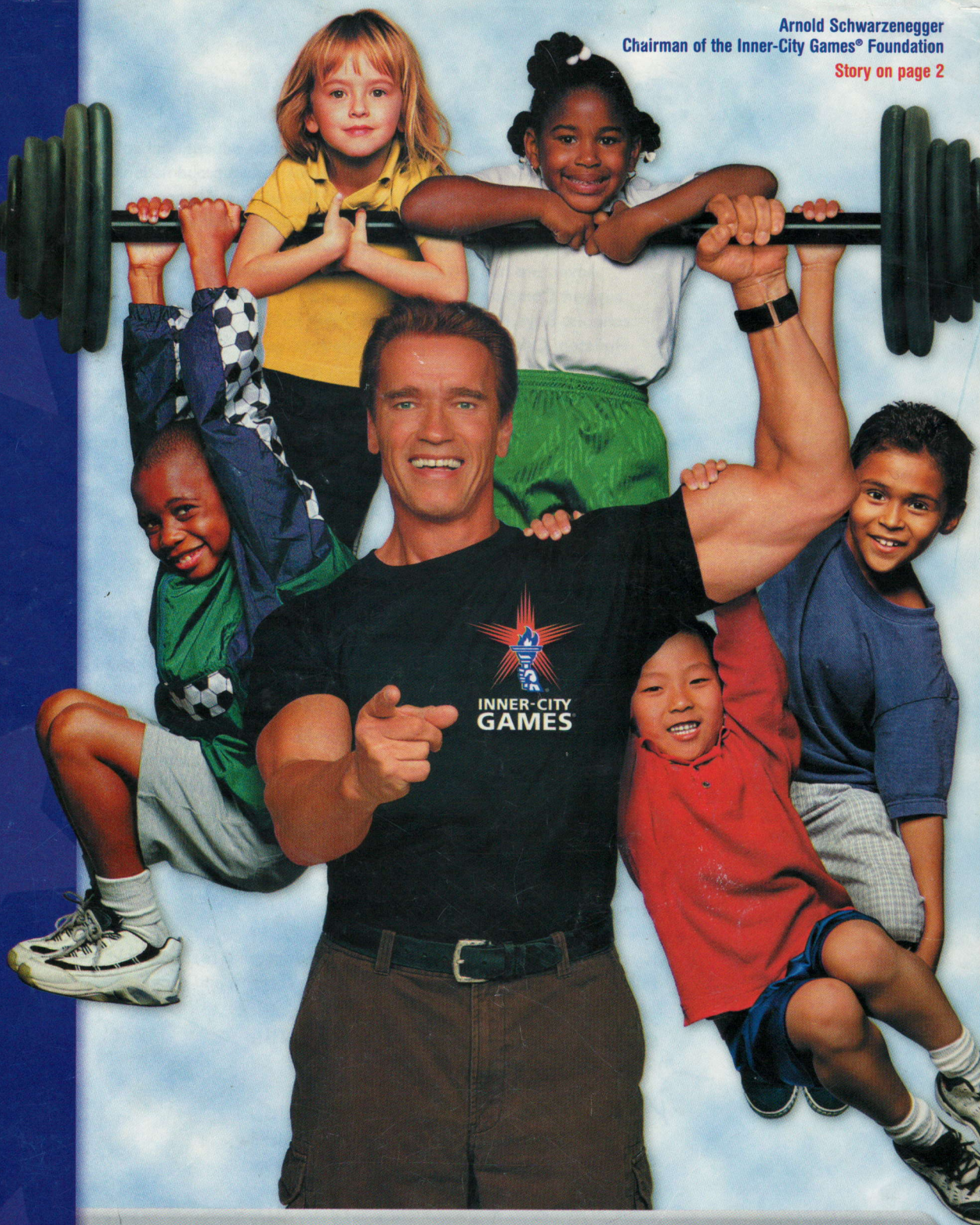


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Story on page 2

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Spring 2000

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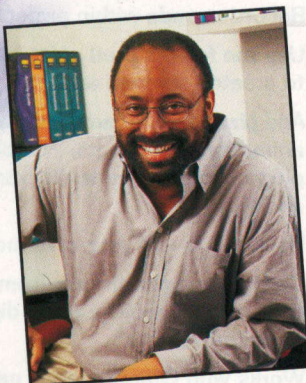
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District's Choice Top 100,
Curriculum Administrator, June 2000

