# Program Descriptions for Board of Education

Disclaimers:

1. Recommendation of instructional methods or models/programs with a proven track record is not intended as a guarantee that the program will be successful as implemented in a particular school. Prior to or concurrently with adopting any model/program, a school is expected to align its curriculum with the Standards of Learning. School divisions are permitted to choose instructional methods or models/programs that are not recommended so long as they meet the Board of Education's criteria.
2. Some of the instructional models/programs have an associated textbook that may not be on the list of instructional materials reviewed or recommended as part of the state textbook adoption process. Recommendation of a model or instructional method should not be interpreted as endorsement of the associated textbook materials. Before adopting any model/program with associated materials, the school should determine whether there is sufficient Standards of Learning correlation for the grade level or course where the method will be used.
3. Products and services on the list may not be available in all areas of the commonwealth. School divisions are responsible for negotiating contracts with vendors for products or services.

## Revised

## November 20, 2002

# Models/Programs that Include Instructional Methods That Have Proven to Be Successful with Low-Achieving Students

The revised *Regulations Establishing Accrediting Standards for Public Schools in Virginia* (SOA), effective September 28, 2000, require schools accredited with warning in English or mathematics to adopt and implement instructional methods that have a proven track record of success at raising student achievement. The Board of Education is required to publish a list of recommended instructional methods, which may be amended from time to time. The following is a list of models/programs that incorporate instructional methods that have proven to be successful in working with low achieving students. Prior to or concurrently with adopting any model/program a school is expected to align its curriculum with the Standards of Learning.

School divisions are permitted to choose instructional methods or models/programs that are not on the Board of Education's published list so long as they meet the following criteria.

Criteria for Recommended Models/Programs

1. **Evaluation-based evidence of effectiveness:** Has the model/program been successfully implemented with low achieving students? Is there convincing documentation, through reliable measures or practical experiences before and after the intervention, that educationally significant improvement in student achievement occurred?
2. **Implementation:** Does the program explain the essential ingredients necessary to make the program fully operational, including estimates of the costs, with respect to time and money, of implementation?
3. **Replicability:** Has the model/program been successfully implemented with low achieving students in multiple locations?
4. **Correlation with or adaptability to the Virginia Standards of Learning in English or mathematics**: Does the content of the model/program correlate with the Virginia Standards of Learning in English or mathematics? Can the content of the model/program be adapted to support the Virginia Standards of Learning?
5. **Capacity for technical assistance:** Do the program managers have the capacity, in terms of technical assistance, to provide the staff development, consultation, and support necessary for successful implementation in a number of Virginia schools?

## Models/Programs that Include Instructional Methods That Have Proven to Be Successful with Low-Achieving Students

| Content-Based Models/Programs | CSRD Model* | Externally Recommended | Contact Information |
|---|---|---|---|
| **Direct Instruction** | **X** | | Bob Fox<br>National Institute for Direct Instruction<br>PO Box 11248<br>Eugene, OR 97440<br>Phone: 877-485-1973 or 541-485-1973<br>Fax: 541-683-7543<br>Web site: http://www.nifdi.org<br><br>Bryan Wickman<br>Association for Direct Instruction<br>P.O. Box 10252<br>Eugene, OR 97440<br>Phone: 541-485-1293<br>Fax: 541-683-7543<br>Web site: http://www.adihome.org<br><br>Kendra Feinberg<br>JP Associates<br>131 Foster Avenue<br>Valley Stream, NY 11580<br>Phone: 516-561-7803<br>Fax: 516-561-4066<br>Web site: http://www.jponline.com |
| **Success for All** | **X** | | Success for All<br>200 West Towsontown Boulevard<br>Baltimore, MD 21204-5200<br>Phone: 800-548-4998<br>Fax: 410-324-4444<br>E-mail: sfa@successforall.net<br>Web site: http://www.successforall.net |
| **Modern Red Schoolhouse** | **X** | | Karen White<br>Production Manager<br>Modern Red Schoolhouse<br>208 23rd Avenue North<br>Nashville, TN 37203<br>Phone: 615-320-8804<br>Fax: 615-320-5366<br>E-mail: kwhite@mrsh.org<br>Web site: http://www.mrsh.org |

| Content-Based Models/Programs | CSRD Model* | Externally Recommended | Contact Information |
|---|---|---|---|
| **Roots and Wings** | **X** | | Roots & Wings<br>200 West Towsontown Boulevard<br>Baltimore, MD 21204-5200<br>Phone: 800-548-4998<br>Fax: 410-324-4444<br>E-mail: sfa@successforall.net<br>Web site: http://www.successforall.net |
| **Core Knowledge** | **X** | | Constance Jones<br>Director of School Programs<br>Core Knowledge Foundation<br>801 East High Street<br>Charlottesville, VA 22902<br>Phone: 804-977-7550<br>Fax: 804-977-0021<br>E-mail: jonescore@aol.com<br>Web site: http://www.coreknowledge.org |
| **Cooperative Integrated Reading and Composition (CIRC)** | **X** | | Dorothy Sauer<br>CIRC Program<br>Center for Social Organization of Schools<br>3505 North Charles Street<br>Baltimore MD 21218<br>Phone: 1-800-548-4998<br>Fax: 410-516-6671<br>Web site: http://www.successforall.com |
| **Breakthrough to Literacy** | **X** | | Trudy Larson<br>7651 Clifton Road<br>Fairfax Station, VA 22039<br>Phone: 703-323-9306<br>Fax: 703-323-9306<br>Web site: http://www.earlyliteracy.com |
| **National Writing Project (teacher training project)** | **X** | | Richard Sterling<br>Executive Director<br>National Writing Project<br>5511 Tolman Hall, #1670<br>University of California<br>Berkeley, CA 94720<br>Phone: 510-642-0963<br>Fax: 510-642-4545<br>E-mail: nwp@socrates.berkeley.edu<br>Web site: http://www-gse.berkeley.edu/Research/NWP/nwp.html |

| Content-Based Models/Programs | CSRD Model* | Externally Recommended | Contact Information |
|---|---|---|---|
| **Saxon Mathematics** | | **X** | Saxon Publishers, Inc.<br>2450 John Saxon Blvd.<br>Norman, OK 73071<br>Phone: 800-284-7019<br>Fax: 405-360-4205<br>Web site: http://www.saxonpub.com |
| **Cortez Management Mathematics Lab System** | | **X** | Cindy Hyman<br>Vice President<br>Cortez Management<br>100 Bridge St., Bldg. A<br>Hampton, VA 23669<br>Phone: 757-722-2035 |
| **Open Court Reading** | | **X** | Lisa Popek<br>4400 Newport Drive<br>Richmond, VA 23227<br>Phone: 804-264-6199<br>Web site: http://www.sra4kids.com<br><br>Mary Ann Harris<br>1443 Washington Blvd.<br>Huntington, W. VA 25701<br>Phone: 304-697-5907 |
| **Academy of Reading** | | **X** | Dennis Eichhorn or Judy Reed<br>Instructional Impact, Inc.<br>2139 N Street, NW<br>Washington, DC 20037<br>Ph# 202- 296-1046 |
| **Plaid Phonics** | | **X** | Debbie Owens<br>11636 Smoketree Drive<br>Richmond, VA 23236<br>Phone # 804-797-8414<br>Debbie.owens@pearsonlearning.com |

