Creating Powerful Teaching Tools

The Lightspan Partnership creates comprehensive, interactive educational programming in Reading/Language Arts and Mathematics for children in grades K–6. Lightspan combines solid educational foundations, the challenge of interactivity, and motivating characters and storylines to create powerful programming effective for both classroom and home use. With Lightspan, teachers and families gain additional opportunities to help children learn and apply the skills and knowledge they need to succeed in school and throughout their lives.

SOLID EDUCATIONAL FOUNDATIONS

Lightspan's instructional programs are designed to correlate with existing and emerging national standards, state frameworks, and school reform goals. The Reading/Language Arts objectives emphasized in Lightspan's programming and instructional support materials are based upon standards that have emerged from joint discussion between the International Reading Association (IRA) and National Council of Teachers of English (NCTE). The Lightspan Mathematics Curriculum is based on the 1989 document, "Curriculum and Evaluation Standards for School Mathematics," issued by the National Council of Teachers of Mathematics (NCTM). Objectives for both curricula are informed by guidelines from key state frameworks and assessments and the content of major elementary basals.

Lightspan's programming is developed by experts in instructional technology and curriculum design and closely guided by a Curriculum Advisory Board consisting of nationally recognized leaders in reading and mathematics education.

EFFECTIVE CLASSROOM MANAGEMENT

Lightspan's programs are designed to provide teachers with flexible learning tools that enhance their current curriculum materials. The programming addresses specific educational objectives and are modular in nature, allowing teachers to select the appropriate activities that correspond to planned lessons. Teachers use Lightspan for whole-class discussion or lesson introduction as well as assigning small groups or individuals to practice particular skills.

MEETING THE NEEDS OF INDIVIDUAL STUDENTS

Lightspan programs provide teachers with the flexibility to address the various learning needs of individual students. Each Lightspan "World" covers a range of ages and overlaps in its coverage, so teachers may choose the best starting point for students. The programs are designed to emphasize various types of interactivity and to support different learning styles. Within the Lightspan programs, students encounter puzzles, discovery activities, simulations, tool-based applications, strategy challenges, and traditional arcade-style games. Additionally, Lightspan programs comprise various levels of difficulty, allowing teachers to assign the appropriate level and to advance students to more challenging activities. These levels, as well as the randomization of elements within the interactive adventures, enable students to work through activities several times, leading to practice, mastery, and retention of important educational concepts.

ASSESSMENT INTEGRATION

Lightspan provides a range of assessment options to accompany and extend the curriculum programming. Lightspan encourages the use of journals, portfolios, collaborative and individual problem-solving activities, and progress charts. These assessment options are project-oriented and provide opportunities for evaluation of student performance. When combined with more traditional assessment methods, these options may be used to reconstruct a comprehensive and balanced analysis of student achievement.

THE LIFESPAN PARTNERSHIP, INC.
2323 FARADAY AVENUE, SUITE 300
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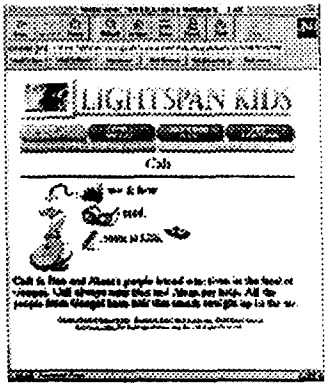
THE LIGHTSPAN NETWORK™

The Source of Solutions for Enhancing School-Home Collaboration

The Lightspan Network is an Internet-enabled on-line service that supports the efforts of Lightspan partner communities t improve student achievement through enhanced school-home collaboration. A key component of the Lightspan service, The Lightspan Network is a "Supersite" on the World Wide Web, accessible only to Lightspan partner communities.



Lightspan Kids:

The Lightspan curriculum programming's online component, where the power of the Internet is used in curriculum-based collaborative activities, writing and research based upon the same standards and objectives underlying all Lightspan programming.

Services include:

Adventure-based Writing Projects

The Lightspan characters maintain a correspondence with your students over the Internet, discussing the themes and activities your classroom is engaged in with The Lightspan Partnership.

National Challenges

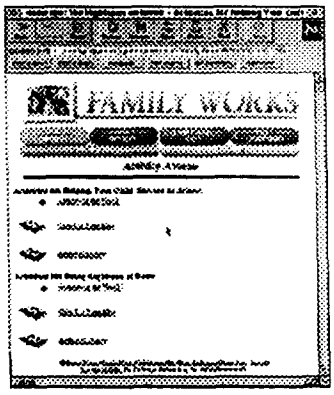
Lightspan classrooms nationwide can match wits in fun thinking bees that support the school's curriculum.

THREE SERVICES IN ONE FOR THE ENTIRE SCHOOL COMMUNITY

The Lightspan Network provides specialized content and services for three key constituencies of the school community: educators, families, and students. Each of these areas harnesses the power of the World Wide Web to help teachers realize the core aims of your school-home connection: improved student learning and enhanced family involvement.

Educator Works:

A rich set of tools and resources to support busy teachers in successfully enhancing student learning and family involvement using Lightspan and other means. Services include:



Lightspan Lesson Plan Library

An ever-evolving set of practical, classroom-based activities developed by teachers to extend the themes and objectives of the Lightspan programming

Online User Groups

Now any teacher with access to the Internet can share ideas and get support from their fellow Lightspan-using teachers nationwide, in sessions moderated by Lightspan instructional experts.

Family Works

Ideas and tools that help parents and guardians find practical ways to support their child's success in school.

Services include:

Family Activity Ideas

New ideas every week for simple games and activities that can be done around the house to help students excel in mastering key curriculum concepts and skills.

Communication with Lightspan

Answers, ideas, and support from Lightspan in making the school-home connection successful in every home

Family Links

Recommended sites on the World Wide Web, specially chosen to help enrich family involvement.

A NATIONAL NETWORK OF SCHOOLS USING LIGHTSPAN

The Lightspan Network is also a nation: l network of schools pioneering the school-home con iection. The Network creates opportunities for collal oration and support among educators, students, anc even families in these communities. And it's a safe pl ice to learn: only Lightspan partner schools have acc ess to the site, and content and communication is mon tored for educational appropriateness.

Finally, The Lightspan Network provides all Lightspan partner schools with direct, easy access to The Lightspan Partnership. Schools can get efficient support services, and give us their comments on ways to develop or improve the Lightspan school-home connection approach.

EASY TO IMPLEMENT

The Lightspan Network is accessible fro n any PC or Macintosh—whether in the school build ng or the home of a teacher or family—that is con iected to the Internet or one of the commercial on-lin services.

THE LIGHTSPAN PARTNERSHIP

2382 Faraday Avenue, Suite #300
Carlsbad, CA 92008
(800) 987-SPAN

LIGHTSPAN *Local Connect*™

The Curriculum-based, Local, Community-Wide Web for Learning

The foundation of the Lightspan School–Home Connection is interactive curriculum programming that increases learning time and family involvement in the home. As an optional next step for schools that wish to strengthen this connection further with online communication, we offer Lightspan Local Connect™.

Local Connect™ is a set of software and training services that help a school or district create its own local community on-line service to support student success through local teamwork. Created and managed by the school, this on-line service harnesses the power of the Internet to local needs. It enables easier and more effective communication about teaching and learning between and among parents, teachers, and other members of the school community.

Your School Online

With the help of Lightspan Local Connect, your district can help every school create a graphical, user-friendly local online service that will let members of the community connect with offerings like these:

Teacher-Family Connection
- News, announcement, and homework from each classroom
- Teacher - Family e-mail
- Suggested Family Activity of the Week

Faculty Commons
- Faculty e-mail boxes
- District-wide lesson plan libraries
- Collaborative professional development projects
- District staff development resources online
- Links to local college schedules and resources

Student Learning Expo
- Showcases of student art work
- News from Kids' Clubs

School and Community Calendar

Principal's Message

Special Programs and Announcements

...and more

Lightspan Local Connect is the first service designed to bring the power of the Intranet to schools. The service provides many of the key ingredients and training that make creating and managing a local on-line service realistic for the typical elementary school. The hardware and software involved in creating an Intranet are common and relatively affordable. If your school has Internet connectivity or a plan to implement it, you're most of the way there.