*Most Sophisticated
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The Technish, Feb. 2000

Software Awards of Excellence,
Technology & Learning, Nov. 1999

Picks of the Month,
Technology and Learning, Oct. 1999

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The ClassWorks support team can help educators customize the program to meet the unique needs of their districts, schools, or classrooms, including:

- Correlating lessons to standards at district, state, or national levels
- Customizing curriculum based on district goals and objectives

Professional Development

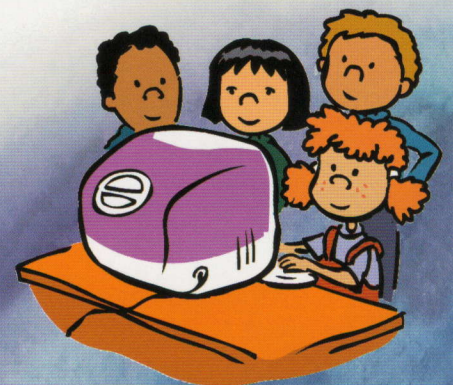
In ClassWorks Gold professional development sessions, educators learn to maximize the program's power with ease and efficiency, including:

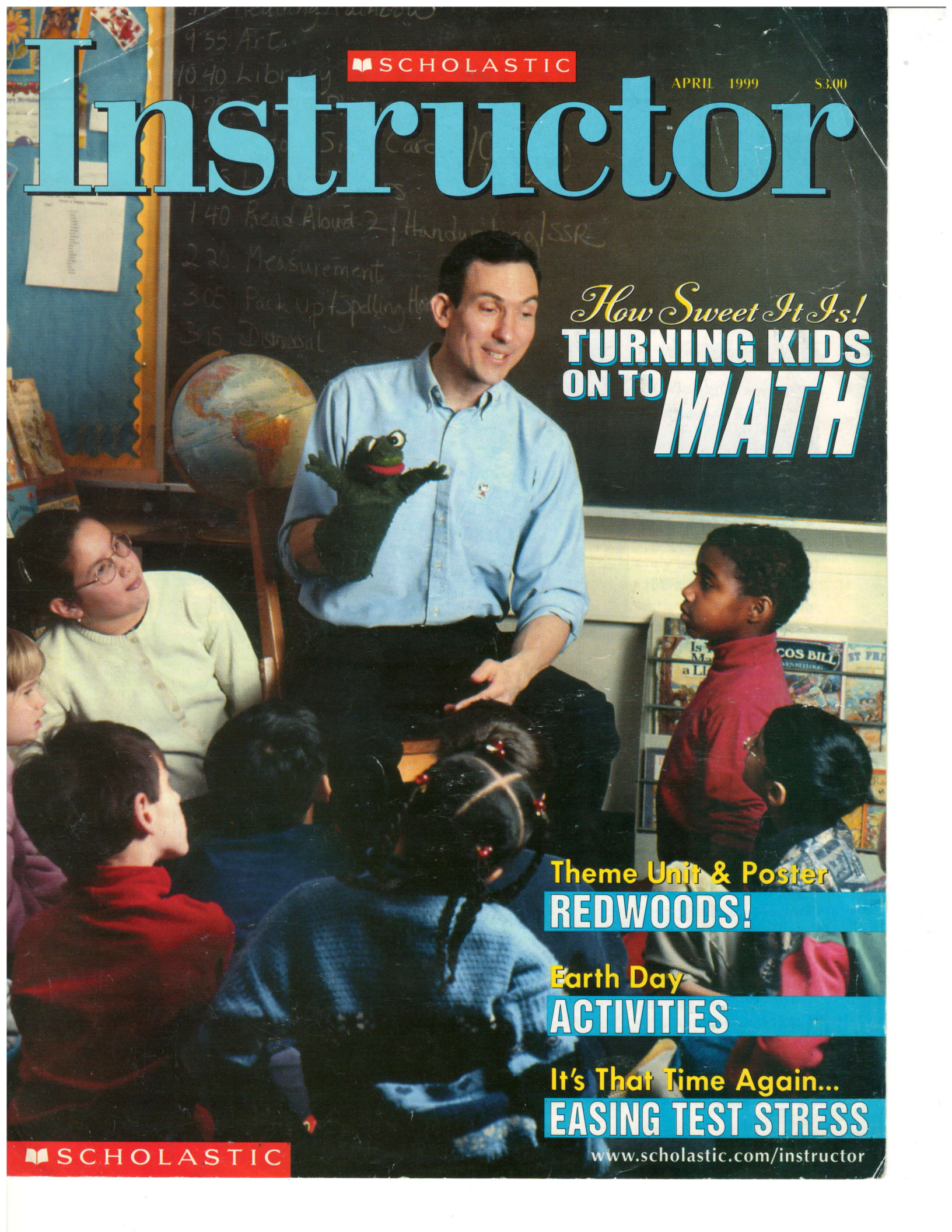
- Developing implementation strategies to meet your school's needs
- Customizing content for individual students or classes