*Comprehensive School Reform Demonstration Program (CSRD): As part of the federally funded CSRD program, the Virginia Department of Education has awarded competitive grants to school divisions to implement these research-based models in specific Virginia schools.

| Content-Based Models/Programs | CSRD Model* | Externally Recommended | Contact Information |
|---|---|---|---|
| **Earobics**[1] | | **X** | Karen Niemi<br>Cognitive Concepts, Inc.<br>990 Grove Street, Suite 3<br>Evanston, IL 60201<br>Phone: (847) 570-3581<br>E-mail: kniemi@earobics.com |
| **Sadlier Phonics/Word Study Program** | | **X** | Linda Feeley<br>Sadlier-Oxford Publishers<br>Phone: (804) 798-4402 |
| **Sing, Spell, Read & Write** | | **X** | Debbie Owens<br>Pearson Learning<br>11636 Smoketree Drive<br>Richmond, VA 23236<br>Phone: (804) 797-8414<br>E-mail:<br>debbie.owens@pearsonlearning.com |
| **BoxerMath**[2] | | **X** | Boxer Learning<br>Charisse Smith<br>800-736-2824 |
| **Cognitive Tutor**[2] | | **X** | Tom Begandy<br>1200 Penn Avenue<br>Suite 150<br>Pittsburgh, PA 15222<br>412-683-6284 |

[1] This instructional model/program is a supplemental program to be used with a basal reading program.
[2] This instructional model/program is a supplemental program to be used with a basal mathematics program.

## Direct Instruction

**IN BRIEF**

| | |
|---|---|
| Developer | Siegfried Englemann |
| Year Established | 1968 |
| # Schools Served (Jan. 1968) | 150 |
| Level | K-6 |
| Primary Goal | To improve academic performance so that by fifth grade, students are at least a year and a half beyond grade level |
| Main Features | *Field-tested reading, language arts, and math curricula<br>*Highly scripted instructional strategies<br>*Extensive training |
| Results | Numerous large- and small-scale evaluations have found significant positive effects on student achievement in reading, language arts, and/or mathematics |
| Impact on Instruction | To facilitate cross-class grouping, schools must coordinate schedules so that all teachers at a particular grade level teach major subjects at the same time |
| Impact on Organizational Staffing | Some teachers may be asked to serve as peer coaches |
| Impact on Schedule | To facilitate cross-class grouping, schools must coordinate schedules so that all teachers at a particular grade level teach major subjects at the same time |
| Subject-Area Programs Provided by Developer | Yes |
| Students Served | |
| Title I | Yes |
| English-language learners | Yes |
| Urban | Yes |
| Rural | Yes |
| Parental Involvement | Not emphasized |
| Technology | None required |
| Materials | Detailed materials provided by publisher |

**Origin/Scope**
Direct Instruction has evolved from a theory of instruction developed by Siegfried Englemann of the University of Oregon. Englemann's early works focused on beginning reading, language, and math and were published by Science Research Associates in 1968 under the trade name DISTAR (Direct Instruction System for Teaching And Remediation). Over the past three decades, the original curricula have been revised and new ones developed through sixth grade (plus remedial programs and science programs for higher grades). These curricula have been incorporated into the comprehensive school reform model known as the Direct Instruction Model, which has been implemented in some 150 schools nationwide. Direct Instruction curricular materials have been used in hundreds more schools.

**General Description**
Englemann's theory of instruction is that learning can be greatly accelerated in any endeavor if instructional presentations are clear, rule out likely misinterpretations, and facilitate generalizations. He and his associates have developed over 50 instructional programs based on this theory. Each program is shaped through field tryouts. Student errors are carefully evaluated and lessons revised prior to publication. The lessons are carefully scripted and tightly sequenced.

The comprehensive Direct Instruction Model incorporates teacher development and organizational components needed to optimize use of these programs. Through substantial training and in-class coaching, teachers in the lower grades learn to present highly interactive lessons to small groups. Students make frequent oral responses, and teachers monitor and correct errors immediately. Students are placed at appropriate instructional levels based on performance, so those who learn rapidly are not held back and those who need additional assistance receive it. The model calls for inclusion of students with special needs except in the most extreme cases.

Although the Direct Instruction Model incorporates curricula for all areas, its reading, language arts, and math curricula can be implemented separately.

**For more information, contact:**

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Bryan Wickman
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Phone: 541-485-1293
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(The ADI refers schools and districts to Direct Instruction consultants around the U.S.)

Kendra Feinberg
JP Associates
131 Foster Avenue
Valley Stream, NY 11580
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Fax: 516-561-4066

## Success for All

**IN BRIEF**

| | |
|---|---|
| Developer | Robert Slavin, Nancy Madden, and a team of developers from Johns Hopkins University |
| Year Established | 1987 |
| # Schools Served (Jan. 1998) | 747 |
| Level | PreK-6 |
| Primary Goal | Ensuring that all children learn to read |
| Main Features | *Schoolwide reading curriculum<br>*Cooperative learning<br>*Grouping by reading level (reviewed by assessment every 8 weeks)<br>*Tutoring for students in need of extra assistance<br>*Family support team |
| Results | Students in Success for All schools have consistently outperformed students in control schools on reading tests; effects have been even more pronounced for students in the bottom quartile |
| Impact on Instruction | Prescribed curriculum and cooperative learning in reading classes; other subjects not affected (see Roots & Wings for a description of other curricular components that can be added) |
| Impact on Organizational Staffing | Building advisory committee; full-time facilitator; family support team; tutors |
| Impact on Schedule | Daily 90-minute reading periods; tutoring |
| Subject-Area Programs Provided by Developer | Yes (reading) |
| Students Served | |
| Title I | Yes |
| English-language learners | Yes |
| Urban | Yes |
| Rural | Yes |
| Parental Involvement | Family support team works to increase parental involvement |
| Technology | None required |
| Materials | Detailed materials provided |

**Origin/Scope**
Success for All was founded by Robert Slavin, Nancy Madden, and a team of developers from Johns Hopkins University. It was first implemented in a single elementary school in Baltimore in 1987. The following year it expanded to six schools (five in Baltimore and one in Philadelphia). By January 1998, it had grown to 747 schools in 40 states.

**General Description**
Success for All restructures elementary schools (usually high poverty Title I schools) to ensure that every child learns to read in the early grades. The idea is to prevent reading problems from appearing in the first place and to intervene swiftly and intensively if problems do appear.