Lightspan Local Connect gives help where it's needed most: by making it easy for busy, non-technical users to conceptualize, build, and manage the on-line service itself, and by helping to ensure that the services presented are meaningful and curriculum-based.

BRINGING THE "INTRANET" TO SCHOOLS

Today, the same software technologies that have enabled an explosion of new publishing activity on the public World Wide Web are rapidly being adopted by corporations to create "Intranets": inexpensive, private and secure multimedia on-line services that connect colleagues in different locations with one another, and with the information they need to be more effective.

LIGHTSPAN LOCAL CONNECT™: 5 KEY BUILDING BLOCKS FOR THE SCHOOL'S LOCAL ON-LINE SERVICE

The Lightspan Local Connect service includes:

1. **Your School's Web Site Templates**
   Lightspan has built your school web site for you, in a set of fully functional templates and software that provide all of the services mentioned here, and more. Educators, families, and volunteers from the

local community need only post and manage the information on the site itself, using simple tools provided.

Your school web site represents the proven "best practices" of some of the leading Intranet-using schools nationwide because we've designed it with their help.

2. **Lightspan Site Manager Software**
   To make the Intranet accessible to all schools, Lightspan has developed an important new software tool call Lightspan Site Manager. Site Manager allows teachers (or even students) with no programming experience to configure and manage the school's web site, in as little as five hours a week.

3. **"Web Master" Training and Ongoing Support**
   Lightspan provides on-site training services for school coordinators responsible for managing their local on-line service—known on the Internet as Web Masters. Each school coordinator maintains communication with their personal "Web Coach" via telephone and The Lightspan Network for ongoing support. Also included is a comprehensive, step-by-step guide to creating a local on-line service using Lightspan Local Connect.

4. **Web Site Update Service**
   Lightspan develops additions and enhancements that your school can integrate into its local on-line service on an ongoing basis. We send these to your Web Master electronically, along with instructions for making them a functional part of your school's site.

5. **Technology Consulting**
   In order to get connected to the Internet and prepare to be an Internet publisher using Lightspan Local Connect, your school district needs to purchase hardware, software, and Internet access from vendors of those products. Lightspan helps you create your plan, and can connect you with the right vendor to meet your school's needs.

CONNECTING TO THE SCHOOL'S INTRANET

Once created with the help of Lightspan Local Connect, your school's online service will be accessible to anyone in your community who has access to the Internet or a commercial online service, at home or work. No special software or training is required on their part.

To make this access more equitable, some communities work with local businesses and other organizations to sponsor online access points at local libraries, after school programs, and other community sites.

In the next 18 months, furthermore, the telecommunications and entertainment industry is expected to produce many new options for more affordable access to the Internet, which will not require an investment in a personal computer. The Lightspan Partnership is committed to being the first to make these kinds of new opportunities for community connection available to its school partners.

GETTING STARTED WITH LIGHTSPAN LOCAL CONNECT

Creating your local on-line service for learning with Lightspan Local Connect requires planning among educators, technology staff, and community partners. Speak with your Director of Education Partnerships about how Lightspan can help begin that process in your community.

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THE SECRET OF GOOGOL*

Grades K–2 Mathematics

PHILOSOPHY AND RATIONALE

Students' attitudes toward mathematics and their understanding of basic mathematical concepts are shaped during the first years of school. *The Secret of Googol* is an engaging and challenging program that appeals to students' interest in exploring new worlds. Because *The Secret of Googol* introduces mathematical concepts in contexts that are meaningful to children, it can play an important role in developing a strong mathematics foundation in the primary grades.

The mathematics objectives addressed by the activities in *The Secret of Googol* are based upon standards created by the National Council of Teachers of Mathematics, as well as key state frameworks and major textbooks. Throughout the programming students will find opportunities to engage in contextual problem solving, use reasoning, investigate, estimate, and practice other transferable mathematical strategies. The guiding principle of the program is that mathematics is fun, exciting, and accessible to all students.

STORY LINE

In the world of Googol, Googolians lead their lives much as we do, except that the mathematics of life are entertainingly apparent. In the first adventure, Cali, the main animated character, is searching for a way to outsmart Wigsley, Googol's resident eccentric. She encounters Alana and Ben—the adventure's live-action characters—two youngsters who have the knowledge to help her.

Alana is an adventurous nine-year-old who is intrigued by mechanical things. Alana's younger brother, Ben, is more pensive and reflective and likes working with puzzles and abstract concepts. The two children represent differing personalities and various mathematical skills and approaches to problem solving. Alana and Ben personify the idea that children can be problem solvers.

Alana and Ben return with Cali many times to Googol to share in exciting events and adventures.

STRUCTURE OF THE WORLD

The Secret of Googol consists of eight adventures and three sets of electronic mathematical tools. Each adventure is an interactive story with mathematical challenges woven throughout. The mathematical problems are presented in four types of interactive game modules. **Smart Links** provides students with an environment for exploration, promoting the acquisition of new information through discovery. In **Puzzles and Patterns** students use numerical, visual, and verbal reasoning to solve puzzles or complete a pattern. **Mind Trek** encourages students to master concepts. In **Snap and Stack** students are required to use mathematical tools, or gather, analyze, and manipulate information. As students play the mathematical games, they progress through the interactive story until they help Cali, Alana, and Ben achieve the goal for that adventure.

In addition to the adventures, electronic tool sets extend the curriculum, providing students with more opportunities to acquire confidence with mathematics concepts.

*googol=ten to the hundredth power (0^{100})

The Secret of Googol
MAJOR OBJECTIVES

• television activity; + classroom activity

	Geometry & Spatial Sense Adventure 1, Tool 1	Concepts of Whole Numbers & Groups Adventure 2, Tool 2	Number Sense: Whole Numbers & Groups Adventure 3, Tool 2	Concepts of Operations Adventure 4, Tool 2	Operations, Facts, & Applications Adventure 5, Tool 2	Computation Adventure 6, Tool 3	Patterns & Applications Adventure 7, Tool 3	Number Sense: Rational Numbers Adventure 8, Tool 3	Measurement Adventure 9, Tool 4	Graphing, Statistics, & Probability Adventure 10, Tool 4
Estimation										
• explore estimation strategies		•	•	•			•	•		
• recognize when an estimate is appropriate		+	+	+	+	+	+	+	+	+
• determine the reasonableness of results			+,•	+,•	+,•			+,•		
• apply estimation in working with quantities, measurement, computation, and problem solving			•	•		•		•	•	
Number Sense and Numeration										
• construct number meanings through real-world experiences and the use of physical materials	+	+	+	+	+	+	+	+	+	+
• understand our numeration system by relating counting, grouping, and place-value concepts		•	•	•			•	•		•
• develop number sense		•	•	•				•	•	•
• interpret the multiple uses of numbers encountered in the real world		•			•	•	•			
Concepts of Whole Number Operations										
• develop meaning for the operations by modeling and discussing a rich variety of problem situations				•	•	•				
• relate the mathematical language and symbolism of operations to problem situations and informal language				•	•	•	•			
• recognize that a wide variety of problem structures can be represented by a single operation		+		+		+				
• develop operation sense				•	•	•				•
Whole Number Computation										
• model, explain, and develop reasonable proficiency with basic facts and algorithms		•			•	•				
• use a variety of mental computation and estimation techniques		•				•	•			•
• use calculators in appropriate computational situations			•	•		•				
• select and use computation techniques appropriate to specific problems and determine whether the results are reasonable	+	+	+	+	+,•	+,•	+	+	+	+,•
Geometry and Spatial Sense										
• describe, model, draw, and classify shapes	•									
• investigate and predict the results of combining, subdividing, and changing shapes	•									
• develop spatial sense	+,•									
• relate geometric ideas to number and measurement ideas	•						•		•	•
• recognize and appreciate geometry in the world	+,•									
Measurement										
• understand the attributes of length, capacity, weight, mass, area, volume, time, temperature, and angle									+,•	
• develop the process of measuring and concepts related to units of measurement					•				+,•	
• make and use estimates of measurement									+,•	
• make and use measurements in problem and everyday situations									+,•	•
Statistics and Probability										
• collect, organize, and describe data									•	+,•
• construct, read, and interpret displays of data		•					•			+,•
• formulate and solve problems that involve collecting and analyzing data										+,•
• explore concepts of change										+,•
Fractions and Decimals										
• develop concepts of fractions, mixed numbers, and decimals								•		
• develop number sense for fractions and decimals								•		
• use models to explore operations on fractions and decimals								+		
• apply fractions and decimals to problem situations								•		
Patterns and Relationships										
• recognize, describe, extend, and create a wide variety of patterns	•	•	•	•	•	•	•			
• represent and describe mathematical relationships	•					•	•	•		
• explore the use of variables and open sentences to express relationships		+	+	+	+	+	+	+		