Technical Support

With more than 20 years of experience in implementing school-based technology, our technical support team has the know-how to assist educators in implementing ClassWorks in single schools or throughout an entire district. What this means is that technical support is just a phone call away. Our Full-Circle Service includes:

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Electronic Learning

By Paul Oh

POWER Package!

A standards-based, teacher-friendly software program—and customized classroom support

Imagine being able to select from 130 award-winning software titles to support your math and language arts curricula. Even better, imagine that all the activities are not only customized to meet your district, state, and national standards but also correlated to standardized tests such as the CAT and the ITBS. *ClassWorks Gold*, a comprehensive package for grades K–8 from Knowledge Adventure, does all this and more.



ClassWorks Gold lets teachers match software with their students' needs.

Designed With Teacher and Student in Mind

An alternative to stand-alone software, this easy-to-use curriculum-management system features nearly 20 publishers' top educational programs, many of which have received awards, including the Association for Curriculum Development's "Only the Best," the Developmental Software Awards, the Kids' Choice Awards, and the Parents' Choice Awards. *ClassWorks Gold* gives teachers the

flexibility to set up the best, most productive learning regimen for their class. A real time-saver, it provides the tools teachers need to match individual software activities to their students' needs in just a matter of minutes. *ClassWorks Gold* is organized by instructional units, each of which includes a mini-lesson, activities, a quiz, and a creative project. A teacher can set a specific unit for the class or have children take placement tests to determine the appropriate series of lessons. Getting students on the program is as simple as drag-

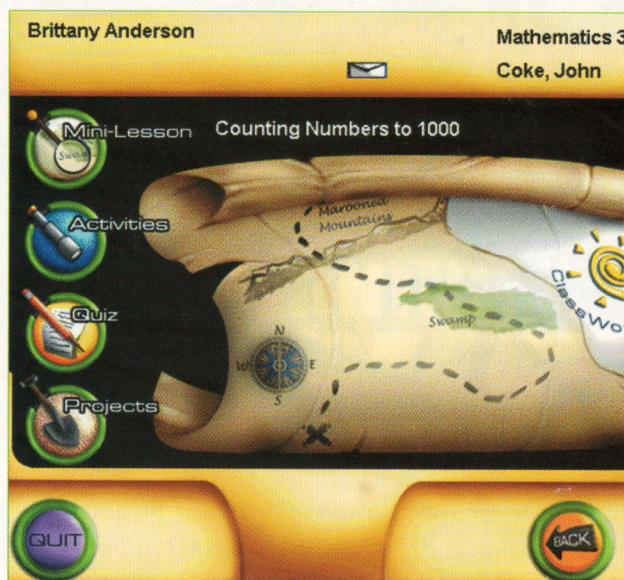
ging and dropping names or entire class lists into the desired instructional unit.

Once they're on the program, children embark on a series of activities that introduce, teach, and reinforce a skill. Let's say you're a third-grade teacher covering basic multiplication facts up to 12×12 . You can set up a sequence of activities that begins with instruction and sample problems, then continues with two sets of activities that provide instruction, practice, assessment, and, if necessary, remediation.

A language arts unit is similarly structured. A second-grade teacher who wants to reinforce basic writing skills, for example, may select a series that begins with introducing verbs and continues with introducing sentence structure, writing paragraphs, the writing process, and correctly spelled words. Instructors can then have kids follow up with a fun project using the writing and creativity program *Kid Works Deluxe*.