Success for All prescribes specific curricula and instructional strategies for teaching reading, including shared story reading, listening comprehension, vocabulary building, sound blending exercises, and writing activities. Teachers are provided with detailed materials for use in the classroom. Students often work cooperatively, reading to each other and discussing story content and structure. From second through sixth grade, students use basals or novels (but not workbooks). All students are required to spend 20 minutes at home each evening reading books of their choice.

Students are grouped according to reading level for one 90-minute reading period per day. The rest of the day they are assigned to regular age-grouped grades. Every eight weeks, teachers assess student progress using formal measures of reading comprehension as well as observation and judgment. The assessments determine changes in the composition of the reading groups and help identify students in need of extra assistance. Those students receive one-on-one tutoring for 20 minutes per day at times other than regular reading or math periods. First graders get priority for tutoring. Tutors are generally certified teachers, although well-qualified paraprofessionals may tutor children with less severe reading problems.

Because parental involvement is considered essential to student success, each Success for All school forms a Family Support Team, which encourages parents to read to their children, involves parents in school activities, and intervenes when problems at home interfere with a child's progress in school. The operation of Success for All is coordinated at each school by a full-time facilitator who helps plan the program and coach teachers. Finally, an advisory committee composed of the principal, facilitator, teacher and parent representatives, and family support staff meets regularly to review the progress of the program.

**For more information, contact:**
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Phone: 800-548-4998
Fax: 410-324-4444
E-mail: sfa@successforall.net  Web site: http://www.successforall.net

## Modern Red Schoolhouse

**IN BRIEF**

| | |
|---|---|
| Developer | Hudson Institute |
| Year Established | 1992 |
| # Schools Served (Jan. 1998) | 43 |
| Level | K-12 |
| Primary Goal | To combine the rigor and values of the little red schoolhouse with the latest classroom innovations |
| Main Features | *Challenging curriculum<br>*Emphasis on character<br>*Integral role of technology<br>*High standards for all<br>*Individual education compact for each student |
| Results | Test scores of students in MRSh elementary schools have increased at multiple sites |
| Impact on Instruction | Teachers vary time and teaching approaches to ensure that all students pass "watershed assessments" in order to advance from primary to intermediate to upper divisions |
| Impact on Organizational Staffing | Technology specialist must be added to the staff |
| Impact on Schedule | Teachers may need to reschedule their day to accommodate interdisciplinary lessons and long-term projects |
| Subject-Area Programs Provided by Developer | Yes |
| Students Served | |
| Title I | Yes |
| English-language learners | Yes |
| Urban | Yes |
| Rural | Yes |
| Parental Involvement | Parents agree to help take responsibility for student performance through Individual Education Compacts; community helps define character development component |
| Technology | Sophisticated computer technology is required |
| Materials | Provided |

**Origin/Scope**
Modern Red Schoolhouse (MRSh) was developed in 1992 by the Hudson Institute, a private, non-profit research organization. There are 43 MRSh schools in 11 states.

**General Description**
MRSh works in partnership with schools throughout the country to reinvent the virtues of the little red schoolhouse in a modern context.

At an MRSh school, students master a rigorous curriculum, develop character, and promote the principles of democratic government. These elements of the traditional red schoolhouse are then combined with innovative teaching methodologies and student groupings, flexibility in organizing instruction and deploying resources, and advanced technology as a learning and instructional management tool.

The core principle of MRSh is that all students can and will reach high academic standards. Mastery of subject matter is the only acceptable goal, regardless of a child's background, learning style, or pace. Because students learn at different rates and in different ways, instructional methodologies and time spent on lessons vary. This way, students progress through the curriculum in the ways that are best suited to their individual strengths and abilities.

MRSh strives to help all students achieve high standards through the construction of a standards-driven curriculum; traditional and performance-based assessments; effective organizational patterns and professional-development programs; and effective community-involvement strategies.

The primary tool for monitoring continuing progress is the Individual Education Compact, an agreement negotiated by the students, parents, and teacher. This "educational road map" establishes measurable goals, details parent and teacher responsibility for helping the student achieve, and lists services the school, parents, or community should provide.

**For more information, contact:**
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Web site: http://www.mrsh.org

## Roots & Wings

**IN BRIEF**

| | |
|---|---|
| Developer | Robert Slavin, Nancy Madden, and a team of developers from Johns Hopkins University |
| Year Established | 1993 |
| # Schools Served (Jan. 1998) | 747 schools use Success for All; over 200 of these have added Roots & Wings components |
| Level | PreK-6 |
| Primary Goal | To guarantee that every child will progress successfully through elementary school |
| Main Features | *Research-based curricula<br>*One-to-one tutoring<br>*Family support team<br>*Cooperative learning<br>*On-site facilitator<br>*Building advisory team |
| Results | Students in Roots & Wings schools have outperformed students in control schools |
| Impact on Instruction | Combination of prescribed curriculum with teacher-developed instruction in the areas of literacy, math, and social and scientific problem-solving |
| Impact on Organizational Staffing | Family support team; full-time facilitator; building advisory committee; one-to-one tutoring |
| Impact on Schedule | Schedule may need to be adjusted to incorporate curricular requirements |
| Subject-Area Programs Provided by Developer | Yes (reading, math, science, social studies) |
| Students Served | |
| Title I | Yes |
| English-language learners | Yes |
| Urban | Yes |
| Rural | Yes |
| Parental Involvement | Family support team works to increase strong school-home connections |
| Technology | None required |
| Materials | Provided (as part of the cost of design) |

**Origin/Scope**
Roots & Wings, created in 1993 by Robert Slavin, Nancy Madden, and a team of developers at Johns Hopkins University, is a comprehensive, whole-school reform model designed to place a high floor under the basic skills achievement of all students while building problem solving skills, creativity, and critical thinking. As of January 1998, Success for All, the reading component of Roots & Wings, is operating in 747 schools in 40 states. Over 200 of these schools have added the math, science, and social studies components that constitute Roots & Wings.

**General Description**
The purpose of Roots & Wings is to create well-structured curricular and instructional approaches for all elementary subjects, pre-kindergarten to grade 6, based on well-evaluated components and well-researched principles of instruction, assessment, classroom management, motivation, and professional development.

Roots & Wings builds on the Success for All program, initiated in 1987, which provides research-based curricula for students in pre-kindergarten through grade six in reading, writing, and language arts; one-to-one tutoring for primary grade students struggling in reading; and extensive family support services (see description of Success for All). To these, Roots & Wings adds MathWings, a practical, constructivist approach to mathematics for grades 1-5, and WorldLab, an integrated approach to social studies and science emphasizing simulations and group investigations for grades 1-5.

Roots refers to strategies that every child needs in order to meet world-class standards and to have good language skills, reading skills, and health. It involves early intervention for at-risk children, research-based curricula with extensive training support, one-to-one tutoring, integrated health and social services, and family support. Wings refers to a curriculum and instruction strategy designed to let children soar. Each school has a full-time facilitator to help implement the program, a Family Support Team to foster community and parent involvement, and a Building Advisory Team to evaluate the entire school climate and advise the principal on general direction and goals.