QUADDLE FAMILY MYSTERIES

Grades 3–4 Mathematics

PHILOSOPHY AND RATIONALE

The Quaddle Family Mysteries encourage students in grades three and four to become confident in their abilities to do mathematics, to view themselves as mathematical problem solvers, and to learn to communicate and reason mathematically. The activities in each interactive mystery encourage students to see mathematics in the world around them and to develop mathematical habits of mind.

The mathematics objectives addressed by the activities in *The Quaddle Family Mysteries* are based upon standards created by the National Council of Teachers of Mathematics, as well as key state frameworks and major textbooks. Throughout the program students will find opportunities to engage in contextual problem solving, use reasoning, investigate, estimate, and practice other transferable mathematical strategies. The guiding principle of the program is that mathemaics is exciting, intriguing, and accessible to all students.

STORY LINE

In the *Quaddle Family Mysteries,* the Quaddle family operates a museum in Quaddletown. Adventures take place in and around the museum, which is a 3-D virtual reality space, populated by the the Quaddle family's live-action characters. The Quaddle family prompts students to explore, to make and test hypotheses, and to engage in many different types of problem-solving situations.

The Quaddles are an eclectic bunch. The curator of the museum is the former diplomat, sky-diving, and eccentric Aunt Marie. Her nephew, Newton, is a junior high school mathematics teacher and her grandniece, Emmy, is an aspiring herpetologist with an ample collection of reptiles and amphibians. Zachary, a family friend and student of Newton's, is a school newspaper reporter who assists with the investigation to solve the mystery. The Quaddle family is rounded out by the animated P. K. Macaw, the family parrot and resident wise guy. P. K. serves as a source of hints and help for students in the quest to solve the mysteries.

STRUCTURE OF THE WORLD

The *Quaddle Family Mysteries* consist of six adventures and three electronic toolsets. The adventures entice students to search and discover, to investigate and inquire about clues spread throughout the museum, to take notes, and form hypotheses. Clues are acquired when students solve mathematical challenges posed in the various rooms of the museum. In the lobby students encounter games related to consumer mathematics and real-world applications of mathematics. The parlor provides strategy and logic activities, while the kitchen presents problem-solving games. A game-show format is used in the family room to provide content review. Outside the museum in the garden, students undertake discovery and exploratory activities in the form of a simulation.

Once clues have been exposed, students may propose their solutions before they actually view the solution to the mystery. Students may return to any of the museum rooms to investigate or to play the various activities and games again.

In addition to the adventures, electronic toolsets extend the curriculum, providing students with more opportunities to acquire confidence with mathematics concepts.

Quaddle Family Mysteries
MAJOR OBJECTIVES

• television activity; ✛ classroom activity

Adventure	1 Number Relationships, Patterns, Statistics, & Probability	2 Introduction to Whole Number Operations: Multiplication & Division	3 Geometry, Patterns, & Statistics	4 Whole Number Computation: Addition, Subtraction, Multiplication, & Division	5 Fractions & Decimals	6 Measurement & Statistics
Estimation						
• explore estimation strategies	+,•	+,•	+,•	+,•	+,•	+,•
• recognize when an estimate is appropriate				+,•		
• determine the reasonableness of results	+,•			+,•		
• apply estimation in working with quantities, measurement, computation, and problem solving	+,•			+,•	+,•	
Number Sense and Numeration						
• construct number meanings through real-world experiences and the use of physical materials	•,+	•,+	•,+	•,+	•,+	•,+
• understand our numeration system by relating counting, grouping, and place-value concepts	•	•		•	•	•
• develop number sense	•	•	•	•	•	•
• interpret the multiple uses of numbers encountered in the real world	•,+				•,+	•,+
Concepts of Whole Number Operations						
• develop meaning for the operations by modeling and discussing a rich variety of problem situations	+	+	+	+	+	+
• relate the mathematical language and symbolism of operations to problem situations and informal language	+	+	+	+	+	+
• recognize that a wide variety of problem structures can be represented by a single operation	•	+		+		
• develop operation sense		•		•		
Whole Number Computation						
• model, explain, and develop reasonable proficiency with basic facts and algorithms		•		•		
• use a variety of mental computation and estimation techniques				•		
• use calculators in appropriate computational situations	•	•		•		
• select and use computation techniques appropriate to specific problems and determine whether the results are reasonable	•,+	+	+	•,+	+	+
Geometry and Spatial Sense						
• describe, model, draw, and classify shapes			•,+			
• investigate and predict the results of combining, subdividing, and changing shapes			•,+			
• develop spatial sense		•,+	•			
• relate geometric ideas to number and measurement ideas		•	•,+	•		•
• recognize and appreciate geometry in the world			•,+			
Measurement						
• understand the attributes of length, capacity, weight, mass, area, volume, time, temperature, and angle		•	•	•	•	•,+
• develop the process of measuring and concepts related to units of measurement	•	•	•	•	•	•,+
• make and use estimates of measurement						•,+
• make and use measurements in problem and everyday situations	•	•	•	•	•	•,+
Statistics and Probability						
• collect, organize, and describe data	+	+	+	+	+	+
• construct, read, and interpret displays of data	•,+	•	•	•	•	•
• formulate and solve problems that involve collecting and analyzing data	•,+	•	•	•	•	•
• explore concepts of change	•					
Fractions and Decimals						
• develop concepts of fractions, mixed numbers, and decimals	•,+				•,+	
• develop number sense for fractions and decimals	•,+				•,+	
• use models to relate fractions to decimals and to find equivalent fractions					•,+	
• use models to explore operations on fractions and decimals					•,+	
• apply fractions and decimals to problem situations	•,+				•,+	
Patterns and Relationships						
• recognize, describe, extend, and create a wide variety of patterns	•	•	•	•	•	
• represent and describe mathematical relationships	•		•	•	•	
• explore the use of variables and open sentences to express relationships		•	•,+			

TIMELESS MATH

Grades 5–6 Mathematics

PHILOSOPHY AND RATIONALE

Timeless Math, for students in grades five and six, encourages students to value mathematics, to become confident in their ability to do mathematics, to view themselves as mathematical problem solvers, and to learn to communicate and reason mathematically. The activities in *Timeless Math* expose students to a set of varied and interrelated experiences that help them confront mathematical problems. Students are encouraged to explore, to make and test hypotheses, and to engage in many different types of problem solving situations so that they gain confidence in their ability to solve complex problems.

