Preparing Students for NJ ASK

Eight new workshops added!

Standards-Based Mathematics Workshops for Grade K-4 Teachers 2005-2006

New Jersey Mathematics Coalition and Rutgers Center for Mathematics, Science, and Computer Education
Would you like to:

- Better prepare your students for New Jersey’s statewide assessments?
- Engage your students in the lessons that you teach?
- Incorporate standards-based hands-on activities that motivate your students?
- Relate what you are doing in the classroom to “real world” applications?

THE RUTGERS CENTER FOR MATHEMATICS, SCIENCE, AND COMPUTER EDUCATION (NJ DOE provider #2) is offering a number of highly interactive one-day professional development workshops for grades K-4 teachers of mathematics. All workshops are based on the NJ Core Curriculum Content Standards in mathematics as they are reflected in the ASK. All of these workshops will help you better prepare students for the ASK and provide the resources and knowledge that you need to generate new and exciting standards-based lessons.

All workshops are full-day workshops at which participants will earn six (6) professional development hours. All workshops will take place at Rutgers University, New Brunswick Campus (unless otherwise noted). Participants may attend single or multiple workshops in any order. Discounts are available for multiple registrations on a single purchase order.

Although some workshops address overlapping issues, teachers who attend them will benefit from experiencing the different approaches the workshop leaders have to helping students meet the challenges of the ASK. Our instructors are among the most experience and respected workshop leaders in the state. The workshop topics are based on feedback and recommendations from NJ teachers and administrators.

You will leave these workshops with valuable tools to motivate your students, stimulate their curiosity, and promote a more positive attitude towards mathematics.

*Joseph G. Rosenstein, Director and Professor of Mathematics, Rutgers*

**Workshops**

**Grades K-2 Workshops**
- Prepare Your K-2 Students Now for the NJ ASK
- Making Math Manipulatives — Grades K-2

**Workshops for Teachers of Grades 3 and up**
- Connect Literature and Math for NJ ASK Grades 3-4; Workshop I and II
- Achieving Success with the NJ ASK: Activities and Strategies for use in the Math Classroom
- Get Your Students to Understand the Big Picture: Learn New Ways to Make Sense of NJ ASK
- Integrating Math Games into the Classroom
- Getting Reading for NJ ASK 3-4: Use Multi-tasking to Get It All Done by March
- Building Computational Fluency
- Special Need Students Need Standards-Based Math Instruction Too!

**NJ ASK 3-4 Standards-Based Workshop Series**
- Working with Data + Number Sense: Whole Numbers
- Patterns and Algebra + Geometry
- Measurement + Number Sense: Fractions
- Probability, Discrete Math, and Problem Solving
Grades K-2 Workshops

NEW! Prepare Your K-2 Students Now for the NJ ASK
Date: November 2, 2005 (Code: ASK 110205)
Time: 8:30 a.m. – 3:00 p.m.
Presenter: Karin Rupp, Mathematics Consultant
Do you ever believe it can’t all be done in one year? Learn how to connect your ordinary classroom activities to math concepts which your students will be required to know in the future for the NJ ASK. This workshop will include grade-level appropriate lessons using manipulatives, popular children’s books, the number line, open-ended questions and also the calculator to reinforce concepts. This workshop is appropriate for K-2 teachers of mathematics.

NEW! Making Math Manipulatives - Grades K-2
Dates: November 17, 2005 (Code: ASK 111705) or December 15, 2005 (Code: ASK 121505)
Time: 8:30 a.m. to 3:00 p.m.
Presenters: Darlene Farrace-Prott, Nicole Pepe, NJ Teacher to Teacher, LLC Presenters
Are you looking for creative ways to make your mathematics classroom come alive? This workshop encompasses all of the New Jersey Mathematics Standards into one. Teachers in the primary grades can get started enhancing the current curriculum with fun and effective hands-on activities and learning centers that align with the state standards. Teachers will have the opportunity to explore, develop, and take home math game manipulatives that can be used immediately in the classroom. Standards-based, ready made math fun to go!