**For more information contact:**
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200 West Towsontown Boulevard
Baltimore, MD 21204-5200
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Web site: **http://www.successforall.net**

## Core Knowledge

**IN BRIEF**

| | |
|---|---|
| Developer | E. D. Hirsch, Jr. |
| Year Established | 1986 |
| # Schools Served (Jan. 1998) | 700+ |
| Level | K-8 |
| Primary Goal | To help students establish a strong foundation of core knowledge for higher levels of learning |
| Main Features | *Sequential program of specific grade-by-grade topics for core subjects<br>*Rest of curriculum (approximately half) left for schools to design |
| Results | Single school quantitative and qualitative data demonstrate improved student achievement and equity -- specifically for students in lower performing schools |
| Impact on Instruction | Instructional methods (to teach core topics) are designed by individual teachers/schools |
| Impact on Organizational Staffing | Minimal |
| Impact on Schedule | Minimal |
| Subject-Area Programs Provided by Developer | Yes |
| Students Served | |
| Title I | Yes |
| English-language learners | Yes |
| Urban | Yes |
| Rural | Yes |
| Parental Involvement | Schools are expected to involve parents in planning and resource development |
| Technology | None required |
| Materials | Detailed material provided |

**Origin/Scope**
The Core Knowledge Foundation is an independent, non-profit, non-partisan organization founded in 1986 by E. D. Hirsch, Jr. The foundation's essential program, a core curriculum titled the Core Knowledge Sequence, was first implemented in 1990. By January 1998, it was being used in more than 700 schools in 42 states.

**General Description**
Core Knowledge is an approach to curriculum based on the work of E. D. Hirsch, Jr. and described in his books Cultural Literacy and The Schools We Need and Why We Don't Have Them. The focus of the Core Knowledge approach is on teaching a common core of concepts, skills, and knowledge that characterize a "culturally literate" and educated individual. The purpose of the Core Knowledge approach is to increase academic performance as demonstrated on national and state norm- and criterion-referenced tests, to help narrow the gap between academic "haves" and "have nots," and to build consensus among teachers, parents, and administrators.

Core Knowledge is based on the principle that the grasp of a specific and shared body of knowledge will help students establish strong foundations for higher levels of learning. Developed through research examining successful national and local core curricula and through consultation with education experts in each subject area, the Core Knowledge sequence provides a consensus-based model of specific content guidelines for students in the elementary grades. It offers a progression of detailed grade-by-grade topics of knowledge in history, geography, mathematics, science, language arts, and fine arts, so that students build on knowledge from year to year in grades K-8. Instructional strategies are left to the discretion of teachers.

The Core Knowledge sequence typically comprises 50 percent of a school's curriculum; the other 50 percent allows schools to meet state and local requirements and teachers to contribute personal strengths. Teachers are also expected to provide effective instruction in reading and mathematics. The Core Knowledge curriculum is detailed in the Core Knowledge Sequence Content Guidelines for Preschool through Grade Eight and illustrated in a series of books entitled What Your (First-, Second- etc.) Grader Needs to Know.

Parental involvement and consensus building contribute to the success of the Core Knowledge sequence. Parents and community members are invited to be involved in obtaining resources, planning activities, and developing a schoolwide plan. The schoolwide plan integrates the Core Knowledge content with district and state requirements and assessment instruments. Additionally, parents and teachers are encouraged to cooperate in planning learning goals and lesson plans.

**For more information, contact:**
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Web site:
http://www.coreknowledge.org

## Cooperative Integrated Reading and Composition (CIRC)

**IN BRIEF**

| | |
|---|---|
| Developer | Center for Social Organization of Schools, Johns Hopkins University |
| Year Established | 1986 |
| # Schools Served (Jan. 1998) | About 1,000 |
| Level | 2-8 |
| Primary Goal | To improve reading and writing skills |
| Main Features | *Story-related activities in teams<br>*Direct instruction in reading comprehension<br>*Integrated language arts/writing |
| Results | Improved reading and writing achievement |
| Impact on Instruction | Increased cooperative learning practices; focus on literature and basals; focus on higher-order learning |
| Impact on Organizational Staffing | Reorganizes classroom for student teamwork; requires no extra staffing |
| Impact on Schedule | Longer reading periods are encouraged |
| Students Served | |
| Title I | Yes |
| English-language learners | Yes, through Bilingual Cooperative Integrated Reading and Composition (BCIRC) |
| Urban | Yes |
| Rural | Yes |
| Parental Involvement | Encouraged but not required |
| Technology | Schools apply existing technology |
| Materials | Teachers' manuals; curriculum materials matched to basals and novels |

**Origin/Scope**
Research and development on cooperative learning began at the Johns Hopkins University Center for Social Organization of schools in 1970. Cooperative Integrated Reading and Composition (CIRC) was developed in collaboration with schools during 1986-88 to provide elementary schools with a full comprehensive reading and writing curriculum based on research on cooperative learning and research on effective reading and writing practices. CIRC is now used in grades 2-8. Development of materials and processes has continued based on use of the program in schools. Program developers include Robert Slavin, Robert Stevens, Nancy Madden, and Anna Marie Farnish.

In 1987, research and development of Bilingual Cooperative Integrated Reading and Composition (BCIRC), the program's Spanish adaptation, was begun.

**General Description**
CIRC provides curricula and instructional practices for teaching reading and writing. The practices include use of reading groups, students working in teams, story-related activities, partner reading, story grammar and story-related writing, words-out-loud exercises, word meaning exercises, story retell, partner checking, regular assessment, direct instruction in reading comprehension, independent reading, and integrated writing and language arts. CIRC includes curriculum materials to be used in these processes.

**For more information, contact:**
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Web site: http://www.successforall.com

## Breakthrough to Literacy

**IN BRIEF**

| | |
|---|---|
| Developer | Carolyn Brown and Jerry Zimmermann, University of Iowa |
| Year Established | 1981 |
| # Schools Served (Jan. 1998) | Over 1,850 |
| Level | K-2 |
| Primary Goal | To teach connection of oral language to print |
| Main Features | *Daily story reading<br>*Interactive computer software<br>*Print materials to integrate computer curriculum<br>*Children progress at their own pace |
| Results | Breakthrough students in several districts have scored higher on standardized reading tests than students in control groups have |
| Impact on Instruction | Suggested routine for 10-15 minutes of reading interaction and 15-20 minutes on the computer (in reading classes only) |
| Impact on Organizational Staffing | None |
| Impact on Schedule | None |
| Students Served | |
| Title I | Yes |
| English-language learners | In the developmental stages |
| Urban | Yes |
| Rural | Yes |
| Parental Involvement | Parents are asked to read to their child and listen to the child "read" to them every night |
| Technology | Computer software is provided; 2-3 computers and 1 printer per classroom are necessary |
| Materials | Provided |

**Origin/Scope**
Breakthrough to Literacy was founded by Carolyn Brown and Jerry Zimmermann in 1981 at the University of Iowa. Since its initial implementation in Dallas public schools in 1994, Breakthrough (previously called Foundations in Reading) has been adopted in over 1,100 schools in 19 states, serving over 25,000 children.

