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Design Literacy For Children

A thesis submitted to the Faculty
of the College of Imaging Arts and Sciences
in candidacy for the degree of Master of Fine Arts

John Leonard O'Neill
July 2004

Graduate Graphic Design MFA Program
School of Design
College of Imaging Arts and Sciences
Rochester Institute of Technology

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Thesis Changed Direction

As the thesis was developing, the project goals shifted over the course of time. In its early development, the goal was to examine how three areas of design could help define and improve visual and verbal communication skills for elementary school-age children. The three areas of design were visual thinking, design process, and information design. Once the skills were defined, they were studied to better understand how they might serve as a supplement to the New York State Learning Standards. After the initial research and synthesis stages, it was recognized by the designer and the committee members that the scope of the project was too large and required further definition.

Once the scope was narrowed, the designer redirected this thesis by examining how graphic design methods might be used as a supplement to the New York State Learning Standards specifically for English Language Arts (ELA) at the Intermediate level. Relevant graphic design methods could have been identified for all seven subjects of the New York State Learning Standards; however, English Language Arts was chosen because the graphic design methods researched have strong connections to the goals for ELA.

Graphic design methods gathered for this thesis match the objectives for the ELA Learning Standards by allowing 8th grade students to synthesize and visually organize information to discover relationships among content areas, use simple imagery and text to convey a message, and use written language for effective social communication. As a result of using these graphic design methods, 8th grade students could have a better understanding of how to use language in a variety of ways in order to gain effective communication skills.

Goals

- 1 To propose specific graphic design methods that can be a useful supplement to enhance the intermediate (8th grade) English Language Arts Learning Standards of the New York State Department of Education.
- 2 To provide a guidebook for educators.
- 3 To contribute to the ongoing effort to demonstrate the value of design principles in mainstream early education.

New York State Learning Standards Subjects

- Languages Other Than English
- Health and Physical Education
- Math, Science and Technology
- The Arts
- Career Development and Occupational Study
- English Language Arts
- Social Studies

Learning Levels

The standards for each subject have three different levels, and each grade within K–12 fits within one of these levels.

- | | |
|----------------|----------------|
| • Elementary | kindergarten–5 |
| • Intermediate | grade 6–8 |
| • Commencement | grade 9–12 |

There are four Learning Standards within the Intermediate level of English Language Arts:

Standard 1

Language for Information and Understanding

Standard 2

Language for Literary Response and Expression

Standard 3

Language for Critical Analysis and Evaluation

Standard 4

Language for Social Interaction

Standard 1

Language for Information and Understanding

Graphic design methods chosen for English Language Arts Standard 1 are proposed to help 8th grade students learn how to understand information once they have collected it from several different sources. As a result, students will be able to synthesize the information to discover relationships and concepts. Students will also be able to use words and images to verbally communicate information.

Standard 4

Language for Social Interaction

Graphic design methods chosen for ELA Standard 4 help 8th grade students improve their use of oral and written language for effective social communication.

Black Mountain College

Black Mountain, North Carolina, 1933

Black Mountain College was an experimental school located in Black Mountain, North Carolina. Educator John A. Rice and others established the college in 1933. Many of the early faculty and students arrived on campus from Rollins College in Florida. The goal of the college was to educate the 'whole person,' with an emphasis on the role of the arts and creative thinking. The college was closed in 1957. Since the closing of the school, alumni and former faculty have made a huge impact on the creative arts profession.

Although Black Mountain College closed its doors many years ago, the school's philosophy of using the arts and other creative skills to educate the whole person was valuable to this thesis. Like most schools, Black Mountain College taught verbal skills, but what made them different was they made visual arts an integral part of the students' lives. This approach to education was experimental, as they used art and fundamental design principles to teach different subject matter. As a result, students were fully able to learn and develop their minds by gaining verbal skills and visual skills throughout the arts. With these skills, many Black Mountain students went on to have successful careers in art and design fields.

Black Mountain College serves as a model for this thesis with its focus fully on educating the whole person through teaching art and design principles, regardless of subject matter. K-12 students of today may not enter a profession in the arts or in design, but they will be able to apply verbal and visual skills to their future studies and careers.

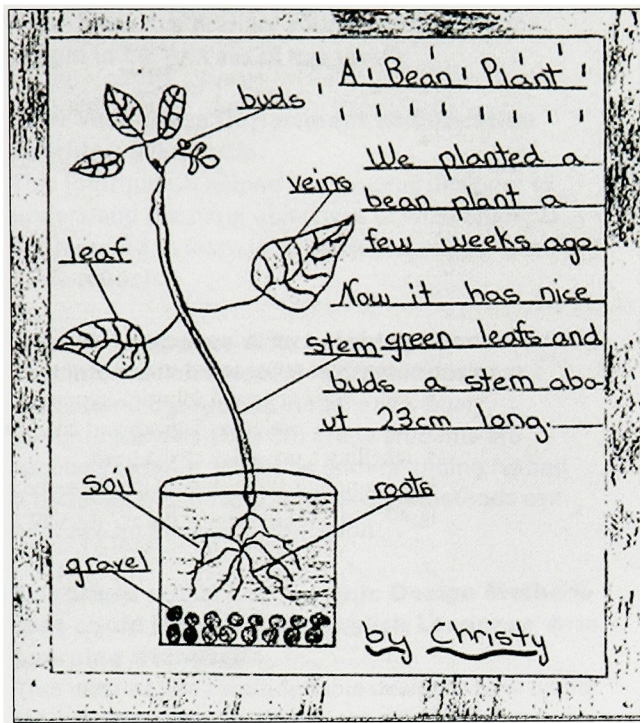
Design as a Catalyst For Learning**Meredith Davis, 1996**

The book, *Design as a Catalyst For Learning*, co-authored by Meredith Davis, Peter Hawley, Bernard McMullan, and Gertrude Spilka, gives an overview of how design has supplemented K–12 education throughout the United States because it helps children gain the verbal and visual skills needed as adults. It does this by showing how the design process can be used to help students understand abstract concepts in each subject taught in school.

It allows students to put ideas to work, and engages students to assess each other's processes. Students do this by identifying and defining problems to understand the goals and the scope of their projects. Once students define problems, they gather and analyze information to better understand the best method to communicate information. After design solutions have been developed, students can evaluate and select the best solution that fits the goals of the project.

This book has informed this thesis by showing how design processes can aid active learning, and can be adaptable to different learning styles because they combine both verbal and visual components. These visual components, such as diagrams, use imagery and text to convey information most effectively.

In addition to discussing the introduction of visual design principles into teaching, the book also gives an overview of the history of implementing design in K–12 education.



I Know What You Mean, Children at Work with Visual Information **Steve Moline, 1998**

The book, *I Know What You Mean, Children at Work with Visual Information*, by Steve Moline, discusses teaching children how to understand and present information through the use of information design components, including charts, diagrams, timelines, etc. Moline presents different examples of how many children in grades K-12 across the United States are gaining verbal and visual information skills by designing and using several information design components. Children can easily learn these skills because information design components often combine the use of verbal and visual information.

By gaining these skills, children are better able to gather information, organize and synthesize information, and communicate information. Moline shows a wide variety of children's school work. For example, illustration diagrams made by 1st graders show how pictorial and diagrammatic imagery can reveal the internal structure of objects. The caption text within the illustration diagrams points to the imagery and conveys verbal information about the object.

This book serves as a model for this thesis by showing how exploring information design components can benefit children. Information design components are often used and designed by professional designers to solve complex communication problems. However, Moline illustrates through his body of examples that information design components can serve as an effective tool where children can gain verbal and visual skills.

There were five primary sources of information sought in the process of this thesis:

1 New York State Department of Education Learning Standards.

This information helped this graphic designer to understand the main objectives of what students are required to learn in all subject areas in New York State schools.

2 English Language Arts Learning Standards 1–4

This information helped this graphic designer understand the specific verbal and visual communications skills 8th grade students are required to learn. With this understanding he had a better idea of how graphic design methods can enhance an 8th grade education.

3 Literature about Key Graphic Design Methods that could Enhance the English Language Arts Learning Standards.

This information reminded this designer how useful the graphic design methods are when solving a visual communication problem.

4 Literature about What is Currently Being Done with Visual Design in K–12 Education.

This information helped this graphic designer understand how his own research can make a contribution to graphic design by discovering that no one has used graphic design methods to supplement K–12 education.

5 Literature from Jane Alexander: Why Design Literacy is Important to K–12 Education.

The statements of Jane Alexander, Chairperson of the National Endowment for the Arts, helped support this graphic designer's argument that verbal and visual skills are important to children's education. The workforce is now requiring workers to communicate both verbally and visually.

New York State Learning Standards

The standards are divided into seven subjects, from the arts to social studies. Each subject lists its own set of learning standards in an attempt to give students a well-rounded education.

The standards' main objectives are listed in the Research section, page 5, while the full text version is listed in Appendix A. The list of the standards' objectives was gathered from the New York State Department of Education website.

usny.nysed.gov/teachers/nyslearningstandards.html
Website reviewed: January 10–May 30, 2004

The Learning Standards represent the core of what all students should know, understand and be able to do as a result of their schooling. Each subject taught in grades K–12 in New York has its own standards.

Subjects are:

- Languages Other Than English
- Health and Physical Education
- Math, Science and Technology
- The Arts
- Career Development and Occupational Study
- English Language Arts
- Social Studies

Learning Levels

The Learning standards for each subject have three different levels, and each grade within K–12 fits within one of these levels.