Workshops for Teachers Grades 3 and Up

Connect Literature and Math for NJ ASK Grades 3 & 4 Workshop I
Date: November 1, 2005 (Code: ASK 110105)
Time: 8:30 a.m. – 3:00 p.m.
Presenter: Patricia Cox, Mathematics Consultant, LL Teach

Connect Literature and Math for NJ ASK Grades 3 & 4 Workshop II
Date: December 6, 2005 (Code: ASK 120605)
Time: 8:30 a.m. – 3:00 p.m.
Presenter: Patricia Cox, Mathematics Consultant, LL Teach
Many popular children’s books incorporate mathematical concepts that can help introduce and reinforce math lessons in your classroom. Both of these highly interactive sessions will use literature as a springboard to help teachers implement problem-solving, discovery, and hands-on activities. Participants will leave with practical ideas that will maximize student interest, self-esteem, retention and understanding. Techniques to strengthen responses to open-ended questions will also be discussed.
WORKSHOP I - Stories, skills addressed, and manipulatives used during the workshop include but are not limited to:

- Spaghetti and Meatballs for ALL — perimeter, area, spatial sense; manipulatives include geoboards
- Pigs Will Be Pigs/Alexander Who Was Rich Last Sunday — decimal/fraction conversions, money, algebraic thinking, lists, probability; manipulatives include money, cubes
- Grandfather Tang’s Story — shape recognition, properties of shapes, congruency, fractions, area and perimeter; manipulatives include tangrams, geoboards

WORKSHOP II - Stories, skills and manipulatives addressed during the workshop include but are not limited to:

- Cloak for the Dreamer — Operations with fractions, transformations, symmetry, patterns, decimals; manipulatives include pattern blocks and geoboards
- Gator Pie — fractions, decimals; manipulatives include geoboards
- Remainder of One — division concepts and applications; manipulatives include connecting cubes and geoboards
- The Greedy Triangle — shape recognition; manipulatives include straws and geoboards
- One Hundred Hungry Ants — multiplication concepts and applications; manipulatives include cubes and geoboards

*Workshops I and II may be taken independently; the two workshops will address the same themes but with different activities.

NEW! Achieving Success with the NJ ASK: Activities and Strategies for Use in the Math Classroom, Grades 3-6

Date: November 7, 2005 (Code: ASK 110705)

Time: 8:30 a.m. – 3:00 p.m.

Presenter: Joyce Glatzer, Mathematics Supervisor, West New York District

Preparing for NJ ASK can seem overwhelming as the test dates loom close. Infusing practice questions, similar to those covered on the test, in everyday lessons can help prepare students and reduce anxiety for many. This workshop will address key instructional components which can improve student performance on standardized tests. These components include, but are not limited to, infusion of open-ended questions in instruction, incorporation of hands-on activities in lessons, use of higher order thinking skills and questioning techniques with students, and providing meaningful practice in preparation for the actual test. This workshop is appropriate for mathematics supervisors and grade 3-6 teachers of mathematics.
NEW! Get Your Students to Understand the Big Picture: Learn New Ways to Make Sense of NJ ASK

Date: December 1, 2005 (Code: ASK 120105)
Time: 8:30 a.m. to 3:00 p.m.
Presenter: Karin Rupp, Mathematics Consultant

Students solve a number of different word problems in their math classes. Most often these are stand-alone exercises. This workshop provides a variety of examples and representations from different content standards but which are really examples of the same concepts. Workshop activities will include the use of manipulatives, number line, popular children’s books, open-ended questions as well as the calculator to reinforce required math concepts. This workshop is appropriate for grade 3-4 teachers of mathematics.

NEW! Integrating Math Games into the Classroom

Date: December 6, 2005 (Code: ASK 120605)
Time: 8:30 a.m. – 3:00 p.m.
Presenters: Jacquelyn Papp and Jacqueline Garatva, Mathematics Department, Hamilton District

As tests get tougher and lessons more involved, keeping students motivated and engaged has become more of a challenge in today’s academic environment. This workshop offers a wide variety of ideas that will help teachers enhance their lessons through the use of games. In addition to reinforcing daily lessons, some of the games can also be used for alternate assessment. Topics covered include place value, fractions, decimals, geometric shapes and coordinate graphing. This workshop is recommended for grade 4-8 teachers, special education, and basic skills teachers 4-12.