**General Description**
Breakthrough to Literacy focuses on teaching pre-kindergarten through second grade students to relate oral language and pictures to print. The program provides each child, at his or her level of language/literacy development, stories and access to direct and explicit instruction for phonemic awareness. This is achieved through the use of "big books," pupil books, and computer modules.

The typical Breakthrough classroom focuses on one big book per week (10-15 minutes per day). The book is read to the children every day with a different objective. On Monday, for example, the objective is introduction. The teacher introduces the author and illustrator and reads the book to the students. They discuss what they liked or disliked about it and then the teacher reads it again. On Tuesday, the objective is review. The teacher asks the children to recall what they learned the previous day and to role play based on the story's characters. Wednesday, integration is the focus. The children are asked to relate what they've learned to something in their own lives; and so on through Friday.

Children also spend 15-20 minutes per day at the computer making connections between what they have "read" and what they see on the computer screen, and vice versa. When the teacher chooses a new big book, the children have already seen those words on the computer several times. This combination of literature-based instruction and instructional technology is intended to help the children develop better phonemic awareness, enhance their vocabulary development, and promote an understanding of sound-symbol relationships. Children progress through the program at their own pace due to daily one-on-one sessions with teachers and computers.

The program does not end in the classroom, however. Parents are urged to read to their children and have stories "read" to them every night.

**For more information, contact:**
Henry Layne
The Wright Group
19201 120th Avenue NE
Bothell, WA 98011
Phone: 800-523-2371, ext. 3433
Fax: 425-486-7704

## National Writing Project

**IN BRIEF**

| | |
|---|---|
| Developer | James Gray, University of California, Berkeley |
| Year Established | 1974 |
| # Schools Served (Jan. 1998) | 160 sites |
| Level | K-16 |
| Primary Goal | To improve the teaching of writing |
| Main Features | *Teachers-teaching-teachers model of professional development<br>*Local and national networks of exemplary practitioners<br>*Professional development programs designed collaboratively with schools and districts to reflect local needs<br>*Writing promoted as a tool for learning across the curriculum |
| Results | In two studies, NWP students (including English-language learners) have had higher grades, writing assessment scores, and/or college placement rates than students in control groups |
| Impact on Instruction | Provides strategies for linking instruction, curriculum, standards, and assessment in the teaching of writing |
| Impact on Organizational Staffing | None required |
| Impact on Schedule | None required |
| Students Served | |
| Title I | Yes |
| English-language learners | Yes |
| Urban | Yes |
| Rural | Yes |
| Parental Involvement | Professional development programs can be designed with parent engagement components |
| Technology | Professional development programs can be designed with technology components |
| Materials | None required |

**Origin/Scope**
The National Writing Project (NWP) began in 1974 at the University of California, Berkeley where its founder, James Gray, established a program for K-16 teachers called the Bay Area Writing Project. The NWP has now been replicated at 160 sites in 46 states and Puerto Rico.

**General Description**
The NWP has three major goals: (a) to improve the teaching of writing at all grade levels, (b) to improve professional development programs for teachers, and (c) to improve the professional standing of classroom teachers. Writing Project sites are typically housed in universities and serve multiple schools and school districts. Local sites accomplish these goals by supporting a K-16 network of exemplary teachers of writing who are able to work with schools around their professional development needs.

In practice, each local site identifies and recruits exemplary teachers for an annual invitational institute on its campus. Most often held in the summer, this intensive institute convenes teachers to demonstrate and examine their approaches to teaching writing; consider strategies for using writing as a tool in all subject areas; learn about how to teach writing by writing themselves; study theory and research underpinning best practices in the teaching of writing; and prepare themselves to lead professional development programs in the schools during the academic year.

Writing project workshops in the schools, then, are characterized first by the fact that they are taught by credible teachers, the graduates of the invitational institutes. Second, these workshops are tailored to the needs of the contracting school or district. The local project works in concert with the school faculty to design full professional development programs with sessions matched to the school, teacher, and student context. Programs are conducted in a series, rather than as one-shot events, so that teachers can receive support as they make changes in their practices. Third, writing project programs can be designed to include features like peer coaching or to work with regular school support structures like school improvement committees or grade level teams.

National Writing Project sites also provide an array of other programs to serve individual teachers and schools, such as open enrollment summer institutes, teacher research groups, assessment workshops, emergent literacy programs, a series on writing across the curriculum, support for new teachers, writing and reading conferences, young writer's programs, seminars and study groups, and parent workshops. Program offerings at local sites typically reflect the needs and interests of teachers in their service areas.

**For more information, contact:**

Richard Sterling
Executive Director
National Writing Project
5511 Tolman Hall, #1670
University of California
Berkeley, CA 94720
Phone: 510-642-0963
Fax: 510-642-4545
E-mail: nwp@socrates.berkeley.edu
Web site: http://www-gse.berkeley.edu/Research/NWP/nwp.html

## Saxon Mathematics

**IN BRIEF**

| | |
|---|---|
| Developer | Saxon Publishers |
| Year Established | 1980 |
| # of Schools Served | Estimated 5500 school districts in US<br>23 schools in Virginia |
| Level | K-12 |
| Primary Goal | To provide students an opportunity to learn mathematics through gradual development of concepts and the practice of those concepts extended over a considerable amount of time. |
| Main Features | K-12 mathematics program based upon incremental development, continual practice and review, and cumulative assessments at regular intervals. |
| Results | Schools that have used the program have shown increases on a variety of norm referenced and criterion referenced tests. |
| Impact on Instruction | Scripted lessons for teacher use. |
| Impact on Organizational Staffing | None |
| Impact on Schedule | None |
| Students Served | |
| Title I | Yes |
| English-language learners | Yes (Spanish version available) |
| Urban | Yes |
| Rural | Yes |
| Parental Involvement | No indication |
| Technology | No mention of use |
| Materials | Supplemental materials available through grade 8. |

**Origin/Scope**
The Saxon publishers, founded in 1980 by John Saxon, offers a complete mathematics program for teachers for grades K-12. It is now being used by an estimated 5500 school divisions across the United States. There are a number of urban centers that have adopted the Saxon mathematics program for use with special populations.

**General Description**
The Saxon mathematics program seeks to improve student learning of mathematics through gradual development of concepts and the practice of those concepts extended over a considerable amount of time. These methods are called incremental development and continual review. The Saxon program began with the publication of John Saxon's first book for Algebra I in 1980. By 1993, the company had published thirteen books and programs for kindergarten through high school calculus.