The mathematics objectives addressed by the activities in *Timeless Math* are based upon standards created by the National Council of Teachers of Mathematics, as well as key state frameworks and major textbooks. Throughout the program students will find opportunities to engage in contextual problem solving, use reasoning, investigate, explore, estimate, and practice other transferable mathematical strategies. The guiding principle of the program is that mathematics is evident and relevant throughout time

STORY LINE

Students at this age are eager to explore other worlds and times. *Timeless Math* takes advantage of this interest by introducing students to other places and civilizations. In each *Timeless Math* adventure, characters are transported through space and time into another world such as the world of the ancient Maya, or into the future on a lunar base. To return to the present, students help the adventurers solve mathematical puzzles embedded in the culture. As students solve problems and collect clues, they learn mathematics they will need in our everyday world, as well as explore the mathematics and culture of the world they are visiting.

STRUCTURE OF THE WORLD

The world of *Timeless Math* is composed of six adventures that cover the essentials of mathematics for grades five and six. Differing approaches to mathematical activities provide a variety of types of game play. The **Search and Rescue** section presents basic mathematical concepts and encourages students to master them in a fast-action, adventure scenario. The **Observatory** has students apply mathematical concepts to other disciplines including science and astronomy. The **Project Simulator** encourages students to develop collaborative skills and use mathematical information in a larger problem-solving scenario, such as growing crops, building cities, or trading goods. The **Strategy Room** and **Navigation Chamber** allow students to assess their progress, gather information they may need about the culture or mathematics, and move from one place to another in the adventure. Mathematical tools allow students to explore and extend concepts from the games. Multiplayer and collaborative learning activities are a key part of the *Timeless Math* program.

While each adventure emphasizes a particular area of mathematics, students have multiple opportunities to explore or participate in activities and games that allow them to explore patterns and logic, help them develop number sense and measurement skills, give them needed practice with concepts and computation, and provide experience with geometric shapes and principles. Each adventure may be played multiple times with increasing levels of difficulty.

In addition to the adventures, six electronic tool sets extend the curriculum, providing students with more opportunities to acquire confidence with mathematics concepts.

Timeless Math
MAJOR OBJECTIVES

• television activity; + classroom activity

	Rational Numbers: Concepts & Representations	Whole Numbers, Decimals, & Fractions: Concepts of Operations	Number Systems & Properties, Probability	Proportional Reasoning & Probability	Geometry & Measurement	Patterns, Function, & Algebra
Adventure	1	2	3	4	5	6
Number and Number Relationships						
• understand, represent, and use numbers in a variety of equivalent forms (integer, fraction, decimal, percent, exponential, and scientific notation) in real-world and mathematical problem situations	+,•	+,•		+,•	+,•	
• develop number sense for whole numbers, fractions, decimals, integers, and rational numbers	+,•	+,•		+,•	+,•	
• understand and apply ratios, proportions, and percents in a wide variety of situations	+,•	+,•		+,•	+,•	
• investigate relationships among fractions, decimals, and percents	+,•			+,•		
• represent numerical relationships in one- and two-dimensional graphs		+,•		+,•		+,•
Number Systems and Number Theory						
• understand and appreciate the need for numbers beyond the whole numbers	+,•	•	+,•	+,•	+,•	
• develop and use order relations for whole numbers, fractions, decimals, integers, and rational numbers	+,•	•	+	+,•	+,•	
• extend their understanding of whole number operations to fractions, decimals, integers, and rational numbers	+,•	•				
• understand how the basic arithmetic operations are related to one another		+,•				
Computation and Estimation						
• compute with whole numbers, fractions, decimals, integers, and rational numbers	+,•	+,•	+,•	+,•	+,•	+,•
• develop, analyze, and explain procedures for computation and techniques for estimation	+	+,•	+,•	+	+	+
• develop, analyze, and explain methods for solving proportions	•		•			
• select and use an appropriate method for computing from among mental arithmetic, paper-and-pencil, calculator, and computer methods	+	+	+	+	+	+
• use computation, estimation, and proportions to solve problems	+,•	+,•	+,•	+,•	+,•	+,•
• use estimation to check the reasonableness of results	+,•	+,•	+,•	+,•	+,•	+,•
Patterns and Functions						
• describe, extend, analyze, and create a wide variety of patterns	•	•	+,•	+,•	+,•	+,•
• describe and represent relationships with tables, graphs, and rules	+,•	•	+,•	+,•	•	+,•
• analyze functional relationships to explain how a change in one quantity results in a change in another	•	•	+,•	+,•	•	+,•
Algebra						
• understand the concepts of variable, expression, and equation	+,•					+,•
• represent situations and number patterns with tables, graphs, verbal rules, and equations and explore the interrelationships of these representations			+			+,•
• analyze tables and graphs to identify properties and relationships			+			+,•
• develop confidence in solving linear equations using concrete, informal, and formal methods	•					+,•
• investigate inequalities and nonlinear equations informally	•					+,•
• apply algebraic methods to solve a variety of real-world and mathematical problems	+,•					+,•
Statistics						
• systematically collect, organize, and describe data	+,•	•	+,•	+,•	+,•	+,•
• construct, read, and interpret tables, charts, and graphs	+,•	•	+,•	+,•	+,•	+,•
• make inferences and convincing arguments that are based on data analysis	+,•	•	+,•	+,•	+,•	+,•
• evaluate arguments that are based on data analysis	+,•	•	+,•	+,•	+,•	+,•
Probability						
• model situations by devising and carrying out experiments or simulations to determine probabilities			+,•	+,•		
• compare experimental results with mathematical expectations			+,•	+,•		
• make predictions that are based on experimental or theoretical probabilities			+,•	+,•		
Geometry						
• identify, describe, compare, and classify geometric figures					+,•	
• visualize and represent geometric figures with special attention to developing spatial sense					+,•	
• explore transformations of geometric figures					+,•	
• represent and solve problems using geometric models					+,•	
• understand and apply geometric properties and relationships		+,•			+,•	
	+,•			+,•	+,•	
Measurement						
• extend their understanding of the process of measurement	+,•	+,•	+,•	+,•	+,•	+,•
• estimate, make, and use measurements to describe and compare phenomena	•	•	+,•	+,•	•	•
• select appropriate units and tools to measure to the degree of accuracy required in a particular situation					+,•	
• understand the structure and use of systems of measurement	•	•	•	•	•	•
• extend their understanding of the concepts of perimeter, area, volume, angle measure, capacity, and weight and mass					+,•	
• develop the concepts of rates and other derived and indirect measurements	•					
• develop formulas and procedures for determining measures to solve problems					+,•	+

MARS MOOSE*

Grades K–2 Reading/Language Arts

PHILOSOPHY AND RATIONALE

To become literate communicators, children need to possess skills in all areas of reading/language arts: reading, writing, listening, speaking, viewing, and producing. Mars Moose is an emergent literacy program that provides interactive activities that teach and reinforce vital language arts skills through pictures, video, written text, voice narration, sound, and animation. Mars Moose facilitates the necessary link between the school and the home, helping to create a partnership between students, families, and teachers.

The reading/language arts objectives emphasized in Mars Moose programming and instructional support materials are based on standards that are emerging from joint discussions of the International Reading Association and the National Council of Teachers of English. These standards are also supported by major textbooks and by guidelines from key state frameworks and assessments. The purpose of the Mars Moose programming and support materials is to produce fluent readers and writers who are both engaged and motivated to learn.

STORY LINE

Mars is a lovable blue moose who has come to Earth from another galaxy whose inhabitants have evolved beyond using reading to communicate and learn. Being new to Earth, Mars Moose is interested in learning about his surroundings. His desire to learn about Earth inspires Lety and Lonnie to introduce him to the world of books and join him on numerous adventures. The adventures of Mars Moose encourage students to actively participate in the experience of learning through the use of character, story, and game play. Because he is curious and enthusiastic about learning to read, Mars, through example, encourages students to think of learning to read as a process.