Getting Ready for NJ ASK 3-4: Use Multi-Tasking to Get It All Done by March

Date: January 4, 2006 (Code: ASK 010406)
Time: 8:30 a.m. – 3:00 p.m.
Presenter: Paul Lawrence, President, LL Teach

By the time January arrives, many 3rd and 4th grade teachers are faced with the realization that the NJ ASK 3-4 is only 10 weeks away. How can you cover the concepts that need to be taught, but still keep your commitment to using standards-based, hands-on, discovery-oriented tasks?. One solution to the problem is to combine tasks together, e.g., provide geometric interpretations to computation skills and infuse lessons with open-ended questions, problem solving, and discovery-based activities while teaching concepts and procedures for addition, subtraction, multiplication, and division. Sets of problems that combine number sense, estimation, problem solving and logic will be presented and distributed so that participants can easily share and implement these ideas in their own schools.
NEW! Building Computational Fluency I
Date: January 12, 2006 (Code: ASK 011206)
Time: 8:30 a.m. – 3:00 p.m.
Presenter: Patricia Cox, Mathematics Consultant, LL Teach

NEW! Building Computational Fluency II
Date: January 18, 2006 (ASK 011806)
Time: 8:30 a.m. – 3:00 p.m.
Presenter: Robert Jolley, Mathematics Consultant, LL Teach
If students haven’t mastered the basics, advancing to more complex mathematical concepts becomes a bigger challenge. These workshops address computational fluency by starting with basic student understanding and encompassing activities that ensure students have ready facility for the use of basic facts as needed in school and in everyday life. Topics include mental math and estimation, number sense, teaching computational skills, pattern recognition, and using games to promote retention.

Workshop I will focus on addition and subtraction of whole numbers, although manipulatives will also be used for addition and subtraction of fractions and decimals.

Workshop II will focus on multiplication and division of whole numbers, although manipulatives will also be used for multiplication of fractions and decimals.

Workshop I and Workshop II may be taken independently. These workshops are appropriate for grade 3-5 teachers of mathematics and mathematics supervisors.

NEW! Special Need Students Need Standards-Based Math Instruction Too!
Date: May 31, 2006 (Code: GEPA 053106)
Time: 8:30 a.m. to 3:00 p.m.
Presenter: Paul Lawrence, President, LL Teach, Inc.
Special education, summer school, after school, and intervention programs often only provide more of the same worksheets and rules as ways to foster understanding and success in mathematics. Learn about discovery-based, hands-on, highly sequenced, alternative strategies that lead to traditional understanding and applications of essential concepts taught in grades 3-8. Focus will be on selected topics from arithmetic operations with whole numbers and fractions. This workshop is appropriate for grade 3-8 teachers of mathematics, special education and basic skills teachers.
NJ ASK 3-4 Standards-Based Workshop Series

Each of the four workshops in this series focuses on one or two of New Jersey’s mathematics standards; together, the four workshops address all of the mathematics standards and assessment strands. The four workshops may be taken in any order.

The four workshops described below were developed by the New Jersey Mathematics Coalition and designed to present key instructional activities that address the NJ mathematics standards and assessment strands. Teachers who engage students in such activities, and the mathematics they involve, will automatically be preparing students for the kinds of questions that appear on the state tests. To underscore this point, sample assessment questions are explicitly discussed as they relate to the workshop activities. (We do not, however, advocate “teaching to the test”.) Problem-solving and literature connections are also embedded in all workshops.

Participants will return to school with a large packet of materials to use in their classrooms and with the instructional strategies that will enable children to learn the mathematics in the workshop. All workshop activities are easily incorporated into existing curricula.

These workshops were originally developed and workshop leaders trained with funding from Johnson & Johnson and the Geraldine R. Dodge Foundation.

WHO SHOULD ATTEND: The workshops are designed for

- 3rd & 4th grade teachers of mathematics
- Mathematics resource teachers
- Mathematics specialists
- Mathematics curriculum leaders
- Mathematics coaches

While individual teachers will benefit from these workshops, groups of teachers from a school will benefit much more because they will be able to work together in the workshop to improve their understanding of the standards and, afterwards, as a professional community to implement workshop activities in their classrooms. Discounts are available for multiple registrations on a single purchase order. See Registration Information for more details.

Workshops

WORKSHOP A: The focus of the morning session is “WORKING WITH DATA”. Participants begin by completing a short survey, then graph and analyze data. They discuss key characteristics of different kinds of graphs, such as pictographs, bar graphs, pie charts, line plots, Venn diagrams, and glyphs. The steps for gathering, presenting and interpreting data are viewed as key components in the process of inquiry. Strategies are suggested for helping students understand the concepts of mean, median, and mode.

The focus of the afternoon session is “NUMBER SENSE: WHOLE NUMBERS”. Participants begin by discussing uses for numbers in real life, and the relative magnitude of...
numbers in different situations. A hundred-grid is used to focus on finding patterns in numbers, doing mental math, and developing place value concepts to 100. A collection of number games are offered for practicing computation and estimation skills. The array model is used to discuss multiplication and division.