Saxon's mathematics program provides teachers with step by step lesson explanations and examples to use with students. The K-4 program provides students experiences with manipulatives and mental mathematics. The remainder of the program is based in the incremental development and continual review method.

**For more information, contact:**
Saxon Publishers, Inc.
2450 John Saxon Blvd.
Norman, OK 73071
Phone: 800-284-7019
Fax: 405-360-4205

## Cortez Management Math Lab Program

**IN BRIEF**

| | |
|---|---|
| Developer | Cortez Management Corporation |
| Year Established | 1999 |
| # of Schools Served | 17 in 1999 and 22 in 2000 |
| Level | Grade 4 – Algebra II |
| Primary Goal | To provide mastery based learning and individualized instruction in mathematics. |
| Main Features | Computers deliver the individualized instruction and the teachers act as "guides on the side" providing direct instruction in small groups of 5-7 students. |
| Results | In the 8 school divisions where the program was used, Standards of Learning scores showed significant increases. (119% in high school scores, 32 % in eighth grade scores, and 35% in fifth grade scores) |
| Impact on Instruction | Students are presented with content using technology and small group instruction. |
| Impact on Organizational Staffing | Usually requires a lab administrator |
| Impact on Schedule | None |
| Students Served | |
| Title I | No indication |
| English-language learners | No indication |
| Urban | Yes |
| Rural | Yes |
| Parental Involvement | No indication |
| Technology | Fully used |
| Materials | Program provides supporting materials needed for implementation. |

**Origin/Scope**
The Cortez Management Math Lab was developed at the request of Virginia division superintendents, based on the Virginia Tech Math Emporium. The Cortez Management Corporation initiated the pilot in January 1999 with four schools in three school divisions. It is now being used in 22 schools in nine school divisions.

**General Description**
The Cortez Management Math Lab incorporates mastery based learning and individualized instruction appropriate for grades four through Algebra II. Computers deliver the individualized instruction and the teachers act as "guides on the side" providing direct instruction in small groups of 5-7 students.

All the essential elements of the program implementation and costs are fully described and readily available. The program requires computer utilization for each student each instructional day, software purchases, a lab administrator, management fees, three days teacher training per year, and two days staff development during the school year for one teacher per school.

**For more information, contact:**
Ms. Cindy Hyman
Vice President
Cortez Management
100 Bridge Street Building A
Hampton, VA 23669
Phone: 757-722-2035

## Open Court Reading

**In Brief**

| | |
|---|---|
| Developer | SRA/McGraw Hill |
| Year Established | 2000; Newest series |
| #Schools Served (December 2000) | 200+ |
| Level | K - 6 |
| Primary Goal | To teach children to read through a well-designed, systemstic program, balancing phonics and literature. |
| Main Features | *Children read authentic literature in the Student Anthology by the middle of Grade 1.<br>*Carefully builds the foundations for reading<br>*Engages students in Constructing meaning from text<br>*Incorporates writing as a form of learning and personal communication<br>*Provides teachers with tools to teach |
| Results | Many studies show gains in student performance |
| Impact on Instruction | Three-part lesson plan:<br>Preparing to Read: the first part of each lesson includes the decoding and word building skills of reading.<br>Reading and Responding: The second part emphasizes comprehension skills and strategies as students read the lesson selected.<br>Integrating the Curriculum: The third section engages students in the writing process and develops essential language arts skills.<br>Independent Work Time: Meets individual needs through re-teaching. |
| Impact on Organizational Staffing | None |
| Impact on Schedule | None |
| Subject-Area Programs Provided by Developer | Yes. In reading. |
| Students Served | |
| Title I | Yes |
| English-language learner | Yes |
| Urban | Yes |
| Rural | Yes |
| Parental Involvement | Home Connection: Unit letters are sent to parents. |
| Technology | CDROM Phonics for grades K, 1, 2, and 3.<br>CDROM Lesson Planner for teachers<br>CDROM Research Assistant for teachers |
| Materials | Complete set of reading materials for each grade level. |

**Origin/Scope**
Open Court Reading has provided an approach to beginning reading instruction since the early 1960s. The approach has recognized that if children are to learn to read with fluency and comprehension, they need explicit, systematic skills instruction and rich experiences with authentic literature.

**General Description**
Open Court Reading is built upon the following principles: high expectations and support for all students; research based teaching (37 years); systematic, explicit phonics instruction; authentic literacy experience; and meaningful comprehension and integrated instruction.

**For more information, contact:**
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4400 Newport Drive
Richmond, VA 23227
Ph# 804-264-6199

Mary Ann Harris
1443 Washington Blvd.
Huntington, W. VA 25701
Ph# 304-697-5907

## Academy of Reading

| | |
|---|---|
| Developer | AutoSkill International Inc. |
| Year Established | 1995 |
| # 0f Schools Served | 100+ |
| Level | K – 12; Emphasis on Middle School |
| Primary Goal | For emerging readers: to create a solid foundation to support higher skills; foundations include phonemic awareness, decoding skills, and comprehension abilities.<br>For upper elementary and middle school students who struggle with reading: to give students a foundation in phonemic awareness and decoding skills that will improve comprehension. |
| Main features | Computer based instruction; battery of tests that provides teachers with the means to analyze in detail students' reading ability; a program designed for each student's reading profile. |
| Results | Research results from a wide range of studies show dramatic gains for middle school students; most schools in Virginia that have implemented the program have experienced solid gains in students' reading level; little data as of Spring 2000 on impact on SOL tests. |
| Impact on Instruction | Requires students to spend 30 minutes per day on Academy of Reading Program. |
| Impact on Organizational Staffing | None |
| Impact on Schedule | Time must be found for students to complete the program. Most schools that have adopted have developed a Middle School Reading block. |
| Subject-Area Programs Provided by Developer | Yes, in reading. |
| Students Served | |
| Title I | Yes |
| English-language learners | Yes |
| Urban | Yes |
| Rural | Yes |
| Parent Involvement | No specific program |
| Technology | Significant use of computers required. Either in a computer lab format or enough computers in a classroom to allow students who need instruction to spend 30 minutes per day. |
| Material | Provided software |

**Origin/Scope**
Academy of Reading was developed by two Canadian researchers, Dr.Christina Fiedorowicz and Dr. Ronald Trites, in the 1980s for use with learning disability students. By 1993 they recognized that their reading program would be useful to Reading Delayed students as well as Reading Disabled students.