Technological Teacher's Helper

The Freeport Area School District, in Freeport, Pennsylvania, has been using an earlier version of *ClassWorks Gold* for three years and recent-



Children can navigate the program on their own.

ly purchased the completely revamped system for its three K-6 schools. "We like the fact that when we asked teachers how they would teach a particular skill or concept, we were able to find the software that matched their ideas," says superintendent Donald Tylinski, Ed.D. "Now



Software Showcase

Here's a sampling of the popular titles included in *ClassWorks Gold*:

Ace Detective (MindPlay)
Algebra Shop (Scholastic)
The Cruncher (Davidson)
Fraction-oids I and II (MindPlay)
Grammar Games (Davidson)
The Graph Club (Tom Snyder Productions)
HyperStudio (Roger Wagner)
JumpStart Learning System (Knowledge Adventure)

Kid Phonics series (Davidson)
Kid Works (Davidson)
Math Blaster series (Davidson)
Math Shop (Scholastic)
Media Weaver (Humanities)
The Multimedia Workshop (Davidson)
Reading Blaster series (Davidson)
Steps to Better Writing (Humanities)



Customized management is a big plus.

our teachers have software at their fingertips that will enhance, promote, and remediate what they teach in the classroom, with programs the children love to use." Dr. Tyliniski credits the program with helping to increase his district's math scores on both state and local tests. "We didn't change teachers, we didn't change the facilities, we didn't change the curriculum, we didn't change our math text," he says. "All we did was add *ClassWorks Gold*."

The management system's versatility is one of the biggest pluses for teachers and students. "*ClassWorks Gold* can be used for Title 1 students, for special education students, and for gifted students," Dr. Tyliniski says. Teachers can easily make changes to accommodate their students' learning levels with a few mouse clicks—for example, editing out skills, creating a new sequence of activities, and even adding other software programs that do not come with the package.

The extensive student-monitoring system is another popular feature. At the end of a particular skills section, children take a quiz to test mastery. A less than minimum score will route a child to additional instruction and

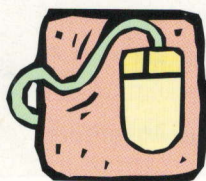
To Take a Look

If you're interested in *ClassWorks Gold*, ask your principal or superintendent to consider the product for your district. Packages are available for language arts, math, or both and for grade levels K-3, 4-6, 6-8, or K-8. Price ranges from \$20,000 to \$80,000, depending on the package. Knowledge Adventure provides three days of teacher training, and regional sales consultants, many of whom are educators, can offer assistance in funding options such as local grants and e-rate money. For more information, call 800-545-7677 or go to the company's Web site at www.KnowledgeAdventure.com.

practice. Or a teacher can set the program to stop if a student fails a quiz and have a message appear asking the child to speak with his or her teacher. The system also reports scores on activities and quizzes, making it easy for teachers to identify students who need help. With the Grade Level Evaluation program, teachers who wish to assess mastery of skills can use this standardized assessment tool to get a benchmark on students and plan further instruction.

The ease and flexibility that *ClassWorks Gold* offers makes it a true technological teacher's helper. Says Lisa Bailey, a technology-program director in Perry County District 32, in Perryville, Missouri, who helped implement the system in her schools last fall: "*ClassWorks Gold* allows teachers to provide their students with work at a level that's right for them, and that's how children achieve success." ■

Paul Oh teaches first grade at Fort River School in Amherst, MA.



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I. Overview

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(1) Not all activities get progressively harder within and across the sequence and units

(2) Spell It is the only spelling product. Need more of a variety of activities

c) Changes Needed

(1) Shouldn't repeat activities in a unit

Coordinated Learning System (CLS) Requirements

The following diagram outlines the short, medium and long-term objectives for a Coordinated Learning System K-12 instructional framework:

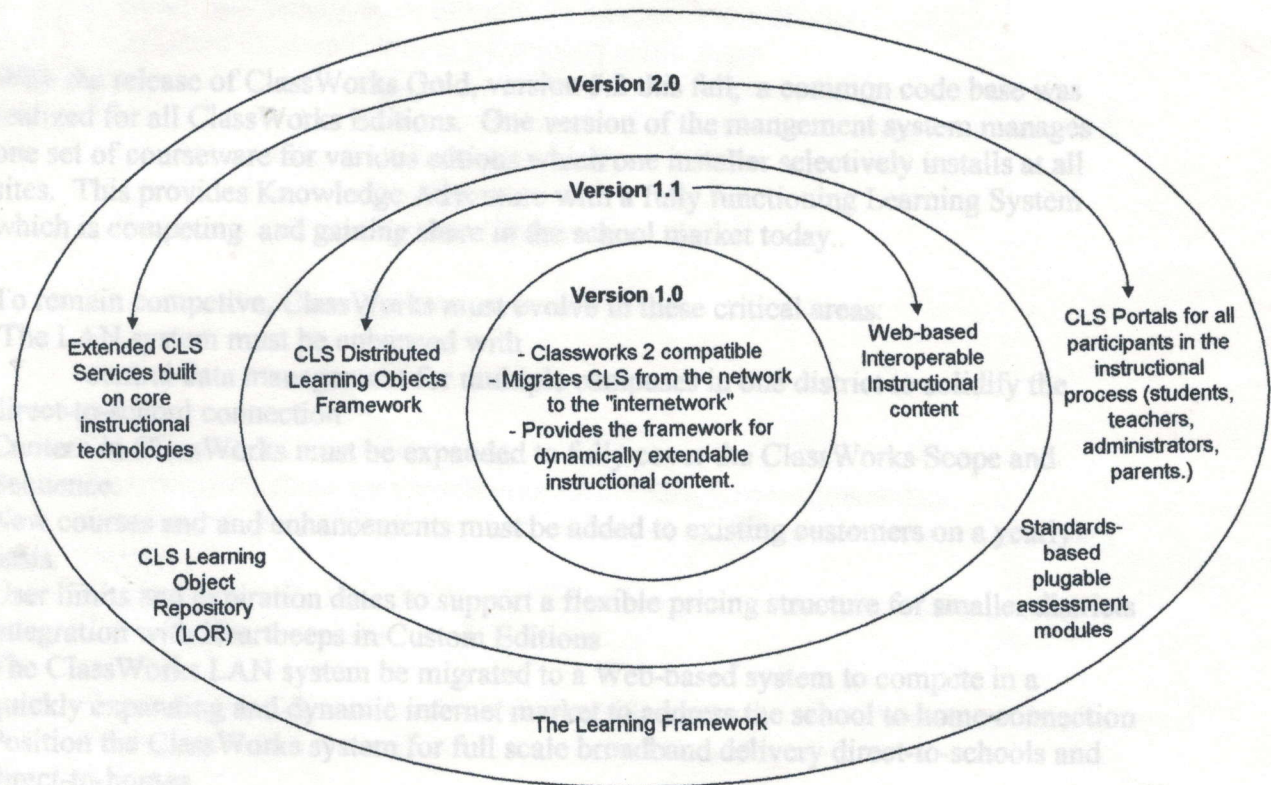


Diagram 1: Coordinated Learning System (CLS) Framework

CLS will include both proprietary Havas content, as well a variety of additional third-party resources. An important part of the product strategy is to provide third-party software publishers with the CLS Software Development Kit (SDK) so that they can build "anchors" into their applications and content that will allow them to be managed by the Coordinated Learning System. Similarly, publishers of print and other media materials will be provided with tools that will allow them to correlate their materials to the CLS standards, so that their non-digital assets also will be accessible to CLS users.

Overall Goals and Objectives

- **Extensibility**

The CLS system is designed to support dynamic extensions and upgrades. This means that new instructional content, CLS services and standards-based assessment modules developed by 3rd parties can be added to existing installations without requiring a system upgrade.

- **Accessibility**

Today's Classworks product line operates within a closed school network. Consequently, access to the instructional process by all participants (teachers,

ClassWorks Development Database Functional Specification

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Overview

ClassWorks is an Open Learning System for K-8 in Math and Language Arts. This system includes Products and activities that are organized into instructional sequences (or courseware) for each grade in Math and Language Arts from Kindergarten through grade 8, and a management system that delivers the courseware and manages the results data that is generated.

ClassWorks development addresses three areas: the Curriculum, the Management System and the documentation. The curriculum consists of the structure of skills that are addressed for each grade and subject, and the associated computer programs. The Management System is the procedures that control how students and teachers are entered, work with the curriculum, and how the results scores that are generated are managed. The Documentation provides the information required to understand and use ClassWorks.

Data for all developers to be consolidated into one developmental system. ClassWorks Development team includes remote development, central coordination of all design and development into one system.

Brief ClassWorks overview, comments on data infrastructure.