WORKSHOP B: The focus of the morning session is “PATTERNS AND ALGEBRA”. This workshop begins with patterns and problem-solving activities designed to develop algebraic thinking in young students. The problems are explicitly linked to various problem-solving strategies as well as the algebra standards. Participants then engage in problems that demonstrate how functions and algebraic expressions can be used as additional aids to problem-solving.

The focus of the afternoon session is “GEOMETRY”. Participants explore properties of two-dimensional shapes including sides, angles, area and perimeter, and transformations of shapes using flips, turns, and slides. Next, participants construct three-dimensional figures to explore the concepts of sides, vertices, and edges; and they draw top, front, and side views of three-dimensional structures. Coordinate geometry is introduced and practiced using games.

WORKSHOP C: The focus of the morning session is “MEASUREMENT”. The role of estimation in measurement, the need for both standard and non-standard measures, and the role of fraction understanding in the processes of measuring, are key focal points in this workshop.

Participants explore these ideas, then rotate through a set of measurement activities on area, perimeter, volume, capacity, weight and time. These activities are suitable for use by small groups or as classroom learning centers. A class project using a variety of measurement skills is also included.

The focus of the afternoon session is “NUMBER SENSE: FRACTIONS”. Participants review a number of interpretations (or models) of the concept of a fraction — including part of a region, part of a set, part of a line — and do activities related to these interpretations. The focus is on developing conceptual understanding of fractions using various games and manipulatives; participants will add, subtract, and find equivalent fractions without using formal computational procedures.

WORKSHOP D: The focus of the morning session is on “PROBABILITY AND DISCRETE MATH”. One of the major themes of this workshop, and of discrete mathematics, is to count systematically the number of ways something can be done. Systematic counting techniques emerge from simple problems like “How many different outfits can you wear if you have two shirts and three pairs of shorts?”, and can be applied to more complicated examples. Various techniques for systematic counting will be introduced, including charts and tree diagrams, and we will discuss how students can progress from solving problems by randomly listing the possibilities to listing or counting them systematically. Systematic counting is important for probability because the initial task in many probability problems is to determine the number of possible outcomes. A second major theme of this workshop is equally likely outcomes.
Recognizing which outcomes are equally likely is the key to finding the solution to many probability problems, like the probability of tossing a seven with two number cubes.

The focus of the afternoon session is “DISCRETE MATH AND PROBLEM SOLVING”. The session has four themes — games, algorithms, problem solving and vertex-edge graphs. Algorithms are sets of instructions, like directions for getting from your classroom to the school office. When playing a game, students learn to follow the instructions for playing the game, but can also, in some cases, develop instructions for winning the game. Problem-solving techniques, like “try a simpler problem” are useful in these situations, as well as in solving problems involving graphs, a major theme in discrete mathematics. The vertex-edge graphs in discrete mathematics consist simply of points (vertices) connected by lines (edges). Many problems in discrete mathematics involve looking at all of the possibilities and finding the best alternative. Participants will discuss finding the shortest route on a map and finding a way of coloring a map using the smallest number of colors, two important applications of vertex-edge graphs.

STANDARDS AND ASSESSMENT STRANDS ADDRESSED:

STANDARD #1: “Number Sense, Operations, and Properties” is addressed in Workshops A and C.

STANDARD #2: “Geometry and Measurement” is addressed in Workshops B and C.

STANDARD #3: “Patterns and Algebra” is addressed in Workshop B.

STANDARD #4: “Data Analysis, Probability, and Discrete Mathematics” is addressed in Workshops A and D.

(Note: STANDARD #5, “Mathematics Processes” is addressed and modeled in all four workshops.)

Dates and Locations (workshop codes follow dates)

RUTGERS UNIVERSITY, PISCATAWAY, NJ

| Workshop A | 11/01/05 (A 110105) | 12/01/05 (A 120105) | 01/18/06 (A 011806) | 02/06/06 (A 020606) |
| Workshop B | 11/02/05 (B 110205) | 12/02/05 (B 120205) | 01/17/06 (B 011706) | 02/07/06 (B 020706) |
| Workshop C | 11/03/05 (C 110305) | 12/05/05 (C 120505) | 01/10/06 (C 011006) | 02/01/06 (C 020106) |
| Workshop D | 11/04/05 (D 110405) | 12/06/05 (D 120605) | 01/09/06 (D 010906) | 02/02/06 (D 020206) |