**General Description**
The Academy of Reading builds the phonemic awareness of students, develops their decoding skills, and improves their comprehension abilities. The program's modular design allows teachers to customize the student's instruction in all three areas based on the student's individual requirements. The approach to instruction is based on a neuro-psychological theory on how the brain processes and retains information. Students working at the precise level at which they need instruction are immersed in the reading material until they obtain "automaticity" on a particular reading skill.
The program allows three levels of implementation. The first implementation model addresses the needs of students in grades K-3. This model utilizes the various training components of the Academy of Reading as an early intervention tool. In this approach, students master a variety of skills from phonemic awareness, visual matching, auditory visual matching and comprehension strategies. By mastering the battery of component skills, a student will have acquired the requisite basic skills to be a successful reader by the end of the third grade.
The second implementation model addresses the intervention needs of students in grades 4-8. This approach uses a Cloze paragraph assessment to determine the degree of reading delay. Based on this assessment the students are assigned into one of three streams: 1) Auditory – Visual Matching is assigned to students 1 – 2 grade levels behind; 2) Visual is assigned to students 3 or more grade levels behind; and 3) Students who require substantial motivation, or are learning English for the first time are supplemented with a course of phonemic awareness instruction. All students are gradually assigned higher-order tasks as they progress through the material of the Academy of Reading.

The third implementation approach addresses the needs of mature students in high school and adult education. The model uses the same logic as the Grade 4 – 8 model, but substitute adult for child content.

**For additional information, contact**:
Dennis Eichhorn or Judy Reed
Instructional Impact, Inc.
2139 N Street, NW
Washington, DC 20037
Ph# 202- 296-1046

**Pearson Learning**
**Modern Curriculum Press**
**"Plaid" Phonics**

| | |
|---|---|
| Developer | Modern Curriculum Press |
| Year Established | 1960 |
| # 0f Schools Served | 100+ |
| Level | K – 6 |
| Primary Goal | "Plaid" Phonics is a supplemental program that includes systematic, explicit, intensive and comprehensive phonics instruction. The program matches the necessary elements of a successful reading program described in research from Chall, (1967) to Lyons (1998). |
| Main features | This program reflects instructional principles founded on scientific research relevant to direct instruction of phonics and the development of reading skills. The instructional strategies implemented in "Plaid" Phonics are based on four components of balanced reading instruction that have been identified by research: phonemic awareness, systematic phonics/decoding, fluency, and comprehension. |
| Results | Independent validation study was conducted and results show that "Plaid" Phonics was effective in teaching students phonics. |
| Impact on Instruction | "Plaid" Phonics is a supplemental program and is used at the teacher's discretion |
| Impact on Organizational Staffing | None |
| Impact on Schedule | None |
| Subject-Area Programs Provided by Developer | Yes, in reading. |
| Students Served | |
| Title I | Yes |
| English-language learners | Yes |
| Urban | Yes |
| Rural | Yes |
| Parent Involvement | No specific program |
| Technology | None |
| Material | Provided materials |

**Origin/Scope**
The program was founded by Dr. Clarence E. Elwell who studied the problems of remedial readers at Harvard and noticed that many had not been taught phonics strategies. Over the years "Plaid" Phonics has been continuously revised to reflect the latest research on teaching reading in the classroom. Currently the program is in the tenth edition.

**General Description**
"Plaid" Phonics is based on four components of balanced reading instruction that have been identified by research: phonemic awareness, systematic phonics/decoding, fluency, and comprehension. Each component has a sequenced set of activities with appropriate material and a teacher resource guide.

**For additional information, contact:**
Debbie Owens
11636 Smoketree Drive
Richmond, VA 23236
Phone # 804-797-8414
Debbie.owens@pearsonlearning.com

## Earobics Literacy Launch

**IN BRIEF**

| | |
|---|---|
| Developer | Cognitive Concepts, Inc. |
| Year Established | 1999 |
| # of Schools Served | School districts in all 50 states, 3 school divisions in VA |
| Level | K-3 |
| Primary Goal | Earobics is a supplemental reading program designed to improve the skills necessary for academic success in reading and literacy development. |
| Main Features | Software program that provides individualized, systematic instruction and practice in phonemic awareness and other early literacy skills. The software automatically adjusts to the skill level and progress of each student and collects performance data by class. |
| Results | Statistically significant gains on standardized tests have been made in phonological awareness, spelling and decoding. |
| Impact on Instruction | None |
| Impact on Organizational Staffing | None |
| Impact on Schedule | None |
| Students Served | |
| Title I | Yes |
| English-language learners | Yes |
| Urban | NA |
| Rural | NA |
| Parental Involvement | There is a parent component. |
| Technology | Uses a computer to run the software. |
| Materials | Supplemental big books and books on tape/video are available. |

**Origin/Scope**
The Earobics Literacy Launch is based on 20 years of research in the area of literacy development. The program incorporates research findings that identify the crucial skills necessary for academic success in reading as well as proven techniques for providing instruction in those key areas of literacy development. The Earobics Literacy Launch has been proven effective in increasing teacher understanding of literacy and student performance on standardized assessments in a number of implementations across the country.

**General Description**
This is a supplemental program designed to assist students who have been identified with particular deficiencies. Students use Earobics software for a minimum of three 20-minute sessions per week and receive teacher guided instruction with correlated Earobics materials.

**For more information, contact:**
Karen Niemi
Cognitive Concepts, Inc.
990 Grove Street, Suite 3
Evanston, IL 60201
Phone: (847) 570-3581
E-mail: kniemi@earobics.com

## Sadlier Phonics/Word Study Program

**IN BRIEF**

| | |
|---|---|
| Developer | Sadlier-Oxford |
| Year Established | Revised 2001 |
| # of Schools Served | 10 schools in Virginia |
| Level | K – 6 (Phonics K – 3; Word Study 4 – 6) |
| Primary Goal | Provide students with the training they need in phonemic awareness and phonics skills and then provide opportunities to transfer and apply newly learned skills in decodable text and real reading experiences. |
| Main Features | This is a thematically-based phonics and word study program. The phonics and word study skills and strategies in each unit are explicitly and systematically taught in the context of literature and writing. |
| Results | This program is currently being used in Title I schools and REA (Reading Excellence Act) schools. Students in these schools have improved PALS scores. |
| Impact on Instruction | Teacher-directed program |
| Impact on Organizational Staffing | None |
| Impact on Schedule | None |
| Students Served | |
| Title I | Yes |
| English-language learners | Yes |
| Urban | Yes |
| Rural | Yes |
| Parental Involvement | There is a component in the materials. |
| Technology | Interactive Web site for teachers |
| Materials | Textbook, phonics picture cards |

**Origin/Scope**
This program was revised by Lesley Morrow, professor of literacy, at Rutgers University and Richard Vacca, professor of education, at Kent State University. This kindergarten through sixth-grade program is based on the current research findings of the National Reading Panel, Preventing Reading Difficulties in Young Children, and Every Child Reading: An Action Plan.

**General Description**
This program provides students with a solid foundation in phonics and word study skills and strategies. The key components of these programs are: phonemic awareness, alphabetic knowledge, explicit and systematic phonics instruction, oral language and vocabulary development, word study strategies, reading comprehension, spelling, writing and assessment.