GAMES

Liquid Books, Stay & Play, Cosmic Quest, and WalkAbout are the four types of interactive games that comprise each *Mars Moose* adventure. Each adventure includes exciting characters and interesting story lines that motivate students to accomplish goals while learning to read.

Liquid Books

Each Liquid Book provides an exciting interactive reading experience to stimulate a student's imagination and sense of adventure.

Students solve problems, personalize stories, practice reading strategies, and master literacy objectives while discovering imagination-rich folk tales, intriguing poems, and adventurous stories.

Stay & Play

In Stay & Play, Mars and his friends, the Adams Street Rangers, invite students to explore various science-based objects, and learn by observing the results of their experimentation. Situated in realistic locations, Stay & Play enables students to turn everyday experiences into thrilling educational journeys.

Cosmic Quest

These games use the allure of a compelling story combined with video-game action to enhance students' motivation and learning. Students build vocabulary while practicing directional words.

WalkAbout

In the first WalkAbout adventure, students actively participate in the environment by building dinosaurs, producing plays, or organizing art exhibits. For example, students assist a paleontologist by looking for bones in several rooms of a museum.

*multi-antler research student

Mars Moose
MAJOR OBJECTIVES
Grades K–2

Print & Text Recognition	Phonics/Decoding	Vocabulary Comprehension	Reading Comprehension	Study Skills	Communication	Literary Appreciation
• Recognize directionality	• Identify and match sounds	• Identify directional words	• Sequence information • Follow directions	• Follow directions • Use graphic aids	• Represent meaning through writing (symbols, letters, pictures, etc.)	• Appreciate literature
• Identify letters, words, and sentences	• Identify rhyme	• Define words using context clues	• Classify words and pictures	• Visualize information	• Break representations into words and sentences	• Appreciate author's language
• Identify and match capital and lowercase letters	• Make words using phonograms	• Identify base words/ simple text (1-3 sentences)	• Read and understand text • Check context	• Organize information	• Use invented spelling to convey meaning	• Appreciate illustrations
• Match words to pictures	• Identify initial consonants • Identify short vowels	• Identify and use prefixes and suffixes • Identify and use contractions	• Read, predict, and check predictions	• Self-monitor to make meaning of text	• Begin journal writing	• Recognize author's point of view
• Identify ABC order	• Identify final consonants	• Identify and use synonyms and antonyms	• Recognize theme or main idea and details	• Self-evaluate	• Use writing for several purposes (journal, descriptive, information, letters)	• Compare personal and author's point of view
• Make predictions using visual clues	• Identify medial consonants • Identify long vowels	• Identify and use homophones • Identify and use homographs	• Read and recall using appropriate story grammar categories	• Develop familiarity with use of all aspects of books/ texts	• Use punctuation (capitals, periods, quotation marks)	• Understand characterization
• Recognize punctuation and dialogue	• Identify blends	• Identify multiple meanings of words (e.g., puns)	• Read and understand character motives	• Use a dictionary to add meaning	• Mix conventional spelling and invented spelling	• Understand author's use of mood and tone and their effects on self
• Recognize text structure	• Identify digraphs (initial and final)	• Understand and use figurative language (metaphor, simile)	• Read and summarize text	• Use and compare multiple reference resources to make meaning	• Write for a purpose	• Recognize artistic style and techniques
• Recognize poetic form and structure	• Divide words into syllables	• Acquire multiple ways of expressing meaning	• Read, interpret, and discuss text	• Self-assess ability to make meaning	• Use editing process	• Compare style techniques of multiple authors with self as writer
• Recognize different media formats	• Identify blends	• Identify words with multiple meanings	• Draw invited inferences	• Compare information from two texts	• Write a summary	• Compare illustrations in several books by same author

MONA & MOKI

Grades 3–4 Reading/Language Arts

PHILOSOPHY AND RATIONALE

The Lightspan Reading/Language Arts programs develop and enhance students' abilities to communicate effectively. These programs involve students in reading, writing, listening, speaking, viewing, and producing. The Mona & Moki Drive Me Wild world employs interactive activities to encourage students to increase and broaden their language arts skills through pictures, video, written text, voice narration, and sound. Students, teachers, and families become interconnected in their common goal of achieving literacy for students with the Mona & Moki literacy program for grades 3–4.

Evolving standards arising from joint discussions between the International Reading Association and the National Council of Teachers of English form the basis for the reading/language arts objectives maintained in the Mona & Moki program and in the support materials. Guidelines from key state frameworks and assessments supplement the standards, also. The purpose of the Mona & Moki program and support materials is to engage and motivate students as they learn to read and write.

STORY LINE

The adventures begin when Mona and Moki win first prize in the Calamity Jane Middle School film festival. Their award is a flight into the miniature town of Snetha. To earn their return passage, Mona and Moki must collect keys that help them open the Get-Big-Again riddle box. To obtain the keys, children play many exciting language arts games and solve critical-thinking puzzles.

GAMES

Six games comprise the Mona & Moki Drive Me Wild adventure. Each game takes place in the miniature town of Snetha. After successfully playing the games, students earn keys that Mona and Moki can use to return to normal size.

Prometheus Products

Mona and Moki must retrieve keys from an invention that the shop owner at Prometheus Products has created. Students release two keys from the machine when they correctly replace specific words in sentences with synonyms or antonyms.

Zeus' Zone

To pass through the Zeus' Zone toll booth and earn a key, students must correctly form compound words in a limited amount of time.

Poseidon's Animat

Mona and Moki watch as a llama grabs one of the keys they need. To retrieve the key, Mona and Moki must enter Poseidon's Animat and complete two tasks. After unscrambling words within riddles, students then use the clues provided in each riddle to determine which animal the riddle describes. After correctly solving seven riddles, student receive a key.

AKM (Athena's Key Machine)

The AKM dispenses a key to students as they correctly form word families using phonograms. After forming the correct number of words within the time limit, students receive a key.

Gorgon's Games

To earn two keys, Mona and Moki fill in as hosts for a game show taking place in Gorgon's Games. To participate in the game show, students choose to play one of two games about similes or metaphors. To earn two keys, students must successfully complete the simile game with Mona or the metaphor game with Moki.

Euripides Eatery

Mona and Moki arrive at Euripides Eatery and are told they must play games to earn the keys they need. Using a menu as the game interface, students may choose from two games, one of which requires students to select the correct prefix to complete a word within a sentence. The other game requires students to complete sentences by selecting the correct form of a word to fit the context of a sentence.

Mona & Moki
MAJOR OBJECTIVES
Grades 3–4

Phonics/Decoding	Vocabulary Comprehension	Reading Comprehension	Study Skills	Communicating	Literature Appreciation
• Review consonant and vowel patterns	• Identify synonyms	• Retell	• Sequence information	• Retell (use a story map)	• Appreciate literary devices and techniques
• Review phonograms	• Identify compound words	• Predict outcomes	• Organize information	• Make a chart	• Appreciate literary forms
• Identify consonant blends	• Identify and use prefixes and suffixes	• Recall details	• Follow directions	• Write details to support an argument	• Identify author's point of view
• Identify vowel variants	• Recognize word families superordinates/ subordinates	• Identify main idea	• Sort and classify information	• Fill out a sorting grid	• Appreciate artistic styles, media, and techniques
• Make syllable generalizations	• Identify words with multiple meanings	• Identify details that support a main idea	• Compare information from several sources	• Write a report	• Identify different genres
• Identify medial sounds (consonants & vowels)	• Identify and use descriptive words (adjectives and adverbs)	• Draw inferences	• Understand different genres	• Write different genres	• Recognize artistic styles and techniques
• Identify contractions	• Understand and create contractions	• Find information to support inferences	• Match organization aid to text	• Create a visual aid for a text	• Understand mood and style of writing
• Use context clues	• Identify word definitions using context clues	• Identify characterization	• Extract and record data	• Fill in a chart	• Understand characterization
• Use visual aids to make meaning	• Identify and use figurative language	• Identify details of plot	• Use a story map	• Create a story map	• Appreciate the use of illustration
• Understand grapho-phonemic shifts	• Identify metaphors and similes	• Identify setting	• Understand an outline (plan for writing)	• Create an outline	• Understand author's use of figurative language

str.at.ə.s.*

Grades 5–6 Reading/Language Arts

PHILOSOPHY AND RATIONALE

Becoming literate through reading/language arts requires mastering the various components of language arts: reading, writing, listening, speaking, viewing, and producing. Students can achieve this mastery through str.at.e.s., a literacy program for grades 5–6. Interactive activities comprise str.at.e.s. and encourage and enhance language arts skills and strategies through pictures, video, written text, voice narration, and music. str.at.e.s. serves as a link between school and home and creates an interconnection between student, family, and teacher.