- | | |
|----------------|----------------|
| • Elementary | kindergarten–5 |
| • Intermediate | grade 6–8 |
| • Commencement | grade 9–12 |

**English Language Arts
Learning Standards 1–4****Main Objectives****Standard 1****Language for Information and Understanding**

Students will listen, speak, read and write for information and understanding. As listeners and readers, students will collect data, facts and ideas; discover relationships, concepts and generalizations; and use knowledge generated from oral, written and electronically produced texts. As speakers and writers, they will use oral and written language that follows the accepted conventions of the English language to acquire, interpret, apply and transmit information.

Standard 2**Language for Literary Response and Expression**

Students will read and listen to oral, written and electronically produced texts and performances from American and world literature; relate texts and performances to their own lives; and develop an understanding of the diverse social, historical and cultural dimensions the texts and performances represent. As speakers and writers, students will use oral and written language that follows the accepted conventions of the English language for self-expression and artistic creation.

Standard 3**Language for Critical Analysis and Evaluation**

Students will listen, speak, read and write for critical analysis and evaluation. As listeners and readers, students will analyze experiences, ideas, information and issues presented by others using a variety of established criteria. As speakers and writers, they will use oral and written language that follows the accepted conventions of the English language to present, from a variety of perspectives, their opinions and judgments on experiences, ideas, information and issues.

Standard 4**Language for Social Interaction**

Students will listen, speak, read and write for social interaction. Students will use oral and written language that follows the accepted conventions of the English language for effective social communication with a wide variety of people. As readers and listeners, they will use the social communications of others to enrich their understanding of people and their views.

Literature about Key Graphic Design Methods That Could Enhance the ELA Learning Standards

This graphic designer was influenced by the graphic design methods he used during his graduate studies. Throughout his time at Rochester Institute of Technology he has learned about these methods in several of his graduate graphic design courses, such as *Design Theory and Methods*, *Graduate Information Design*, and *Graduate Design Topics*. This graphic designer collected as much information as possible about these methods from past course material and other resources.

Gathering Design Methods

Ten graphic design methods were selected from course materials taught in the RIT School of Design. These methods have been a part of this graphic designer's graduate experience and have helped him develop effective design solutions for class projects. This designer's communication and design skills were enhanced through his personal experience using these methods.

Specific graphic design methods have a strong correlation with the goals of the English Language Arts Learning Standards. These methods could supplement 8th grade education to ensure that children improve their verbal and visual communication skills

Graphic design methods gathered for this thesis match the objectives for the ELA Learning Standards by allowing 8th grade students to synthesize and visually organize information to discover relationships among content, use simple imagery and text to convey a message, and use written language for effective social communication. As a result of using these graphic design methods, 8th grade students could have a better understanding of how to use language in a variety of ways in order to gain effective communication skills.

Examples that Best Illustrate How Graphic Design Methods are Used

Once the methods were selected, the designer found examples that demonstrate how these graphic design methods are used by professional designers and college design students. The examples can help 8th grade teachers better understand how these graphic design methods work and how they benefit the individual that uses them. The examples were gathered from different sources, including books, the RIT Graphic Design Archive, and information from graduate courses taught in the RIT School of Design.

Sources for Examples of Graphic Design Methods

Specific examples from these sources appear in the final application, *Design Literacy: Graphic Design Methods Guidebook*. Examples that were not used in the final application can be found in Appendix C.

Matrix

Understanding USA

Richard Saul Wurman

TED Conference Inc., 2000

Illustration Diagram

Information Graphics

Innovative Solutions in Contemporary Design

Peter Wildbur and Michael Burke

Thames and Hudson, 1998

Timeline

I See What You Mean

Children at Work with Visual Information

Steve Moline

Stenhouse Publishing, 1995

Wurman's Organizing Hatracks

Graphic Design Archive at

Rochester Institute of Technology

<http://design.rit.edu>

Date reviewed: June 2004

Typography Hierarchy Project

Professor Karen Moyer

Communication Design

Carnegie Mellon University

Project developed 1979

Team Design

Agnew Moyer Smith

www.amsite.com

Date Reviewed: June 2004

Studio Critiquing

www.aiga.org

What Goes on in Design School?

Date Reviewed: June 2004

Project Proposal

www.aiga.org

Design Business

Date Reviewed: June 2004

Designing Business

Clement Mok

Adobe Press

1996

Presentation Methods

Graduate Graphic Design Program

Rochester Institute of Technology

2003–2004

Case Studies

Information Graphics

Peter Wildbur

Van Nostrand Reinhold, 1989

Literature about What is Currently Being Done With Visual Design K–12 Education

This designer researched sources that discuss the relationship between design and K–12 education to get an understanding of how design has been used to teach children communication skills. The book, *Design as a Catalyst for Learning*, gives a clear overview of the research that has been conducted in this area. The book was written by four authors, most notably Meredith Davis, Professor, Graphic Design, North Carolina State University, and K–12 design consultant.

This book provides an outline of the history of how design has been used within K–12 education:

The 1960s

- Educational programs were developed to bring designers into schools to train teachers how to conduct design activities for their students.
- This resulted in developing professional networks between designers and educators who were interested in design.
- These design activities were generally taking place at the secondary level to teach young students technical skills necessary for a career in design. These activities were pre-professional and highly technical.

1970s and 1980s

- New educational programs were put into place to inform K–12 students about well-designed products, buildings and visual communication.
- These programs helped students understand and participate in designing environments.
- These programs were short-lived and their publications are out of print today.

1990s to Present

- As computer software technology was developed more students began to use digitally-based graphs, charts, etc.
- New educational programs were put into place to teach students how to design new computer technology.
- An educational program was developed to teach children how the design process can help increase understanding in a variety of disciplines. One of these programs was developed by Robin Moore and Meredith Davis.

Literature from Jane Alexander Explaining Why Design Literacy is Important to K–12 Education

The U.S. Education Department website does not discuss children's reading and writing information in a visual manner. However, important figures within the arts and government stated the benefits of design education for children. In the book, *Design as a Catalyst for Learning*, Jane Alexander, Chairperson of the National Endowment for the Arts, made the following statements:

"The world into which students now graduate is changing rapidly as global competition increases..."

"Information technology transforms the way work is conducted."

"The 'knowledgeable worker' is now in demand..."

"Such workers also know how to access, evaluate, interpret and communicate information in a variety of media."

"How do children gain these skills?
Education in the arts is an essential component."

U.S. Dept. of Labor: SCANS Report What Works Require of Schools

While reviewing Meredith Davis' book, *Design as a Catalyst for Learning*, the designer read information about a report that was developed by the U.S. Secretary of Labor's Commission on Achieving Necessary Skills (SCANS). SCANS's report entitled, *What Work Requires of Schools*, was first developed in 1990 and later updated in 2000. The report examined the demands of the workplace to determine whether the current and future workforce was capable of meeting those demands. It described to educators and employers what students and workers need to know and be able to do in order to succeed in the workplace. The information gathered from the SCANS report helped determine if design could help students achieve these skills.

Davis' book gives an informative overview of the detailed information contained in the report. However, the designer reviewed the 529 page document to understand if the SCANS report had any conclusions regarding verbal and visual communication skills being used in the workforce.

The chart from the 2000 SCANS Report shown below categorizes the kinds of skills that effective workers must have.

During the development of the report, SCANS assembled a team of experts to identify the necessary skills required to enter employment. Once the skills were identified and defined, SCANS analyzed different kinds of jobs. The objective of the job analysis was to demonstrate the level of importance of the skills that were identified by the experts.

The report states that many skills required for future workers were described as communication skills, including:

- evaluating information
- organizing and maintaining information
- interpreting and communicating information
- processing information
- visual thinking skills

Key Worker Competencies, Skills, and Qualities Identified by Scans

Competencies for Productive Work		The Foundation for Effective Mastery and Use of Key Competencies		
Use of Resources	Allocates time, money, materials, space, and staff to achieve desired ends	Basic Skills	Thinking Skills	Personal Qualities
Use of Information	Acquires and evaluates information; Organizes and maintains information; Interprets and communicates information; Uses computers to process information	Reading	Creative thinking	Responsibility
Interpersonal Skills	Participates as a member of a team; Teaches others; Serves clients/customers; Exercises leadership; Negotiates to arrive at a decision; Works with people with culturally diverse backgrounds	Writing	Decision-making	Self-esteem
Using Systems	Understands systems; Monitors and corrects performance; Improves and designs systems	Arithmetic	Problem-solving	Sociability
Using Technology	Selects technology; Applies technology to task; Maintains and troubleshoots technology	Mathematics	Seeing things in the mind's eye	Self-management
		Listening	Knowing how to learn	Integrity/honesty
		Speaking	Reasoning	

The synthesis stage of this thesis had three phases:

- 1 Using a matrix to group each graphic design method into separate English Language Arts Learning Standards
- 2 Developing definitions for each graphic design method, and synthesizing the English Language Arts Learning Standards.
- 3 Developing a new format to make stronger connections between how the graphic design methods can supplement the English Language Arts Learning Standards.

Developing Definitions For Each Method

This graphic designer began to write definitions for the graphic design methods. This allowed the designer to understand the main objectives of each graphic design method and how they can be used.

Synthesizing The Learning Standards

When this graphic designer identified and grouped specific graphic design methods for each English Language Arts Learning Standard, he began to summarize main objectives for all four of the ELA Learning Standards in the form of bulleted lists. These lists helped this graphic designer to understand the main objectives of the ELA Learning Standards.