**For more information, contact:**
Linda Feeley
Sadlier-Oxford Publishers
Phone: (804) 798-4402

## Sing, Spell, Read & Write

**IN BRIEF**

| | |
|---|---|
| Developer | Modern Curriculum Press |
| Year Established | 1975 |
| # of Schools Served | 26 school divisions in VA |
| Level | K-1 |
| Primary Goal | To make every child an independent reader by the end of first grade |
| Main Features | The program features scientifically-based elements of balanced reading instruction that includes: phonemic awareness; systematic, explicit, intensive phonics, reinforced with connected decodable text; multiple readings (oral, silent, individual and shared) to provide practice and build fluency; and comprehension strategies that develop higher-order thinking skills. These fully-correlated elements are reinforced with research-based multimodal strategies that fully engage every child regardless of learning style. |
| Results | Schools that have used the program have shown significant increases in reading scores on norm referenced tests. |
| Impact on Instruction | Requires the use of movement, song, and game to provide a positive stimulation that allows for active participation that does not always occur in traditional instructional approaches. Lessons are scripted for teachers. |
| Impact on Organizational Staffing | None |
| Impact on Schedule | None |
| Students Served | |
| Title I | Yes |
| English-language learners | Yes |
| Urban | Yes |
| Rural | Yes |
| Parental Involvement | Included in teacher's edition |
| Technology | CD and audiocassettes |
| Materials | Curriculum is a package of necessary manuals and resources. |

**Origin/Scope**
The “Sing, Spell, Read & Write” program was developed more than 30 years ago by a primary school teacher. The program was originally published in 1975 and revised in 1997.

**General Description**
The primary goal is to make every child an independent reader by the end of first grade. This is accomplished through a carefully sequenced system of phonics-based instruction that builds upon previously taught skills. The infusion of music into the instructional strategies engages the child in a fun activity, creates a stimulating atmosphere, accelerates learning and helps to develop the automaticity required to achieve fluency and skill mastery.
There is a scope and sequence chart included for tracking individual student progress and for acting as a classroom management tool.

**For more information, contact:**
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Pearson Learning
11636 Smoketree Drive
Richmond, VA 23236
Phone: (804) 797-8414
Email: debbie.owens@pearsonlearning.com

## BoxerMath

**IN BRIEF**

| | |
|---|---|
| Developer | Boxer Learning |
| Year Established | 1995 |
| # of Schools Served | Estimated 2165 schools in US<br>22 school districts in Virginia |
| Level | 3-12 |
| Primary Goal | To provide students an opportunity to learn mathematics through gradual development of concepts and the practice of those concepts extended over a considerable period of time |
| Main Features | BoxerMath courses and lessons combine the purposeful use of technology and a consistent pedagogical design, Discovery-Confirmation-Practice, to provide to students multiple opportunities for learning. |
| Results | In Algebra I, Goochland High School noted a 20% gain at the end of 2001 school year implementation. Granby High School in Norfolk had 9% higher geometry scores with students who used BoxerMath as compared to those who did not use the program. Prince Edward Algebra I students scored 35 points higher on the EOC test. |
| Impact on Instruction | Supplementary instruction model that gives students the opportunities to discover mathematical concepts in the context of structured instruction in a technology rich environment |
| Impact on Organizational Staffing | None |
| Impact on Schedule | None |
| Students Served | |
| Title I | Yes |
| English-language learners | Yes |
| Urban | Yes |
| Rural | Yes |
| Parental Involvement | The program is available via the Internet. Parents can check student progress through reports available electronically. |
| Technology | Web based delivered via the Internet |
| Materials | Supplemental materials available via the Internet for grades 3-12 |

**Origin/Scope**
The 1991 NCTM Standards for Teaching Mathematics included recommendations to incorporate technology as a tool for learning and instruction. Subsequent studies such as that published by Clements and McMillen (1996) confirmed the effectiveness of "computer manipulatives" in helping students to "clearly and easily see abstract concepts". BoxerMath emphasizes conceptual understanding and factual and procedural knowledge.

**General Description**
BoxerMath courses involve students actively in the learning process and allow them to tangibly interact with abstract concepts. The program generates student interest and highlights the relevance of material in cross-curricular areas, reaches students at all ability levels, and allows students to come to their own understanding in their own words. BoxerMath addresses a wide variety of learning styles and reinforces understanding.

Teachers, students, and parents can use the instructional materials and review student data from any Internet-enabled computer. The program provides accountability and control over the student experience.

**For more information, contact:**
Boxer Learning
Charisse Smith
800-736-2824

## Cognitive Tutor

**IN BRIEF**

| | |
|---|---|
| Developer | Carnegie Learning |
| Year Established | 1991 |
| # of Schools Served | Estimated 150 schools in US<br>9 school districts in Virginia |
| Level | Secondary |
| Primary Goal | To provide students an opportunity to receive individualized attention, maximizing the amount of time spent actively learning and mastering fundamental sets of knowledge and skills |
| Main Features | Three of the most effective features of Cognitive Tutor are constant student monitoring, just-in-time help, and individualized skills tracking. Constant monitoring uses model tracing and compares student work against a model, much as a human tutor would. The model recognizes multiple solution paths and only interferes when the student is going astray. Just-in-time help offers a help button. Individualized skills tracking monitors student actions and proposes remediation when appropriate. The software monitors the status of the student's knowledge on a continual basis and tailors course material based on these continual assessments. |
| Results | Schools that have used the program have shown increases on a variety of norm-referenced and criterion-referenced tests. |
| Impact on Instruction | Supplementary model that, on a traditional schedule, uses the computer lab for 2 days out of 5 and the regular classroom for the remaining 3 days |
| Impact on Organizational Staffing | None |
| Impact on Schedule | None |
| Students Served | |
| Title I | Yes |
| English-language learners | Yes |
| Urban | Yes |
| Rural | Yes |
| Parental Involvement | Family Algebra Nights are recommended.<br>Software may be loaded on a home computer. |
| Technology | Local server based |
| Materials | School may reproduce books or may purchase books. |

**Origin/Scope**
Carnegie Learning was formed after 15 years of cognitive research on teaching and learning at Carnegie Mellon University. Cognitive Tutor promotes active learning to improve students problem-solving and critical-thinking skills.

**General Description**
Cognitive Tutor programs are designed to assist student-thinking and problem-solving skills. The software employs a proprietary tutoring model that fosters the development of procedural and conceptual knowledge by allowing students the opportunity to learn by doing. The Cognitive Tutor programs build a model of each student's strengths and weaknesses, and then provide instructional assistance in the context of problem-solving activities.

Carnegie Learning's curricula include yearlong programs for Algebra I, Geometry, and Algebra II. The programs are implemented by mixing three days of classroom curriculum with two days using the Cognitive Tutor software on the computers. Classroom activities include traditional lecture, collaborative problem-solving activities, and student presentations. Computer time is spent solving "real-life" problems that incorporate the active use of spreadsheets, graphs, equation solvers, and other tools, depending on the student's success.

**For more information, contact:**
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