Evolving standards from discussions of the International Reading Association and National Council of Teachers of English form the basis for the reading/language arts objectives emphasized in str.at.e.s. programming. Guidelines from key state frameworks and assessments supplement these standards. These standards and guidelines provide a foundation for the activities and support materials that engage and motivate children to become fluent writers and readers of English.

STORY LINE

str.at.e.s. is a futuristic application that enables people to go to any place in time. Jessica, Tony, Sara, and Max are four high-school students who travel back in time through str.at.e.s. and arrive at important historical events that occurred in the 1800s. With str.at.e.s. students meet historically influential people, solve problems, use reading strategies, and develop a broader vocabulary as they attempt to return to the present by playing games and earning points.

GAMES

str.at.e.s. was designed to teach print and visual literacy, as well as critical thinking strategies and processes. Four adventures consisting of 38 multimedia games; 203 interdisciplinary biographies; and over 190 hours of instruction make up the str.at.e.s. world. Students earn points by playing Word, Strategy, and Clue games within str.at.e.s.

Word Game

Students earn points by matching a word from the biography with a sentence that uses the word correctly. If students need help understanding the meaning of the word, they may listen to a conversation between four individuals with different perspectives—context, guess, root, and definition. After clicking the sentence that the word correctly completes, students earn points and return to the biography.

Strategy Game

Students answer comprehension questions about each biography by reading the question and selecting the correct response. To obtain help answering the questions, students may listen to instructions that suggest reading strategy hints. Students earn points for answering these questions correctly.

Clue Game

Students earn points by matching clues with biographies using information from the biographies. Each of the four adventures presents a different type of clue. Adventure One provides many different pictures of items. Students must comprehend the relevance of a specific picture to a particular biography and select the appropriate picture. In Adventure Two students analyze a series of titles and select a title that reflects the main idea of the biography. Adventure Three lists analogies about the individuals from each biography. Students must apply this information by matching a particular analogy to a single biography. Adventure Four clues consist of riddles designed to convey the main focus of particular biographies. Students must evaluate the information presented by each riddle, then match the riddle to its corresponding biography.

*strange attractor energy source

str.at.ə.s.

MAJOR OBJECTIVES

Grades 5–6

Vocabulary Comprehension	Reading Comprehension	Study Skills	Communicating	Literary Appreciation
• Identify and use synonyms	• Compare and evaluate information from several sources	• Find information from several sources	• Write a report	• Evaluate layout and illustration
• Explain definitions with details and examples	• Make inferences	• Draw inferences	• Keep a journal	• Understand how to keep journal entries
• Identify word categories	• Distinguish between superordinate and subordinate ideas	• Outline information	• Write informational essays	• Identify where important information is placed
• Identify and use antonyms	• Recognize cause and effect	• Determine sequence of information	• Write an essay with point/counterpoint	• Understand hypothetical and data-based arguments
• Identify and understand analogies	• Evaluate author's purpose, point of view, and changing perspectives	• Convey author's purpose using written and spoken word	• Write a personal narrative	• Identify how an author illustrates point of view
• Determine key words	• Make, confirm, and revise predictions	• Revise faulty predictions and make new predictions	• Generate new ideas and predictions	• Evaluate how an author leads a reader to predictions
• Identify and use technical words	• Evaluate evidence	• Judge and weigh evidence	• Summarize information	• Determine information necessary to convey meaning in a text
• Recognize denotation and connotation	• Reflect and respond to literature	• Re-read for further evidence	• Respond to literature	• Identify author's personal writing style
• Identify and use figurative language	• Analyze story elements and their function in a story	• Develop story maps	• Write a story	• Identify mood and style of writing
• Identify and utilize words with multiple meanings	• Recognize propaganda	• Explicitly state the logic (illogic) of an argument	• Advertise piece of writing	• Understand how to present persuasive information

AFFILIATE PROGRAMS

Grades K–6

PHILOSOPHY AND RATIONALE

The Affiliate Program provides a rich supplement to Lightspan's core Language Arts/Mathematics programs. Easily obtainable learning resources in diverse subject areas such as science and social studies are available to the school community. In addition, there are programs for parents and teachers that provide opportunities for enhanced professional development and increased family involvement. Activity cards (K–6) are provided for teacher and family use.

16 TALES

(Grades K–3 Language Arts/Literature)

16 Tales from the Agency for Instructional Technology is a series of sixteen 15-minute video programs in folk literature for children in the elementary grades. The tales reflect the cultural diversity of the American people. The sixteen tales are clustered in four groups, developed from Latin and Hispanic tales, African American stories, the lore of Native Americans, and Asian themes.

16 Tales Titles

Latin/Hispanic Tales: "Tepozton, the Magic Boy from the Mountains," "The Lazy Fox," "Señor Fox and Señor Coyote," "The Flea."

African American Tales: "Ananse and the Golden Box," "How Ananse Got a Thin Waist and Ananse's Visitor Turtle," "Wakaima and the Clay Man," "Brer Rabbit and the Tar Baby."

Native American Tales: "The Dancing Stars and The Friendly Wolf," "The Fire Bringer and How Saynday Brought the Buffalo to the Indians," The Angry Moon," "Coyote and Cottontail and Coyote and the Beaver people."

Asian Tales: "Jose and the Crocodile," "Ma Liang and the Magic Brush," "The Tale of Urashima Taro," "The Blind Man's Daughter."

Objectives

- Build interest in language arts and reading.
- Bring cultural diversity into focus.
- Develop vocabulary and listening skills.

SCIENCE IS ELEMENTARY

(Grades K–3, Science)

Science Is Elementary from the Agency for Instructional Technology consists of ten 15-minute programs in which children use their natural curiosity to observe, question, and physically investigate science. Young children are allowed to explore science concepts actively and authentically on such diverse topics as animals, water, light and shadows, sound, and magnets.

Objectives

- Describe basic concepts of science.
- Demonstrate hands-on and thinking skills while carrying out scientific exploration.
- Apply scientific concepts to aspects of their own lives and the larger world.

HEAD TO TOE

(Grades K–3, Health/Science)

Head to Toe from the Agency for Instructional Technology is a primary health and life sciences series consisting of fifteen 15-minute video programs. The programs help children in the early elementary grades to understand the workings of the human body and to acquire the knowledge, attitudes, and practices necessary for achieving and maintaining good health. Children investigate cells, body systems, germs and disease, the senses, and safety.

Objectives

- Develop criteria for making healthy choices.
- Identify ways to keep safe.
- Know and understand the function of body parts and activities that keep them healthy.

WRITE AWAY

(Grades K–6, Language Arts)

Write Away is a monthly video magazine presented by The Lightspan Partnership, Inc. and the Imagination Machine. The video magazine is an entertaining and educational program that encourages creative writing. Each month approximately eight stories are selected from Lightspan schools to be performed on TV. Pictures of the young authors are shown with their names and schools to create regional identity. Teachers can use the program as a tool for motivating and increasing student writing skills.