With an understanding of the objectives of the graphic design methods and of the ELA Learning Standards, the designer was better able to see how the graphic design methods could serve as an educational supplement.

Linking each Graphic Design Method with the ELA Learning Standards

A matrix was made to examine how graphic design methods can be used to supplement the New York State Learning Standards for English Language Arts (ELA). The matrix grouped each of the found graphic design methods into four separate lists. Using the matrix, each list of graphic design methods correlated with a specific Learning Standard. The correlation between the two items was based on whether the graphic design methods could help 8th grade students meet one of the four ELA Learning Standards objectives.

The matrix was structured into three parts:

- 1 Notes that explain the main goals and objectives of each New York State Learning Standard for English Language Arts.
- 2 The skill sets that a graphic designer must have to accomplish the goals and objectives of each Learning Standard.
- 3 The graphic design methods that can help students achieve the goals and objectives of each Learning Standard.

Note: page 12.1, foldout of full matrix

Written Text was Developed for each Graphic Design Method Example

Text was written to describe an example for each of the ELA Learning Standards. This text helped illustrate how graphic design methods are used and how they can be adapted to an 8th grade curriculum.

Phase 1 Matrix Format

Phase 2 Definitions

Synthesis Notes that List the Goals Within the New York State Learning Standards (Most of the Goals are Verbal Based)	Objectives Related to Conceptual Thinking, Art and Design That Can Be Intergrated Into The New York State Learning Standards	Processes, Theories, and Principles That Can Be Use By The Students To Learn The Objectives of the The New York State Learning Standards
<p>This Standard is Based On Reading, Writing, Listening, and Speaking for Information And Understanding</p> <p>Key Objectives Gathered From The Standard</p> <ul style="list-style-type: none"> collect data, facts, and ideas from several sources discover relationships, concepts, and generalizations use knowledge generated from oral, written, and electronically produced text use a wide variety of strategies for selecting, organizing, and categorizing information distinguish between relevant and irrelevant information use text features that make information accessible and clear organize information to convey internal relationships use visual forms to support facts and data <p>Key Words</p> <ul style="list-style-type: none"> Acquire information Interpret information Transmit information 	<p>Having the ability to understand visual relationships within the information Charts and matrix diagrams illustrate the relationship between pieces of information.</p> <p>Formatting information so it is accessible and clear to the user Grid structures, tabs, bold headings, and bullets help organize the text while highlighting the main points of the text.</p> <p>Developing visual forms to understand concepts that are often communicated through verbal language A person can write about the history of Rochester and how its landscape changed, however, maps that illustrate the landscape throughout history puts that information into context.</p>	<p>Matrix Diagram This method encourages, or forces, the user to cross-reference and compare characteristics or attributes of subjects that otherwise are not linked to one another</p> <p>Organizational Diagram These diagrams illustrate a general pattern of links and show interrelationships between items. The items displayed in the diagram need not to be physical entities; they can be abstract concepts or activities.</p> <p>Time Diagrams These diagrams illustrate a general pattern of links and show interrelationships between time periods.</p> <p>Wurman Organizing Hatrack This method is a useful problem solving tool that reveals information and relationships by organizing and reorganizing facts and observations. As a result, new conclusions or interpretations can be developed.</p>

Phase 3 New Format

Synthesis	Standard 1 Language for Information and Understanding	1
Overview of Objectives for Standard 1	Overview of Proposal Design Methods for Standard 1	
<p>Structuring and Organizing Objectives</p> <ul style="list-style-type: none"> collect data, facts, and ideas from several sources discover relationships, concepts, and generalizations use knowledge generated from oral, written, and electronically produced text use a wide variety of strategies for selecting, organizing, and categorizing information distinguish between relevant and irrelevant information use text features that make information accessible and clear organize information to convey internal relationships use visual forms to support facts and data <p>Key Words</p> <ul style="list-style-type: none"> Gathering information Organizing information Structuring information 	<p>Structuring and Organizing Methods</p> <p>Matrix Diagram This method encourages, or forces, the user to cross-reference and compare characteristics or attributes of subjects that otherwise are not linked to one another. The different sets of information being compare are formatted on a X and Y grid structure. The comparison is made where the X and Y axis overlaps.</p> <p>Illustration Diagrams This visual involves using simple imagery to illustrate the concept of an object, or process. The imagery is often drawn to represent the object or process it is illustrating. It is most helpful when illustration diagrams are combined with text to reinforces what the image is conveying. Text is also used to explain certain parts of the imagery. Through the use of imagery and text, the viewers receive the information visually and verbally.</p> <p>Time Diagrams These diagrams illustrate a general pattern of links and show interrelationships between time periods.</p> <p>Wurman Organizing Hatrack This method is a useful problem solving tool that reveals information and relationships by organizing and reorganizing facts and observations. The same set of information is put into different categories to draw new conclusions or viewpoints.</p> <p>Typography Typography has its own methods and principles within the area of graphic design that help communicate language in a visual manner. Typography involves formatting headings and body text on a grid structure using type size and weight, tabs, and bullet points.</p> <p>Color Coding This organizing method is used on several visual forms, such as a maps, diagrams or charts. It is a helpful way to organize and make relationships to other pieces of information. Once the text or images are categorized into a color key, it can make reference to that information in other parts of the visual forms.</p>	

Phase 3: Developing A New Format

Although the matrix helped generate and separate the graphic design methods into each of the four Learning Standards, it was realized through discussions with the chief advisor that some of the method definitions did not provide enough detailed information to allow non-designers to fully understand the methods and how they can be used.

It was also determined that the sections on the processes, strategies, communication components, and skill sets blended too much with the information. It was hard to differentiate the two. To solve this problem, these sections were deleted from the matrix. This resulted in a more focused and direct relationship between the graphic design methods and the English Language Arts Learning Standards.

To make this understanding clear to others, the information that appeared on the matrix was reformatted to a new layout using a two column grid system. As a result, the relationship between the English Language Arts Learning Standards and the graphic design methods was more easily seen. This new format marked the beginning of the thesis design application.