Need: Need source control of all data, elimination of duplicate data entry, integration into one system that feeds documentation, release version and archive system.

Source Developers

Each Developer will maintain their own formative data

Learningways

CNS

Mary Cron

Torrance Curriculum

Torrance Documentation

Quality Assurance

Central Development System

Database

This will integrate data from all developers. Four distinct phases must be maintained:

1. Production Phase - Central collection and processing point for data while in development
2. Pre-Release Phase - Data that has been reviewed and signed off on for use in builds
3. Released Phase - Data fully integrated into runtime version of ClassWorks

4. Archive Phase - Data for Pre-Release and Released phase archived for storage and restoration

Central File Storage

All files will be checked in and stored in Source Safe

Please see chart on page ???

Requirements: Central Development Database

1. Centralized
2. Import/Export utilities
3. Source Control for data in database and files in Source Safe
4. Output reports for each phase
5. Object oriented Curriculum Database
6. Appropriate reports to support needs of development team during QA process
7. Generation of Electronic documentation at customer site in datafile generated from central developmental database
8. Generation of data for use in print based documentation from central developmental database
9. Processes for archiving and retrieving released versions

Data Definition by developer

The following is an overview of what each developer does.

1) Learningways

Develops the Scope and Sequence, Builds minilessons and quizzes for each skill in S&S, generates the sequences which are reviewed and approved by rest of team. Here is the data

Please see the table on page ??? for a more in-depth description of each piece of data.

2) CNS

Develops the Management System, Builds the activities, adds them to the sequences and integrates them into the management system. Here is the data

Please see the table on page ??? for a more in-depth description of each piece of data.

3) KA Curriculum

Oversees and coordinates all development: Generates Ancillary Sequences (Activity Practice)

4) Mary Cron

Generates projects and project related data

5) KA Documentation

Generates full documents, and for printing. Compiles and replicates duplicate units

6) QA

Generates bug reports and verification data

7. Database Phases

Overview of data in, processing, out for each phase. Include table with

Production Phase

Overview: Data created by developers. Merged into central development phase. Will be revised and updated based on design and production needs.

Inputs Processing Requirements Outputs

Pre Release

Release

Archive

8. Data Relationships

10. Requirements for utilities by phase:

11. Requirement for reports and outputs by phase

12. Production Processes (This is where use cases will come in)

Table: Task/ Utility Harold

Requirements

The requirements for the curriculum development database are organized by either "General Requirements" which apply to all phases of development or according to the following development phases:

1. Production Phase – the data is imported into and edited in the database
2. Full Pre-Release Phase – the data editing is complete, data is final and signed off by all developers, locked-down, and all conditions for proceeding to the next phase have been met
3. Released Phase – the data has been exported to create the various outputs
4. Archived Phase – the data is archived and stored in an easily retrievable manner

General Requirements

1. To serve as the one source for all data output for production, release and archiving purposes
2. Processing, archiving and restoration of all data required to generate designated ClassWorks Editions
3. To centralize the curriculum data for each ClassWorks edition
4. To store and manage the curriculum data for concurrent production of multiple ClassWorks versions
5. To reduce key entry errors through relational database tables
6. To establish and enforce business rules for the curriculum relationships
7. To enable remote, web-based data review and editing
8. To provide search-able web-based information on the curriculum of any ClassWorks edition
9. To allow direct data editing to have the option to eliminate importing processes
10. The central database tables will be created in Microsoft's Access
11. The conditions, acceptance criteria and sign-offs (identified on page 11) for the data in order to lock the data down, and proceed to the next phase.

Production Phase Requirements

1. A centralized development database to integrate and store source production data (i.e. curriculum data, project-related data, sequence, unit, product, and activity data) from all ClassWorks development groups
2. Utilities to import and export data to and from the central database
3. Source, version, and editing rights control for all data in the database
4. Source, version, and editing rights control of all files (identified on page 13) in Visual Source Safe
5. Each developer will maintain their own set of formative source data to prepare for the import into the centralized database
6. Direct editing of the data in the Production and Full Pre-Released Phases with the Sequence Editor utility (currently in use at CNS) by a designated production person at Knowledge Adventure in Torrance
7. Procedures for updating and maintaining data (input and output) into the central database during the Production Phase
8. A set of output reports, data files, interfaces and tasks required for the production and maintenance of ClassWorks
9. Implementation of an object oriented, centralized curriculum database that uniquely identifies each product, activity, sequence, and unit with associated data that can be clicked and dragged between ClassWorks Editions. To specifically identify Units that can be QA'd once and dragged anywhere, to any sequence without requiring re-testing. Creation of sequences, units and activities objects that can be clicked and dragged between Editions to reduce required QA time by 40%.