Objectives

- Encourage children to write and use their imaginations.
- Provide a great motivational tool for teachers and their students.
- Enhance a school's writing program.

LIFE IN ANCIENT EGYPT, IMMIGRATING TO AMERICA, THE GREAT DEPRESSION

(Grades 4–6, Social Studies)

Life in Ancient Egypt, Immigrating to America and *The Great Depression* from Pine Ridge Productions are interdisciplinary language arts and social studies programs. Excerpts from popular award-winning adolescent literature books are used to explore social studies topics. The chosen passages are intended to motivate students to read the entire text(s).

Objectives

- Build interest and connections between literature and social studies.
- Construct meaning through understanding and interpreting information.
- Synthesize and evaluate information from a variety of texts.

MINDS-ON SCIENCE

(Grades 4–6, Science)

Minds-On Science from Tom Snyder Productions is an interdisciplinary science program which investigates concepts, issues, and achievements that have shaped modern American culture over the last 125 years. Three programs are included in the series: (1) "The Impact of Discovery," (2) "For the Sake of the Nation" and (3) "For Profit, For Planet." In each program, students step into the shoes of someone who must use science to make decisions. Students investigate real and complex issues based on today's most current research.

Objectives

- Encourage cooperative learning.
- Provide problem-solving activities.
- Investigate the scientific method and the role of science in everyday life.
- Use decision-making process in "real-world" situations.
- Investigate key historical relationships between science and society.
- Explore career opportunities in science.

STORY LANE THEATER

(Grades 4–6, Language Arts/Literature)

Story Lane Theater from Rabbit Ears/Macmillan consists of ten classic stories from around the world. The stories are interpreted by well-known artists, musicians, and actors. Each Story Lane Theater selection takes children behind the scenes with a mini documentary that focuses on a creative element of the video, featuring composers, illustrators, and writers.

Story Lane Theater Titles and Country

"Anansi" (Jamaica), "Peachboy" (Japan), "Brer Rabbit and Boss Lion" (Southern U.S.), "King Midas and the Golden Touch" (Greek), "The Tiger and the Brahmin" (India), 'John Henry" (American), "Follow the Drinking Gourd" (American), "Koi and the Kola Nuts" (Africa), "Finn McCoul" (Ireland), "Mose the Fireman." (American).

Objectives

- Personalize heritage and cultural diversity
- Use classic stories to build interest in language arts and reading
- Provide multisensory learning

EVERY CHILD CAN SUCCEED

(Professional Development)

Every Child Can Succeed from the Agency for Instructional Technology consists of seventeen video programs with three components which are designed to show schools how to help disadvantaged students achieve academic success. The primary purpose of the series is to support improvement and reform at the local school level.

The Demonstration Component provides background and suggestions for presenting workshops. It is designed for school trustees, administrators, teachers, political leaders, and parent and community groups.

The Successful Schools Component presents case studies of eight schools that are helping children overcome severe socioeconomic disadvantage and succeed in school.

The Essential Elements Component describes the elements identified by research in effective schools that are crucial to success in helping all students learn and succeed.

FAMILY EDUCATION ENCYCLOPEDIA

(Family Involvement)

The *Family Education Encyclopedia* produced by Instructional Objectives Exchange (IOX) consists of seventy-four, 90–second video articles for use by school districts and parents throughout the nation. The articles deal with current educational issues facing parents and educators. Articles cover a wide range of topics under the categories of health and nutrition, helping children with learning difficulties, parental involvement in the school, school organizations, and processes and instructional strategies.

RELAY™—*A Teacher-Driven Assessment Tool*

PRODUCT OVERVIEW

The Lightspan curriculum programming service includes Relay™, a product for assessing student performance across the curriculum at each level. Relay is a CD-ROM based series appropriate for use as a quantitative pre-test and post-test for children using the Lightspan programming. It can also be used as a practice product to help children prepare to take standardized quantitative tests.

LIGHTSPAN'S ASSESSMENT APPROACH

The Lightspan Partnership believes that quantitative test data is a crucial part of an overall student assessment program. We provide Relay as a tool to measure students' progress towards mastery of much of the range of learning objectives covered in Lightspan.

At the same time, we are aware that many critically important learning objectives do not readily lend themselves to measurement in a test format. Therefore we provide tools and suggestions to Lightspan teachers to assist them in using authentic and performance-based assessment to understand the progress children are making towards their goals. We believe that a thorough assessment program is one that balances both of these approaches.

RELAY: A TEACHER-DRIVEN ASSESSMENT TOOL

Relay is a set of tests in a game format, for use on a personal computer. The product tests for mastery of skills and knowledge across the Lightspan curriculum programming.

Teachers decide which of many possible implementations of Relay they will use, assisted by guidelines that Lightspan provides. In most cases, we recommend that Relay be used to pre-test and post-test students who are working with Lightspan, to identify progress made and opportunities for improvement. In addition, some teachers may choose to use the test "games" as rewards, for remediation, or simply as practice.

Score reports may be saved or printed in a variety of formats, including a summary report to families. Future versions of Relay will support collection of score data over a network.

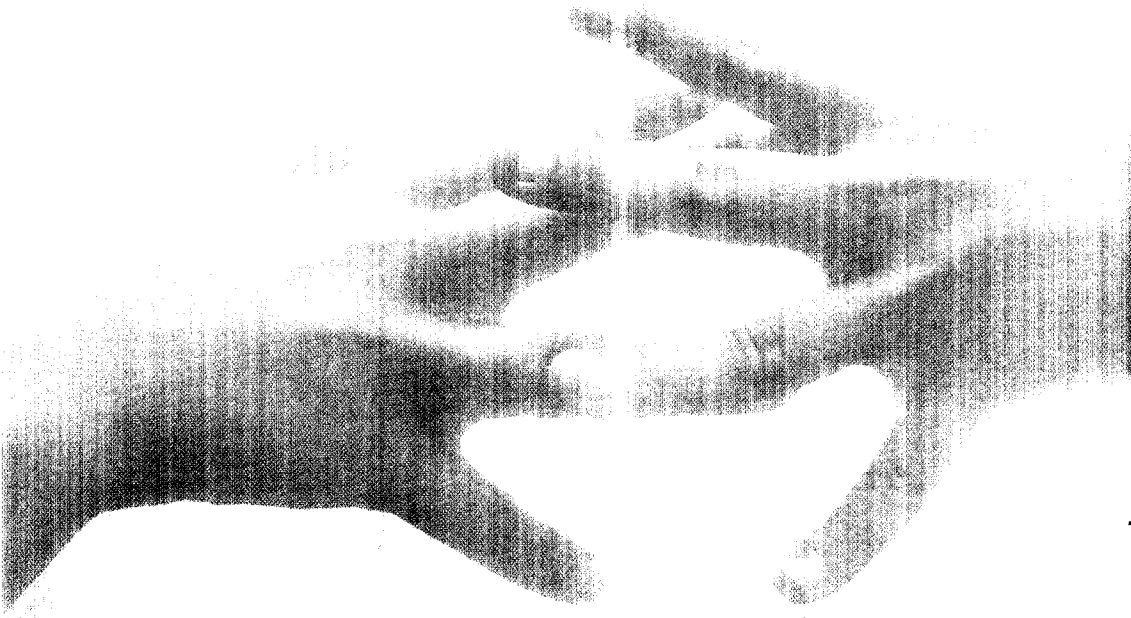
Lightspan's student assessment system, Relay, provides these benefits to educators, students, and families:

- **Correlates with and enhances the school's current curriculum**
- **Supports teacher choice and control in implementation**
- **Provides families with detailed information on student progress**
- **Identifies specific opportunities for student improvement, and, through offline materials, guides teachers to the units of Lightspan programming that will help the child improve a given skill.**
- **Provides practice for students in test-taking strategies**

HOW CAN I USE RELAY TO MEASURE STUDENT PROGRESS AGAINST MY STATE OBJECTIVES?