New York State Learning Standards for Intermediate Level (8th Grade) English Language Arts.	Synthesis Notes that List the Goals Within the New York State Learning Standards (Most of the Goals are Verbal Base)	Objectives Related to Conceptual Thinking, Art and Design That Can Be Intergrate Into The New York State Learning Standards	Processes, Theories, and Principles That Can Be Use By The Students To Learn The Objectives of the The New York State Learning Standards
Standard 1	<p>This Standard is Based On Reading, Writing, Listening, and Speaking for Information And Understanding</p> <p>Key Objectives Gathered From The Standard</p> <ul style="list-style-type: none">collect data, facts, and ideas from several sourcesdiscover relationships, concepts, and generalizationsuse knowledge generated from oral, written, and electronically-produced textuse a wide variety of strategies for selecting, organizing, and categoring informationdistinguish between relevant and irrelevant informationuse text features that make information accessible and clearorganize information to convey internal relationshipsuse visual forms to support facts and data <p>Key Words</p> <ul style="list-style-type: none">Acquire informationInterpret informationTransmit information	<p>Having the ability to understand visual relationships within the information</p> <p>Charts and matrix diagrams illustrate the relationship between pieces of information.</p> <p>Formatting information so it is accessible and clear to the user</p> <p>Grid structures, tabs, bold headings, and bullets help organize the text while highlighting the main points of the text.</p> <p>Developing visual forms to understand concepts that are often communicated through verbal language</p> <p>A diagram is a visual representation of an idea. A diagram can be used to show the history of Rochester and how its landscape changed over time. A diagram can also be used to show the history of the city of Rochester and how its landscape changed over time. A diagram can also be used to show the history of the city of Rochester and how its landscape changed over time.</p>	<p>Matrix Diagram</p> <p>This method encourages, or forces, the user to cross-reference and compare characteristics or attributes of subjects that otherwise are not linked to one another in a visual manner.</p> <p>Organizational Diagram</p> <p>These diagrams illustrate a general pattern of links and show interrelationships between items. The items displayed in the diagram need not to be physical entities; they can be abstract concepts or activities.</p> <p>Time Diagrams</p> <p>These diagrams illustrate a general pattern of links and show interrelationships between time periods.</p> <p>Wurman Organizing Method</p> <p>This method is a useful problem-solving tool that reveals information and relationships by organizing and reorganizing facts and observations. As a result, new conclusions or interpretations can be developed.</p> <p>Typography</p> <p>Typography has its own methods and principles within the area of graphic design that help communicate language in a visual manner.</p> <p>Color Coding</p> <p>Color coding organizes information into subgroups.</p>
Standard 2	<p>This Standard is Based On Literacy Response And Expression</p> <p>Key Objectives Gathered From The Standard</p> <ul style="list-style-type: none">relate text and performance to their own livesdevelop an understanding of diverse social, historical, and cultural dimensions of text/performance representedrecognize levels of meaningproduce interpretations <p>Key Words</p> <ul style="list-style-type: none">Self expressionInterpretsComprehendingCritiquing	<p>Developing Metaphors to Communicate a Complex Idea or Message</p> <p>Metaphors help make relationships between ideas that are easy understood by an audience.</p> <p>Studio Critiquing</p> <p>Studio critiquing is one of the most common methods of how a designer expresses key elements and information about their work to a group of people. In response, the group interprets the work and offers feedback.</p> <p>Concept Development</p> <p>Designers develop concepts to reinterpret and communicate messages using design principles</p>	<p>Random Juxtaposition</p> <p>The brainstorming method helps develop interesting concepts by exploring connections between subject matters that are often not related</p> <p>Forced Juxtaposition (Imaging Making)</p> <p>This method forces design elements and photos to develop interesting images. The design elements and photos are placed on top or positioned next to each other to develop the image.</p> <p>Mind Mapping</p> <p>This brainstorming method helps generate interesting themes and words that in turn reveal connections and concepts.</p> <p>Sketching</p> <p>Sketching generates ideas in a visual manner.</p>
Standard 3	<p>This Standard is Based On Critical Analysis and Evaluation</p> <p>Key Objectives Gathered From The Standard</p> <ul style="list-style-type: none">analysis experience, ideas, information, and issuesevaluating their own and others' work based on a variety of criteria: logic, clarity, comprehensiveness, conciseness, etc.develop arguments with effective use of detail and evidencemonitor and adjust their oral and written presentations <p>Key Words</p> <ul style="list-style-type: none">OpinionsJudgments	<p>Plan a project by setting goals using the methods of the design process</p> <p>Design planning allows designers to plan projects by defining goals and conclusions, and selecting methods to help develop final solutions.</p> <p>Identifying users' needs</p> <p>During the design process the designers identify and define the needs of the end user (reader, viewer).</p> <p>Finding alternative solutions</p> <p>During the design process the designers identify and weigh alternative design solutions that will best fit the client's and end user's needs.</p> <p>Studio critiquing</p> <p>Studio critiquing is one of the most common methods of how a designer expresses key elements and information about design work to a group of people. In response, the group interprets the work and offers feedback.</p> <p>Case studies</p> <p>Several graphic design firms use case studies to communicate to key audiences about their work. The case studies often lists the goals, methods used to solve the problem, and conclusions.</p> <p>Plan a project by setting goals using the methods of the design process</p> <p>Design planning allows designers to plan projects by defining goals and conclusions, and selecting methods to help develop final solutions.</p> <p>Identifying users' needs</p> <p>During the design process the designers identify and define the needs of the end user (reader, viewer).</p> <p>Finding alternative solutions</p> <p>During the design process the designers identify and weigh alternative design solutions that will best fit the client's and end user's needs.</p>	<p>Heuristic Evaluation</p> <p>This method of evaluating is often used to find usability problems in interface design. The method has five criteria for evaluating:</p> <ul style="list-style-type: none">Predictable behaviorConsistent behaviorFeedbackMemory overloadDialogue is task-oriented <p>Questionnaires</p> <p>Designers use questionnaires to gain feedback about information, gather, or examine how successful design solutions might be.</p> <p>Semantic Differential</p> <p>Semantic differential can be used to evaluate how clients and their audience may view their services or products. This can offer key insights to designers to know how identity systems should be developed for each client.</p>
Standard 4	<p>This Standard is Based On Social Communication and Interaction</p> <p>Key Objectives Gathered From The Standard</p> <ul style="list-style-type: none">gain effective social communicationgain good listening skillsexpress ideas in a respectful mannerlearn languages other than English <p>Key Words</p> <ul style="list-style-type: none">Communicating informationEffective people skills	<p>Project Proposals</p> <p>Depending on the situation, designers can write proposals to clients, organization, and federal and state governments as a way of suggesting ideas for design projects. It is very important to write and illustrate in a clear, confident manner to attract the reviewer's attention.</p> <p>Presentation Methods</p> <p>The presentation of any designer's work is important to make a good impression to potential employers and clients. Good presentation methods are based on presenting the work in a clear and accessible manner.</p> <p>Semantic Differential</p> <p>Semantic differential can be used to evaluate how clients and their audience may view their services and products. This can offer key insights to designers to know how identity systems should be developed for each client.</p>	<p>Matrix Diagram</p> <p>This method encourages, or forces, the user to cross-reference and compare characteristics or attributes of subjects that otherwise are not linked to one another in a visual manner.</p> <p>Organizational Diagram</p> <p>These diagrams illustrate a general pattern of links and show interrelationships between items. The items displayed in the diagram need not to be physical entities; they can be abstract concepts or activities.</p> <p>Time Diagrams</p> <p>These diagrams illustrate a general pattern of links and show interrelationships between time periods.</p> <p>Wurman Organizing Method</p> <p>This method is a useful problem-solving tool that reveals information and relationships by organizing and reorganizing facts and observations. As a result, new conclusions or interpretations can be developed.</p> <p>Typography</p> <p>Typography has its own methods and principles within the area of graphic design that help communicate language in a visual manner.</p> <p>Color Coding</p> <p>Color coding organizes information into subgroups.</p>

Synthesis	Standard 1 Language for Information and Understanding	1
Overview of Objectives for Standard 1	Overview of Proposal Design Methods for Standard 1	
<p>Structuring and Organizing Objectives</p> <ul style="list-style-type: none"> • collect data, facts, and ideas from several sources • discover relationships, concepts, and generalizations • use knowledge generated from oral, written, and electronically produced text • use a wide variety of strategies for selecting, organizing, and categorizing information • distinguish between relevant and irrelevant information • use text features that make information accessible and clear • organize information to convey internal relationships • use visual forms to support facts and data <p>Key Words</p> <ul style="list-style-type: none"> • Gathering information • Organizing information • Structuring information 	<p>Structuring and Organizing Methods</p> <p>Matrix Diagram This method encourages, or forces, the user to cross-reference and compared characteristics or attributes of subjects that otherwise are not linked to one another. The different sets of information being compare are formatted on a X and Y grid structure. The comparison is made where the X and Y axis overlaps.</p> <p>Illustration Diagrams This visual involves using simple imagery to illustrate the concept of an object, or process. The imagery is often drawn to represent the object or process it is illustrating. It is most helpful when illustration diagrams are combined with text to reinforces what the image is conveying. Text is also used to explain certain parts of the imagery. Through the use of imagery and text, the viewers receive the information visually and verbally.</p> <p>Time Diagrams These diagrams illustrate a general pattern of links and show interrelationships between time periods.</p> <p>Wurman Organizing Hatrack This method is a useful problem solving tool that reveals information and relationships by organizing and reorganizing facts and observations. The same set of information is put into different categories to draw new conclusions or viewpoints.</p> <p>Typography Typography has its own methods and principles within the area of graphic design that help communicate language in a visual manner. Typography involves formatting headings and body text on a grid structure using type size and weight, tabs, and bullet points.</p> <p>Color Coding This organizing method is used on several visual forms, such as a maps, diagrams or charts. It is a helpful way to organize and make relationships to other pieces of information. Once the text or images are categorized into a color key, it can make reference to that information in other parts of the visual forms.</p>	

Linking each Graphic Design Method with the ELA Learning Standards

This page shows how the graphic design methods were linked with one of the four English Language Arts Learning Standards. The example shown above illustrates that the main objectives for ELA Learning Standard 1 are about structuring and reorganizing information. The graphic design methods link with Standard 1 to help 8th grade students enhance their skills to structure and organize information.

Precedents

Illustration and Picture Diagrams B

5

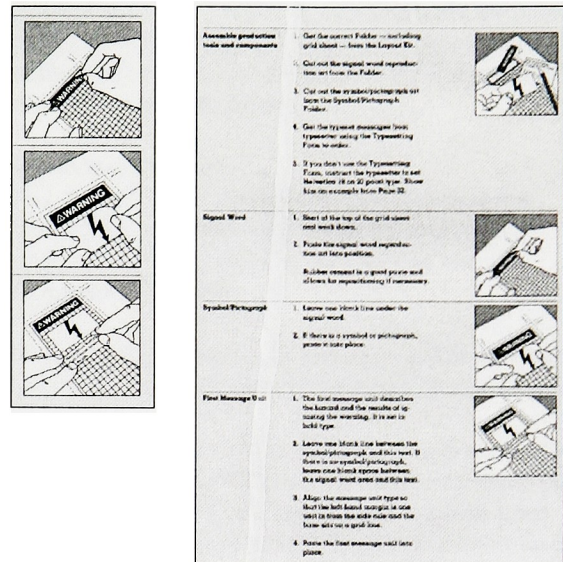


Figure 7

Agnew Moyer Smith, a design firm located in Pittsburgh, designed an informational handbook for Westinghouse. The handbook was designed to provide a warning label system for a range of Westinghouse products by illustrating how effective warning labels should be applied to all products. It covers every step of the label development process—recognizing and classifying potential hazards, writing warnings, selecting symbols, design and layout, determining size and legibility, and label placement.

One spread of the handbook shows how warning labels can be applied to signage and products. The illustrative drawing on the right side of the page visually reinforces what the body text is communicating to the product engineers. Just as with the examples from Steve Moline's book, *I See What You Mean, Children at Work with Visual Information*, the illustrations allow engineers to receive the information visually and verbally.

Written Explanations for each Graphic Design Method Example

Paragraphs were written to describe how the graphic design methods are used in the graphic design profession or in college-level design education. These descriptions of the graphic design methods explain how the methods are used by professional graphic designers, and how 8th grade students can use the very same methods in their own work.

Three Ideation Stages

In the ideation phase of this thesis, several formats were explored to accommodate information explaining the main objectives for the English Language Arts Learning Standards 1 and 4, and the definitions and examples of the graphic design methods associated with each Learning Standard. These are the primary ideation activities for the overview pages and the graphic design methods example pages.