Full Pre-Release Phase Requirements

1. The full pre-release data will be a full set of approved data from all developers. This data is used to generate the FoxPro structured data file that ships with ClassWorks.
2. A set of output reports, data files, interfaces and tasks required for centrally modifying data based on reviews and Quality Assurance.
3. Definition of utilities, editing tools and editing process used during integration and final testing
4. Procedures for select development staff to revise the database during integration testing based on QA reports prior to release
5. Procedures for extracting the FoxPro structured data file from the release phase data during integration and final testing

Released Phase Requirements

1. When all sequences and curriculum data is finalized, CNS will extract (from the full pre-released phase database) the required data and convert the Access database into a FoxPro structured data file (not a database) to be shipped and installed with ClassWorks
2. To have the software and the documentation pulling from (sharing) the same centralized data source
3. This data file will be accessed at runtime with ClassWorks to generate and retrieve electronic documentation including curriculum data for custom editions, activity instructions for specific activities, project instructions for teachers, project black-line masters, and other queried reports for all teachers and administrators enrolled in ClassWorks.
4. To use data-driven reports to automatically generate:
 - Curriculum Guide documentation (both electronic and paper-based)
 - Project Notebooks table of contents (paper based)
5. Ability to print electronic documents at a customer's site from the FoxPro structured data file (and other files) included in a ClassWorks installation
6. A set of output reports (i.e. electronic documentation), data files, interfaces (please see ClassWorks Texas Functional Specification) and tasks (i.e. printing electronic documents) required for use on site by the customer.
7. A set of utilities that reduce the number of steps to produce completed sequences by allowing Curriculum Specialists to create curriculum and sequences directly from the released phase database.

Archived Phase Requirements

1. An Archive Database which stores data for multiple ClassWorks editions.
2. Procedures for restoring Full Release Databases and Release FoxPro structured data files for any ClassWorks Edition stored in the database.

Possible Additional Future Database Version Requirements

1. To correlate ClassWorks skill codes and activity codes to standard Knowledge Adventure skill codes

2. To correlate Knowledge Adventure products and activities that are not in ClassWorks to the standard Knowledge Adventure skill and activity codes
3. To build a tool (or use the one that Linda Zhang built) that a Curriculum Specialist can use to do correlations.

Developers Data Sources

Please see process diagram on page 15.

1. Learningways:
 - Learningways Access database containing Scope and Sequence data
 - Learningways Access database containing Learning Panels (Mini Lessons & Quick Quizzes)
2. CNS:
 - Access database with sequence, unit, product, and activity information (used in conjunction with Sequence Editor)
 - ClassWorks flat files
3. Mary Cron:
 - Excel spreadsheet containing the projects data
 - Quark projects files
4. Knowledge Adventure:
 - Documentation files in Quark and PageMaker

Tasks/Source/Phase/Utility Table

Task	Data Source	Phase	Utility
Learningways creates Scope and Sequence in Excel	Learningways	Production	
Learningways imports Scope and Sequence in the Learningways database	Learningways	Production	
Knowledge Adventure imports Scope and Sequence data from LW database to ClassWorks Development Database	Learningways	Production	Loader Utility
Mary Cron sends final project data	Mary Cron	Production	
Knowledge Adventure imports final project data from Excel file to ClassWorks Development Database	Mary Cron		
CNS creates sequences	CNS	Production	Sequence Editor
Linda loads sequence data into Knowledge Adventure database	CNS	Production	Linda's Export Utility
Knowledge Adventure exports data to reports for reviews	Knowledge Adventure	Full Pre-Release	Querying and Reporting Utility
Knowledge Adventure edits ClassWorks Development Database	Knowledge Adventure	Full Pre-Release	Front-End Editing Utility
Knowledge Adventure exports data to reports for documentation production	Knowledge Adventure	Release	Querying and Reporting Utility
CNS exports data to FoxPro data structure format	Knowledge Adventure	Release	Linda's FoxPro Data Structured File Making Utility