RUTGERS UNIVERSITY, NEWARK, NJ

| Workshop A | 12/08/05 (A 120805) | 01/23/06 (A 012306) |
| Workshop B | 12/09/05 (B 120905) | 01/24/06 (B 012406) |
| Workshop C | 12/12/05 (C 121205) | 01/31/06 (C 013106) |
| Workshop D | 12/13/05 (D 121305) | 01/30/06 (D 013006) |

FREEHOLD, NJ

| Workshop A | 12/16/05 (A 121605) |
| Workshop B | 01/06/06 (B 010606) |
| Workshop C | 01/11/06 (C 011106) |
| Workshop D | 02/03/06 (D 020306) |

WORKSHOPS IN YOUR DISTRICT— Any or all of these workshops can also be scheduled within a district. Please call (732) 445-2825 to arrange.
Payment and Registration Information

To encourage implementation at your school, we are offering discounts to schools or districts that send multiple registrations on a single purchase order and to individuals that sign up for four (4) or more workshops. See the pricing schedule below:

- 1-3 Workshop Registrations: $195 each
- 4-9 Workshop Registrations (single individual or group): $175 each (10% discount)
- 10 or more Workshop Registrations (single individual or group): $155 each (20% discount)

Workshop fees include all materials, a continental breakfast and lunch.

Payment may be made by purchase order or check. Purchase orders and/or checks should be made out to: K-4 Workshops – Rutgers, the State University. See address below.

How to register

**NEW! WEB:** Register at http://dimacs.rutgers.edu/k12-prof-dev/

**PHONE:** (732)445-4065 from Monday through Friday, from 8:00 a.m. to 4:00 p.m.

**FAX:** Fax form to (732)445-2894, 24-hours a .day

**MAIL:** Send registration to:

  K-4 Workshops
  CMSCE, Rutgers University
  SERC Building, Busch Campus, 118 Frelinghuysen Road
  Piscataway, NJ 08854

*Admittance to the workshop may be denied if no payment method is submitted by the day of the workshop and billing information is not completed.* Once your registration is received complete with billing information, a confirmation letter including a map, directions, and parking information will be sent to you.

Cancellation Policy

A full refund minus a $25 processing fee per registration will be issued to the appropriate party if this office is notified in writing at least five (5) business days prior to the workshop date. If you cancel within five (5) business days, or if neither you nor a substitute attends the workshop without notifying us, no refund will be issued.

All workshops are subject to cancellation for insufficient enrollment, in which case participants will be notified five (5) business days in advance.

Other Programs

To obtain further information about our programs call (732)445-4065, email programs@dimacs.rutgers.edu or visit the website at http://dimacs.rutgers.edu/k12-prof-dev/
Registration Form

Standards-Based Mathematics Workshops for Grade K-4 Teachers

To reserve a space in the workshop, send in the registration form promptly; do not wait for your district to submit materials for you. Your registration will not be processed unless the billing information below is completed.

(Use a separate copy of this form for each registrant – attach multiple registrations from same school/district together)

Last Name ______________________________________________________________________
First Name ______________________________________________________________________
Middle Initial ______________________________________________________________________
Badge Name (First Name to be printed on Name Badge i.e. “James” = “Jim”) ____________________________
Principal Name __________________________________________________________________
Supervisor Name __________________________________________________________________
Grade(s) Taught __________________________________________________________________
School __________________________________________
School Address ____________________________________________________________________
School City ______________________________ State ______________ Zip____________________
Work Phone ______________________________________________________________________
Fax ____________________________________________________________________________
Home Address ______________________________________________________________________
Home City ______________________________ State ______________ Zip____________________
Home Phone (need in case of inclement weather cancellation) ____________________________
Email __________________________________________________________________________

Please check appropriate box: (remember to attach separate forms for each registrant):
☐ 1-3 Workshop Registrations: ______x $195 = __________total due
☐ 4-9 Workshop Registrations: ______x $175 = __________total due
☐ 10 or more Workshop Registrations: ______x $155 = __________total due
☐ Payment will be made by purchase order (fill out form below).
☐ Payment will be made by personal check (include with registration).

Billing Information (Required) — Please fill in the following if using a Purchase Order for payment and the billing address is different from the school address above. If it is the same, please check the box below. Registrations will not be processed if the following information is not completed. ☐ Please use the work address above

Billing Department Name ______________________________________________________________
Billing Address ____________________________________________________________________
Billing City ______________________________ State ____________ Zip _______________

Please enter the workshop code number for each workshop you would like to attend (to register for more than eight, copy and attach additional sheets):

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ASK Workshops

Please pass this brochure along to:

☐ Mathematics Supervisor
☐ Curriculum Leader
☐ Colleague