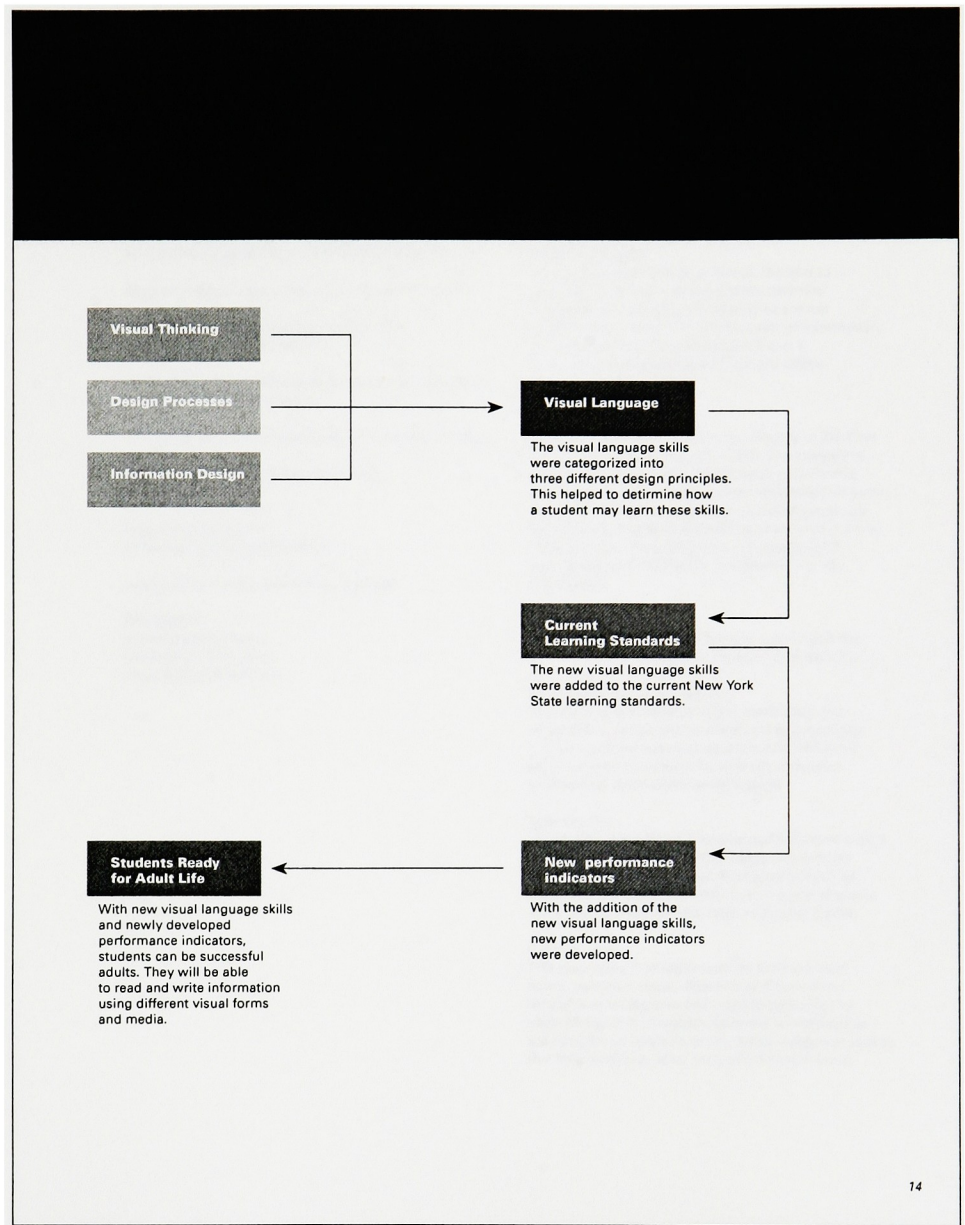
Overview Pages

- The design of the new format helps makes the connection between how the graphic design methods can be a supplement for each of the ELA learning Standards.
- New headings help make the connection between the Learning Standards and the graphic design methods.
- The synthesis notes for each Learning Standard were deleted on each overview page. Text describing the objective of each Learning Standard, taken from the New York State Department of Education website, took their place.

Method Example Pages

- Paragraphs were written in order to describe how the graphic design methods are used in the graphic design profession. Throughout the design process these written descriptions of the methods not only showed how they are used by professional graphic designers, but how 8th grade students can use the very same methods in their own work.
- New text was added to the method example pages called Objective Summaries. This new body of text conveys how the graphic design methods can supplement an 8th grade education by showing how students may be able to use them to improve verbal and visual communication skills.
- Direct text from each of the Learning Standards was added to the Summary Objective. This helped readers understand the each graphic design method can meet the objectives of the Learning Standards.

This is a preliminary ideation sketch for the Graphic Design Methods Guidebook (application).



The project goals shifted over the course of time. In its early development, the goal was to examine three areas of design and how they could help improve visual and verbal communication skills for elementary school-age children. The three areas of design were visual thinking, design process, and information design. Once the skills were defined, they were studied to better understand how they might serve as a supplement to the New York State Learning Standards. After the initial research and synthesis stages, it was recognized by the designer and the thesis committee members that the scope of the project was too large and required further definition.

Synthesis	Standard 1 Language for Information and Understanding	1
Overview of Objectives	Design Methods	
Structuring and Organizing Objectives <ul style="list-style-type: none"> • collect data, facts, and ideas from several sources • discover relationships, concepts, and generalizations • use knowledge generated from oral, written, and electronically produced text • use a wide variety of strategies for selecting, organizing, and categorizing information • distinguish between relevant and irrelevant information • use text features that make information accessible and clear • organize information to convey internal relationships • use visual forms to support facts and data 	Structuring and Organizing Methods Matrix Diagram This method encourages, or forces, the user to cross-reference and compared characteristics or attributes of subjects that otherwise are not linked to one another. The different sets of information being compare are formatted on a X and Y grid structure. The comparison is made where the X and Y axis overlaps. Illustration Diagrams This visual involves using simple imagery to illustrate the concept of an object, or process. The imagery is often drawn to represent the object or process it is illustrating. It is most helpful when illustration diagrams are combined with text to reinforces what the image is conveying. Text is also used to explain certain parts of the imagery. Through the use of imagery and text, the viewers receive the information visually and verbally. Time Diagrams These diagrams illustrate a general pattern of links and show interrelationships between time periods. Wurman Organizing Hatrack This method is a useful problem solving tool that reveals information and relationships by organizing and reorganizing facts and observations. The same set of information is put into different categories to draw new conclusions or viewpoints. Typography Typography has its own methods and principles within the area of graphic design that help communicate language in a visual manner. Typography involves formatting headings and body text on a grid structure using type size and weight, tabs, and bullet points. Color Coding This organizing method is used on several visual forms, such as a maps, diagrams or charts. It is a helpful way to organize and make relationships to other pieces of information. Once the text or images are categorized into a color key, it can make reference to that information in other parts of the visual forms.	
Key Words <ul style="list-style-type: none"> • Gathering information • Organizing information • Structuring information 		

Overview Pages

The 20" by 30" wide matrix was too large a format to be easily distributed to teachers and school systems within New York State. The new 8.5 by 11 inch format, shown above, makes the information more accessible to all teachers.

In addition to the new format's accessbilty, it clearly makes the connection between the graphic design methods and the English Language Arts (ELA) Learning Standards.

Understanding the Format

Each Learning Standard for English Language Arts (ELA) and its corresponding graphic design methods were given its own individual page. The page was labelled with the name of the specific Learning Standard. An overview of the objectives appeared in the left column, while a description of the graphic design methods appeared in the right column.