Relay measures student attainment of the objectives of the Lightspan programming. These, in turn, correlate with curriculum guidelines and frameworks established by several leading states and by professional associations such as the National Council of Teachers of Mathematics, as well as with many leading basal texts in reading/language arts and mathematics. Itemized correlations of Relay test questions with individual state standards are available for an additional charge.

EXPANDING
The Learning Environment



Technology

Solutions for

Creating the

School–Home

Connection

TODAY'S DELIVERY OPTIONS

"FREE-STANDING" OPTIONS

One way to deliver the Lightspan service in schools and homes today is by using CD-ROM discs with one of the following platforms:

Windows and Macintosh PC/TVs. The current generation of multimedia computers incorporates MPEG video decompression technology for full-screen, full-motion interactive video. In many cases, Intel 486 and Motorola 040-generation PCs and the Macintosh can be upgraded inexpensively to deliver MPEG video as well.

Digital Set-Top Boxes. These next generation of cable television converters are far more affordable than PCs but perform many of the same functions. With a CD-ROM drive attached, the set-top box connects to a standard television set and plays interactive digital video in a "free-standing" fashion, while also being ready for later connection to a two-way interactive video network. Prices on digital set-tops by major manufacturers are expected to drop still further in 1996, making this stand-alone device an ideal solution for home deployment of the Lightspan service.

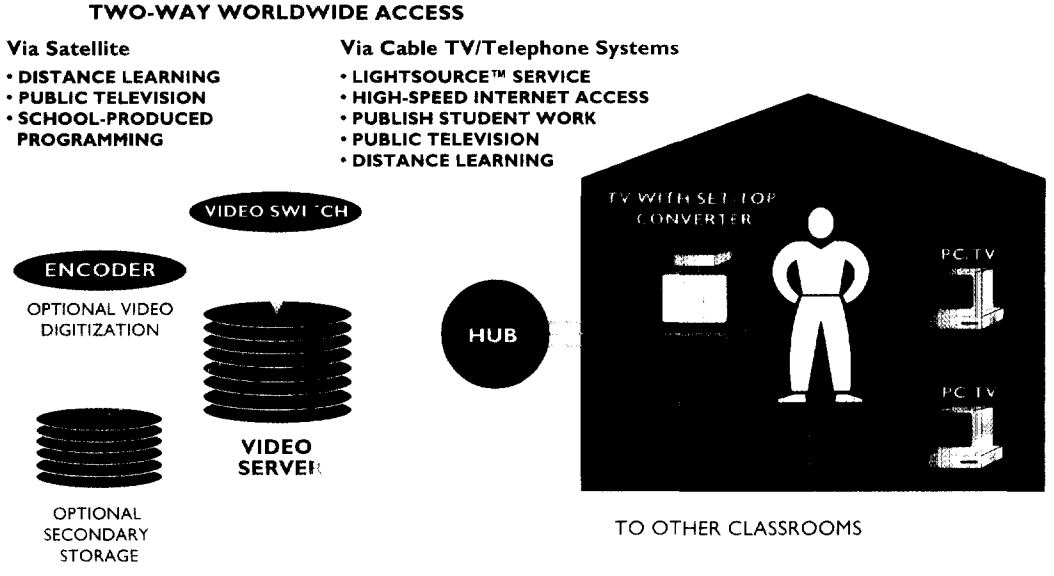
NETWORKED OPTIONS

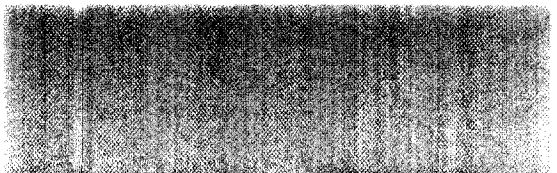
Many Lightspan partner schools choose to deliver the Lightspan programming via one of several types of industry-standard networks. Configurations we recommend are as follows:

Worldwide Video Access Network (WVAN)

Increasingly common in corporate training environments, a Video Access Network is a local area network capable of streaming digital video. The central feature of this configuration is an in-school video server that consists of a RAID controller and dual Pentium architecture. An optional encoder allows for "real-time" digitization and storage of content from a variety of sources, including satellites and cable TV. The software environment is usually Windows NT-based, with clients including Macintosh or Windows PC/TVs or various ethernet-capable "smart" cable set-top boxes.

WORLDWIDE VIDEO ACCESS NETWORK





Using off-the-shelf software and hardware, schools adopting a WVAN gain several valuable benefits:

Curriculum On-Demand. The WVAN makes Lightspan programming and the rest of the school's interactive and linear video content available "on-demand" to each classroom workstation. In a typical configuration, 75 students can use Lightspan content simultaneously throughout the school; greater demands can be accommodated with system upgrades. This on-demand feature enhances teacher flexibility, decision-making, and effectiveness while greatly increasing the accessibility and utility of existing resources.

Efficiency of Combining Systems. Many schools currently maintain two separate infrastructures: one for computer networking and one for instructional television. A WVAN eliminates redundancy by eliminating the distinction between the two media. Schools equipped with cable TV or satellite dishes can distribute their live video feeds to every workstation. With optional video capture equipment, programming received via these inputs as well as in-school video production can be stored as digital files for on-demand access from any workstation in the school.

Communication and Worldwide Access. The WVAN is not only an interactive video network, but also a high-speed data network. It creates an ideal environment for information gathering, communication, and collaborative learning with other classrooms and other schools via the Internet and World Wide Web. These activities are facilitated by LightSource™, Lightspan's Web-based learning service.

Worldwide Data Access Network (WDAN)

In this configuration, PC/TVs or set-tops throughout a school building are served by a data server and LAN. Though the LAN is not equipped to handle multiple interactive video streams simultaneously, it can download any interactive video program to local workstations for storage and access. Teachers and students use a simple menu to download Lightspan programs from the server when they are needed and access the entire program when downloading is complete.

In a typical case, the data server will use a single Pentium processor, a lower-cost disk drive array, CD-ROM drives, and Windows NT as the network operating system. The server can be upgraded to include video services at any time.

The data network configuration in many cases can use existing cabling and LAN components, though Category 5 wiring is preferred for higher-speed access and greater reliability.

The advantages of this type of network are substantially similar to those of the WVAN. Like the WVAN, a Data Access Network offers greater flexibility and range of access to teachers and students in the classroom. Though it cannot stream live video throughout the building, it enables high-speed Internet and Web access. And, importantly, it begins the migration path toward networked digital video technologies, an inevitable direction for any school or business in the late 1990s.

WORLDWIDE DATA ACCESS NETWORK

TWO-WAY WORLDWIDE ACCESS
Via Cable TV/Telephone Systems

- **LIGHTSOURCE™ SERVICE**
- **HIGH SPEED INTERNET ACCESS**
- **PUBLISH STUDENT WORK**

DATA SERVER

TO OTHER CLASSROOMS

Peer-to-Peer Network

In situations where schoolwide networks are not available, individual video-capable workstations can be connected in a peer-to-peer network within the classroom. This gives teachers an efficient method for downloading Lightspan programming off a single CD-drive to local hard drives at each workstation.

DELIVERING LIGHTSPAN TOMORROW

The proliferation of digital video delivery options now being seen will continue to drive down prices for MPEG PC/TVs, set-top boxes, and other video-capable consumer devices over the next several years.

The next step in the evolution of the school–home connection will be delivering Lightspan and other educational resources via a wired connection to student homes. Today, cable television and telephone companies nationwide are in the process of creating interactive digital video distribution networks extending throughout entire communities. These systems, expected to reach millions of homes by the turn of the century, use the same digital video standard and much of the same technology as the devices and networks running Lightspan today. In many communities, we expect to work with schools and telecommunications companies to establish a full distribution network between schools and homes that provides direct, two-way access to interactive video, voice, and text.