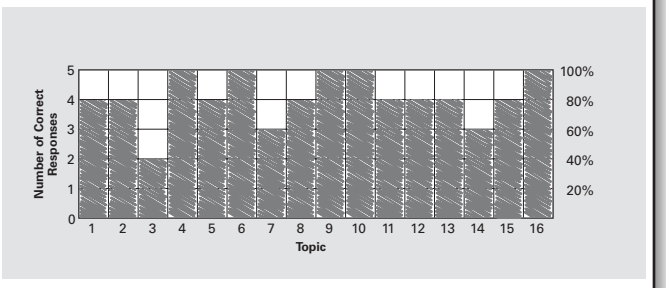
Individual Performance Graph

The Individual Performance Graph (page 17) provides children with a visual display of their performance, while the Self-Assessment/Post Test allows children to identify their strengths and areas that need improvement.

- Complete an Individual Performance Graph for each child by shading the bars to show the number of correct responses for each topic.
- In individual conferences, discuss the graph with each child. Encourage the child to think about what she knows and what she does not understand.
- Also discuss the questions on the Self-Assessment/Post Test with the child. Record her responses.
- Help the child compare the Self-Assessment/Post Test with the Self-Assessment/Pretest from the beginning of the program. Discuss progress made during the year.

Check the appropriate box: ☐ **Pretest** ☑ **Post Test**

Directions: Use the results of the Pretest or Post Test to make a bar graph. For each topic, shade the boxes to show the number of correct responses.



Testing of Common Core State Standards

The concepts and skills in the *CAMS*® and *STAMS*® Program are based on the NCTM Focal Points and Connections and the Common Core State Standards. The Common Core State Standards Initiative has developed this set of standards as a framework to present math concepts and skills at the appropriate grade level.

The chart below correlates the test items in *CAMS*® *Book A* with Common Core State Standards (CCSS) for grade 1 mathematics.

CCSS Grade 1	Test Items	
	Pretest and Post Test	Benchmarks 1–4
Operations and Algebraic Thinking		
1.OA.1	16–20	4
1.OA.2	21–25	5
1.OA.3	6–15	2, 3
1.OA.4	1–5	1
1.OA.5	1–5	1
1.OA.6	6–15	2, 3
1.OA.7	1–5	1
1.OA.8	6–10	2
Number and Operations in Base Ten		
1.NBT.1	26–30	6
1.NBT.2	31–35	7
1.NBT.3	36–40	8
1.NBT.4	46–50	10
1.NBT.5	41–45	9
1.NBT.6	51–55	11
Measurement and Data		
1.MD.1	66–70	14
1.MD.2	66–70	14
1.MD.3	71–75	15
1.MD.4	76–80	16
Geometry		
1.G.1	56–60	12
1.G.3	61–65	13

Research Summary

CAMS® and STAMS® Quick-reference Chart

Strategies and Features	Examples	Research Says
Computational Fluency Computational fluency is having quick recall of number facts and knowledge and ability to apply multiple computational methods.	***CAMS* Student Book** Problems in the Pretest, Benchmarks, and Post Test reinforce grade appropriate methods for computing.	"Efficient, accurate computational fluency is key to students' success in higher-level mathematics necessary for the workplace." — *National Research Council, 2001*
Data-driven Instruction Data-driven instruction involves instructional decisions that are based on the systematic collection of data that reflects children's understanding.	***CAMS* Student Book** • 1 Pretest • 4 Benchmarks • 1 Post Test ***STAMS* Teacher Guide** • Assessment and Remediation Chart in each lesson	"Districts and schools that are improving generally show a commitment to the use of student assessment data to diagnose weaknesses and guide improvement efforts. They provide data to teachers and principals in a timely manner, train teachers in how to use these data effectively and give the teachers time to analyze the data." — *U.S. Department of Education, 2010*
Formative Assessments A formative assessment is an assessment tool to guide teacher's instruction by setting an action plan based on a child's performance.	***CAMS* Entire Series** • 1 Pretest • 4 Benchmarks • 1 Post Test ***STAMS* Entire Series** • Assessment and Remediation Chart in each lesson	"Teachers' regular use of formative assessment improves their students' learning, especially if teachers have additional guidance on using the assessment to design and to individualize instruction." — *NMAP, 2008*
Problem Solving The problem solving process standard enables children to build new math knowledge through problem solving and to solve problems using various strategies.	***CAMS* Entire Series** • 1 Pretest • 4 Benchmarks • 1 Post Test	"Problem solving is an integral part of all mathematics learning. In everyday life and in the workplace, being able to solve problems can lead to great advantages." — *NCTM, 2000*
Progress Monitoring Progress monitoring is a strategy that involves frequent, in-classroom progress checks of child's understanding and mastery of math concepts and skills.	***CAMS* Student Book** • 1 Pretest • 4 Benchmarks • 1 Post Test ***STAMS* Student Book** • Part One through Part Four: Your Turn activity • Part Five: Independence Practice	"Teachers' regular use of formative assessments improves their students' learning, especially if teachers have additional guidance on using the assessment results to design and individualize instruction." — *NMAP, 2008*
Test-Taking Practice Selected-response test questions are consistently used on state and national standardized tests.	***CAMS* Student Book** • 1 Pretest • 4 Benchmarks • 1 Post Test ***STAMS* Student Book** • Part Five: Independent Practice	"The more times one repeats an action (e.g., practice) or recalls the information, the more connections of new memories to old are made, and the more efficient the brain becomes in its ability to retrieve that memory or repeat that action. Eventually, just triggering the beginning of the sequence results in the remaining pieces falling into place." — *Willis, 2007*

For a full report and bibliography, go to CurriculumAssociates.com/STAMS/research.