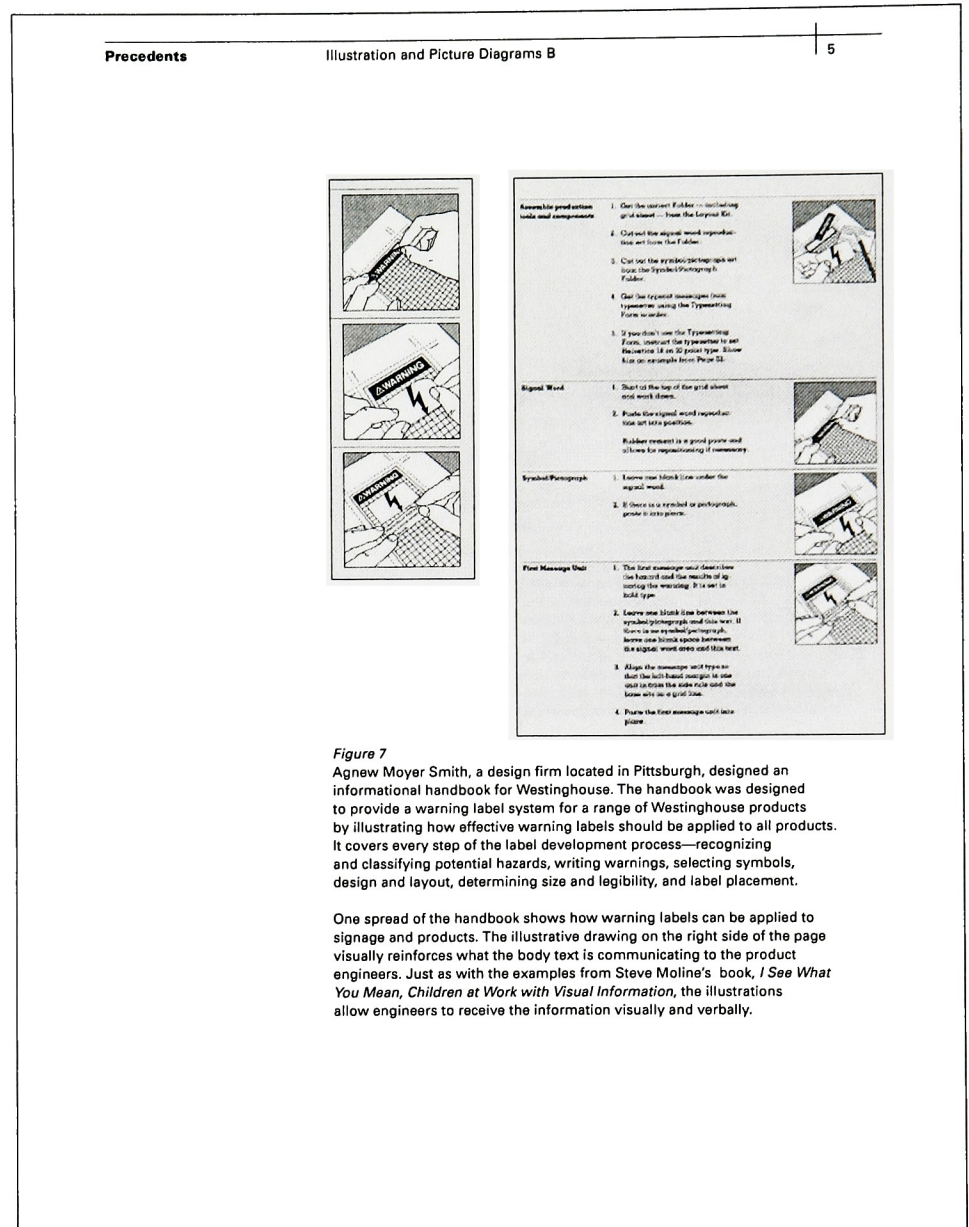
The heading above the Learning Standards and the graphic design methods has been improved in this version. With the additional text readers can understand that the graphic design methods are to be a supplement for the Learning Standards.

Overviews	Standard 1 Language for Information and Understanding	1
Main Objective Current English Language Arts Learning Standard 1	Design Methods Proposed to be added to the English Language Arts Learning Standard 1	
<ul style="list-style-type: none"> • collect data, facts, and ideas from several sources • discover relationships, concepts, and generalizations • use knowledge generated from oral, written, and electronically produced text • use a wide variety of strategies for selecting, organizing, and categorizing information • distinguish between relevant and irrelevant information • use text features that make information accessible and clear • organize information to convey internal relationships • use visual forms to support facts and data 	<p>1 Matrix A matrix is a rectangular system of horizontal rows and vertical columns where two or more sets of information can be compared. Attributes of a subject listed in the vertical y-axis can be compared or cross-referenced with different attributes listed in the horizontal x-axis. This method allows the user to compare characteristic or attributes that otherwise are not linked to one another. The comparison is made where the x and y axis intersect</p> <p>2 Illustration Diagrams This kind of diagram uses simple imagery to explain an idea, a concept, an object, or process. The imagery is often highly representational to represent the actual object. It is most helpful when illustration diagrams drawn imagery with text. Text can reinforce, explain, and label parts of an image, so the viewer receives information visually and verbally.</p> <p>3 Timeline A timeline represents a period of time, usually visually depicted as horizontal line that is divided in increments of time (days, months, years, decades, etc.) to mark specific information, highlight events in history, trace major accomplishment – any conceivable listing of information across a time period.</p> <p>4 Wurman's Organizing Hatracks Architect and information designer Richard Saul Wurman developed this method of organizing information in five different ways: alphabetically, by time, by magnitude, by category, and by chronology. This method is a useful problem solving tool that reveals information and relationships by organizing and reorganizing facts and observations. The same set of information is put into different categories to draw new conclusions or viewpoints.</p> <p>5 Typographic Hierarchy This method uses the fundamental typographic variables and how they reveal the hierarchy of information inherent in a message.</p>	
Key Words Gathering information Prioritizing information Structuring information		

As the application developed, the layout remained largely the same. New headings, body text, and bullet point items were added. The heading at the top of the page naming the Learning Standard was now enlarged and made bold to emphasize the specific standard being addressed. The purpose of these pages is to give the reader an overview of the Learning Standards' objectives and the description of the corresponding design methods before they review the sections that provide examples of the graphic design methods.

Overviews	Standard 1 Language for Information and Understanding	4
Main Objective Current English Language Arts Learning Standard 1	Design Methods An Educational Supplement to Enhance the English Language Arts, Learning Standard 1	
Students will listen, speak, read, and write for information and understanding. As listeners and readers, students will collect data, facts, and ideas; discover relationships, concepts, and generalizations; and use knowledge generated from oral, written, and electronically produced texts. As speakers and writers, they will use oral and written language that follows the accepted conventions of the English language to acquire, interpret, apply, and transmit information.	<p>1.1 Matrix A matrix is a rectangular system of horizontal rows and vertical columns where two or more sets of information can be compared. Attributes of a subject listed in the vertical y-axis can be compared or cross-referenced with different attributes listed in the horizontal x-axis. This method allows the user to compare characteristics or attributes that otherwise are not linked to one another. The comparison is made where the x and y axes intersect.</p> <p>1.2 Illustration Diagrams This kind of diagram uses simple imagery to explain an idea, a concept, an object, or process. The imagery is often highly representational to depict the actual object. It is most helpful when illustration diagrams combine drawn imagery with the text. Text can reinforce, explain, and label parts of an image, so the viewer receives information visually and verbally.</p> <p>1.3 Timeline A timeline represents a period of time, visually depicted as a horizontal line that is divided into increments of time (days, months, years, decades, etc.) to mark specific information, highlight events in history, or trace major accomplishments – any conceivable listing of information across a period of time.</p> <p>1.4 Wurman's Organizing Hatracks Architect and Information designer Richard Saul Wurman developed this method of organizing information in five different ways: alphabetically, chronologically, categorically, by time, and by magnitude. This method is a useful problem-solving tool that reveals information and relationships by organizing and reorganizing facts and observations. The same set of information is put into different categories to draw new conclusions or viewpoints.</p> <p>1.5 Typographic Hierarchy This method uses the fundamental typographic variables of position, weight, size, etc, to reveal the hierarchy of information inherent in a message.</p>	

The bulleted list of objectives was replaced by the actual text, describing the objectives of each Learning Standard, taken from the New York State Department of Education’s website. A numbering system was also added to allow readers to more easily connect the individual graphic design methods with their associated examples that follow on successive pages.



Method Description

Paragraphs were written to describe how specific graphic design methods are used in the design profession. Throughout the design process these written descriptions of the methods not only showed how they are used by professional graphic designers, but how 8th grade students can use the very same methods in their own work.

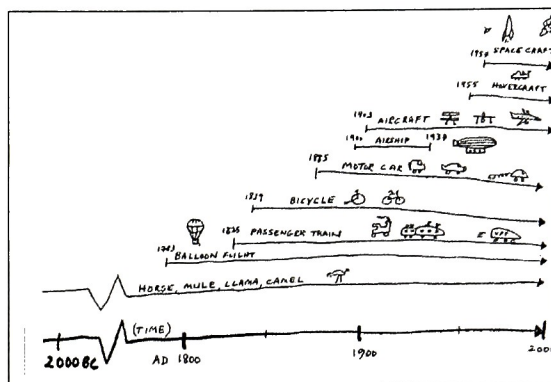
During the next stage of the process, the designer concentrated on headings and written descriptions that were undeveloped. Examples were being refined. The description showed how professional graphic designers and college students studying graphic design use each method.

Method Examples

1.3 Timeline

6

Various forms of transportation since 2000 BC are shown to allow students to discuss and examine how transportation inventions may have influenced one another.

**Resource**

I See What You Mean
Children at Work with Visual Information

Method Description

Moline states in his book that timelines are useful when tracking historical events which overlap and have some bearing on each other. In the timeline example at left different historical information about several subject matters is displayed on different axes. Doing this allows the viewer to better understand the sequence of events and how the various modes of transportation may have influenced one another.

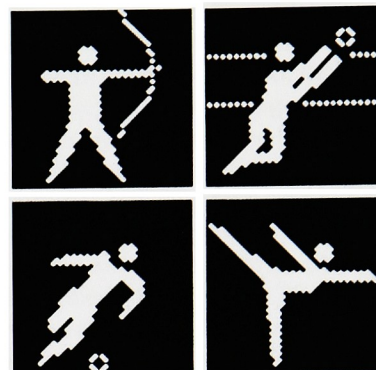
Objective Summary

Timelines like these can help students learn about historical events. In addition, it can allow the students to communicate their process and final conclusions in a long-term project. Once students are finished with a long-term project on any subject matter, they can be asked to develop a timeline that will structure and visually organize each step of the process. Putting each step on a separate horizontal level demonstrate how the steps influence each other. Reinforcement of what was learned by using the timeline can be a good conclusion to any project.

Headings were added, to clarify content for individual parts of the graphic design method example pages. *Method Description* describes how this graphic design method is used by professional graphic designers, graphic design students, and children using design components in their school work.

Objective Summary paragraphs describe how the graphic design methods are used in the graphic design profession. Throughout the design process these written descriptions of the methods not only showed how they are used by professional graphic designers, but how 8th grade students can use the very same methods in their own work.

The pixilated concept of the Amsterdam Olympic sports pictograms influenced the poster and other design applications for the proposed 1992 Amsterdam Olympic Games.



Method Description

In the book *Information Graphics*, author Peter Wildbur, includes a case study about the proposed 1992 Amsterdam Olympic pictograms design project. Case studies like this inform graphic designers about past and current projects and can provide them with a better understanding of how processes and technologies can solve unique visual communication problems.

In this case study Wildbur gives a summary explaining when the pictograms were first developed and used, how the concept for the Amsterdam Olympic sports pictograms were first developed using hand sketching and later with computer software, and concludes with a review of how the pixilated concept of the pictograms influenced other design applications for the 1992 Olympic Games. Pixels are small digital, diagonals square shapes developed by imaging software. When pixels are group together they help make a single image with square edges.

Information about the history of pictograms explains how the 1992 Amsterdam Olympic pictograms emerged over time and also allows readers to understand why pictograms are an effective communication component. Wildbur is not only effective in describing how the pixilated pictograms are a symbol for each Olympic sport, but also how they convey the highly technical culture of Amsterdam.

Objective Summary

This method will help students use written language for effective social communication with a wide variety of people.

Whether they appear in printed form or on the internet, case studies provides a wealth of information for professional graphic designers. Students can also use case studies as an effective method to verbally summarize the school projects they have completed. This method requires students to verbally explain ideas, articulate a process from beginning to end, and convey how and why certain factors may have had an effect on the final result of the project.

Resource

Information Graphics
Peter Wildbur
Van Nostrand Reinhold, 1989

Specific terms from each of the New York State Learning Standards for ELA were added to the Objective Summary. This is intended to help readers more clearly understand the connection between the graphic design methods and the Learning Standards objectives.

Determining which English Language Arts Learning Standards would be Used in the Graphic Design Methods Guidebook

During the final stages of this thesis, the guidebook went through several changes. The biggest change occurred when it was decided that the guidebook should cover only two of the New York State Learning Standards for English Language Arts (ELA). Before the new direction was decided upon, the goal had been to select graphic design methods that could supplement all four of the New York State Learning Standards for ELA. The designer saw a strong correlation between using graphic design methods and meeting the objectives of the Learning Standards for ELA by adding verbal and visual components. The graphic design methods, such as illustration diagrams and timelines, combine verbal and visual language to communicate information effectively and clearly. The graphic design methods researched had the strongest correlation with achieving the goals for ELA Learning Standard 1: *Language for Information and Understanding*, and Standard 4: *Language for Social Interaction*.

Choosing a Structure For The Guidebook

An introductory section was added to the guidebook to explain why graphic design methods were being proposed to help 8th grade students meet the Learning Standards for ELA. The introductory section explains what the guidebook is about and how it is to be used. The overview provides a definition of graphic design for teachers who may not have been exposed to the graphic design profession. New examples for some of the methods were found and rewritten in order to help teachers understand what each graphic design method is used for and how it can be applied to their lesson plans.

Once the introductory pages were added, the Application and Resources sections were placed in the back of the guidebook. The Application section gives an example of how teachers can apply more than one graphic design method to their lesson plan, while the Resources section offers selected reading on graphic design methods.

Introduction Page

This page gives a definition of graphic design and outlines the goals and objectives for the guidebook.

Introduction	Supplementing Intermediate English Language Arts Through the Use of Graphic Design Methods	1
<p>Defining The Purpose and Function of Graphic Design</p> <p>Graphic design combines both verbal and visual communication to engage, inform, instruct, and enlighten an individual or a large audience. It defines the function of how information is communicated through several different media, such as printed books, brochures, posters, packaging, etc. As the technology in the field advanced, graphic designers were able to communicate information using applications such as time-based and interactive media, and environmental graphics, just to name a few. With such varied mediums and applications, graphic design has had an enormous impact on society. Citizens of the world now come into contact with graphic design from the range of messages that surround them, from reading books and other documents, and through their access to the Internet.</p> <p>Graphic designers are trained professionals who work with others to help businesses communicate messages. It is commonplace to have graphic designers working with printers, photographers, illustrators, and computer programmers. However, graphic designers today are collaborating with people outside the arts, such as doctors, business leaders, and government officials, to assure the accuracy of the information that is contained in their designs, which is often outside the graphic designer' area of expertise. It is a marriage of the consultants' knowledge on a variety of diverse topics and the graphic designer's ability to convey that knowledge most effectively to the widest audience possible.</p> <p>A graphic designer uses a range of principles and methods to solve complex visual and verbal communication problems. These design methods help the graphic designer identity objectives, brainstorm ideas, organize and present information, evaluate solutions, and monitor the manufacturing of design solutions. The graphic design profession has borrowed methods from other disciplines and has incorporated them into the graphic design process. The mediums and applications may change over time as technology continues to develop; however, these design methods will remain the backbone of communicating information.</p>	<p>Enhancing 8th Grade Education Through Graphic Design</p> <p>This guidebook presents graphic design methods and explains how they may be used to enhance the teaching of 8th grade students in the New York State Education system. The purpose is to show that these design methods can be a valuable supplement to the English Language Arts Learning Standards at the intermediate level. The goal is not to direct students into a professional graphic design career, but to show that learning and using these methods will reinforce for the students what the U.S. Department of Labor stated in its 1992 report, <i>What Workers Requires of Schools</i>, "that all adults of today need verbal and visual communication skills to function in the workforce."</p>	

Overview Page

This page lists the objectives for the Learning Standards and gives a description for each graphic design method

Overviews	Standard 1 Language for Information and Understanding	3
Main Objective Current English Language Arts Learning Standard 1	Design Methods An Educational Supplement to Enhance the English Language Arts, Learning Standard 1	
Students will listen, speak, read, and write for information and understanding. As listeners and readers, students will collect data, facts, and ideas; discover relationships, concepts, and generalizations; and use knowledge generated from oral, written, and electronically produced texts. As speakers and writers, they will use oral and written language that follows the accepted conventions of the English language to acquire, interpret, apply, and transmit information.	<p>1.1 Matrix A matrix is a rectangular system of horizontal rows and vertical columns where two or more sets of information can be compared. Attributes of a subject listed in the vertical y-axis can be compared or cross-referenced with different attributes listed in the horizontal x-axis. This method allows the user to compare characteristics or attributes that otherwise are not linked to one another. The comparison is made where the x and y axes intersect.</p> <p>1.2 Illustration Diagrams This kind of diagram uses simple imagery to explain an idea, a concept, an object, or process. The imagery is often highly representational to depict the actual object. It is most helpful when illustration diagrams combine drawn imagery with the text. Text can reinforce, explain, and label parts of an image, so the viewer receives information visually and verbally.</p> <p>1.3 Timeline A timeline represents a period of time, visually depicted as a horizontal line that is divided in increments of time (days, months, years, decades, etc.) to mark specific information, highlight events in history, or trace major accomplishments – any conceivable listing of information across a period of time.</p> <p>1.4 Wurman's Organizing Hatracks Architect and information designer Richard Saul Wurman developed this method of organizing information in five different ways: alphabetically, chronologically, categorically, by time, and by magnitude. This method is a useful problem-solving tool that reveals information and relationships by organizing and reorganizing facts and observations. The same set of information is put into different categories to draw new conclusions or viewpoints.</p> <p>1.5 Typographic Hierarchy This method uses the fundamental typographic variables position, weight, size, etc, and how they reveal the hierarchy of information inherent in a message.</p>	

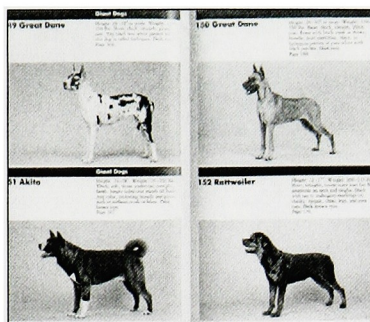
Method Example Page

This page offers a description and an example for each method. It also provides a summary of how each method can supplement an 8th grade education, and cites the resource from which the example was taken.

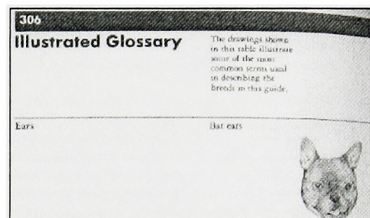
Method Example

1.4 Wurman's Organizing Hatracks

8



These pages of the book categorize each dogs by breed and size.



This is an example of how the Illustrated Glossary organizes the different body characteristics of dogs. The example above shows how some dogs have ears like bats.

Method Description

Information about the design of *Harper's Illustrated Dog Handbook* was gathered from the Design History Archive at Rochester Institute of Technology. During the 1970's, the design team at Vignelli Associates, a design firm in New York City, used Wurman's Hatracks to develop the handbook. Vignelli Associates grouped each dog into separate breeds, sizes and different body type characteristics.

Objective Summary

This method helps students discover relationships, concepts, and make generalizations.

The Wurman's Hatracks method, often used by professional information designers, can be used in 8th grade education to help students learn how to reveal information and relationships by reorganizing facts and observations to come up with new conclusions. This allows students to understand different viewpoints of information presented and their relationship to other information. In the case of *Harper's Illustrated Dog Handbook*, viewers learn about each breed through its size and characteristics compared to other dogs. By using this information, students will be able to make connections among various pieces of information and be able to brainstorm possible ways of organizing that information.

Resource

Graphic Design Archive at
Rochester Institute of Technology
<http://design.rit.edu>
Date reviewed: June 2004

Method Examples Page

This page also offers an image for each example to allow readers to visually understand how each graphic design method works in a specific context.

Method Example

4.5 Case Studies

15

The pixelated concept of the Amsterdam Olympic sports pictograms influenced the poster and other design applications for the proposed 1992 Amsterdam Olympic Games.

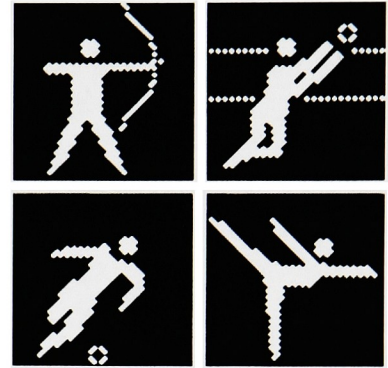


Method Description

In the book *Information Graphics*, author Peter Wildbur, includes a case study about the proposed 1992 Amsterdam Olympic pictograms design project. Case studies like this inform graphic designers about past and current projects and can provide them with a better understanding of how processes and technologies can solve unique visual communication problems.

In this case study Wildbur gives a summary explaining when the pictograms were first developed and used, how the concept for the Amsterdam Olympic sports pictograms were first developed using hand sketching and later with computer software, and concludes with a review of how the pixelated concept of the pictograms influenced other design applications for the 1992 Olympic Games. Pixels are small digital, diagonals square shapes developed by imaging software. When pixels are group together they help make a single image with square edges.

Information about the history of pictograms explains how the 1992 Amsterdam Olympic pictograms emerged over time and also allows readers to understand why pictograms are an effective communication component. Wildbur is not only effective in describing how the pixelated pictograms are a symbol for each Olympic sport, but also how they convey the highly technical culture of Amsterdam.



Objective Summary

This method will help students use written language for effective social communication with a wide variety of people.

Whether they appear in printed form or on the internet, case studies provides a wealth of information for professional graphic designers. Students can also use case studies as an effective method to verbally summarize the school projects they have completed. This method requires students to verbally explain ideas, articulate a process from beginning to end, and convey how and why certain factors may have had an effect on the final result of the project.

Resource

Information Graphics
Peter Wildbur
Van Nostrand Reinhold, 1989



Thesis Exhibit Panels

This exhibition, located at the Bevier Gallery, presented thesis work in progress during March 2004. It showed the progress that this graduate graphic design student was making on his thesis. The above panels, made for the exhibit, present a project overview, research and synthesis, and possible application solutions. The exhibition allowed the RIT community, friends and family to see the thesis projects being developed throughout the school year.

Introduction Panel

Design Literacy

Can Design Help Children Gain The Skills Needed to Write, Read, and Visualize Information?

The thesis is aimed to help middle school students gain writing, reading, and visualization skills that augment subjects outside of design. The thesis will incorporate basic design principles into the English Language Arts course of study to give students a more comprehensive education.

The world into which students now graduate is changing rapidly as information technology transforms the way work is conducted. Such workers know how to access, evaluate, interpret, and communicate information in a variety of media.

Thesis Problem

Visual



There are visual skills that a professional designer uses to visualize and communicate information.

A designer gains these skills through several different learning methods. These methods provide designers with the principles and processes to visualize and communicate information effectively.

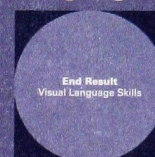
Language



The study of English Language Arts allows students to learn how to use written and spoken language in an effective manner. As students learn about language they become better communicators.

Students must gain several different verbal skills sets to read, write, and speak language. As it stands now students are not required to learn these skills sets to read, write, and speak language in a visual manner.

Visual Language



This thesis is an examination how visual skills used in design could be applied to 8th grade students' language learning. With these skills students will know how to visualize what they speak, read and write.

This thesis researches what language skills are enhanced using design.

Thesis Research

Rudolf Arnheim

During the research process, Arnheim's work and his book *Visual Thinking* were studied. The study gave detailed information about the benefits of thinking visually.

His book helped examine which design principles can be added to the study of English Language Arts.



Visual Thinking
Visual thinking is an aspect of perception concerned with seeing and thinking – comparing the perception of what one sees with the reasoning of what one thinks.

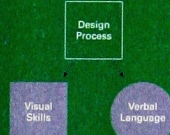
Visual thinking linked with specific visual skills provides an in-depth method for learning verbal language.

Meredith Davis

Meredith Davis' research and book *Design as a Catalyst for Learning* explores how methods used during the design process can help children gain problem solving and creative skills.

Case studies from the book examined how children can gain better problem solving and creative skills enhancing their ability to:

- Identify and define problems
- Gather and analyze information
- Determine performance criteria
- Build prototypes
- Select appropriate solutions
- Implement choices
- Evaluate outcomes



Design Process
The design process involves brainstorming and visual methods that take place in sequence to communicate and visualize information.

Students gain visual and language skills while also taking part in the design process.

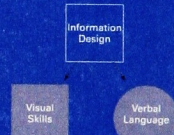
Steve Moline

During the research process, Moline's work, and his books, *I See What You Mean* and *The Information Toolkit* were studied. He states that children often learn how to read and write through storytelling. However, as adults they will mostly be involved with reading and writing for information purposes.

Moline has spent much of his time researching and teaching children how to read and make several different information design components, such as:

- Diagrams
- Charts
- Maps

As children read and make information components they will use their visual thinking and problem solving skills.



Information Design
Information design is the practice of filtering and presenting information in accordance with design principles in order to understand – and communicate to others – the essence, the meaning of that information.

Students gain visual skills and language skills at the same time as they take part in this process.

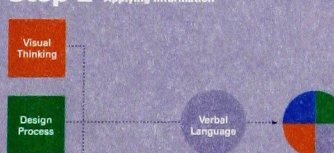
Thesis Solution

Step 1 Gathering Information

The thesis explored different ways design enhances English Language Arts education by allowing children to write and read information in a visual manner.



Step 2 Applying Information



Different pieces of information gathered from the three different areas of design were selected and applied to 8th grade study of language. This develops a better balance between verbal and visual skills as students gain language comprehension.

Step 3 Application Implementation

As the three different areas of design are selected to apply to the 8th grade study of language the thesis will propose new Learning Standards for the English Language Arts within the State of New York.

New York State has standards for each subject taught in K-12 education. Each standard lists the objectives what students must do to learn a subject. The Learning Standards for the English Language Arts currently does not list any objectives to gain visual skills.

Visual Skills

How Can Visual Skills Help Students Write and Read Information?

Intoduction

A set of skills were selected and defined in order to understand how visual thinking, design process, and information design can help students gain visual language skills.

This chart gives an overview of the New York Learning Standard for English Arts goals regarding these skills. The chart goes on to organize Rudolf Arnheim's, Meredith Davis', and Steve Moline's ideas and theories about the six different skills. Their concepts are based on the design area in which they are currently specializing.

The ideas and theories from Arnheim's, Davis', and Moline's research were combined and a new Learning Standard for English Arts was proposed. These new standards are listed on the far right of this chart.

Method That Helped Select Visual Skills

Key words that appeared repeatedly were selected from the New York State Standards and used to define the six skills. These words focus on the ability to visualize information in different matters.

The Process of Visualizing Information

Each skill is a part of the process of reading, writing, and visualizing information. The process started with visually analyzing, organizing, and presenting the information.

Method of Defining Visual Skills

A definition within each of the six categories describes the skills the student will attain.

Process of Defining Visual Skills

The definition for each skill was determined using Arnheim's, Davis', and Moline's research, ideas, and theories in conjunction with the New York State Learning Standards.

Skills

Definition

The Ability to Analyze Information

- to evaluate information through reading, writing, listening, and speaking
- to define the needs of the end user

- to make comparisons from different information sources

The Ability to Visualize

- to draw models and diagrams to visualize information that once was verbal or oral
- to make comparisons, rank and organize information

- to communicate ideas to others and convey information learned
- to allow others to comprehend ideas and understand how to make connections from one source to another

The Ability to Make Connections

- to make connections and comparisons from different visual, verbal, and oral content
- to observe and understand information and images from different points of view

- to make relationships between different pieces of information and see how different elements can make up one image
- to understand how one subject matter is related to another

The Ability to Organize Information

- to visually rank and organize information and ideas
- to see information and ideas in a clear manner that is not confusing

- to allow information and ideas to be more accessible to viewers

The Ability to Understand Spaces

- to learn about information focused geographically, locally, nationally, and internationally
- to understand natural and man made architectural spaces
- to have a sense of the world while providing knowledge of community

- to organize human spaces
- to make spaces functional

The Ability to Know Text and Image

- to communicate ideas to others
- to make visual and verbal connections and organize information

- to describe things with text while supporting their position with images.

Skill Chart

Verbal and Visual Communication Skills Related to Information Design

Steve Moline

Biography

Steve Moline is a writer, illustrator, photographer, designer, and literacy consultant. Since 1989 Moline has conducted seminars and workshops for teachers in Australia, New Zealand, Canada, the United States, England, and India. Topics include visual literacy, information literacy, and reading /writing nonfiction. Moline has worked with administrators, curriculum coordinators, graduate students, and teachers through school district offices, training colleges, schools, and literacy organizations. He has conducted classroom demonstration lessons across the nation.

His books include:

- I See What You Mean: Children at Work with Visual Literacy
- The Information Toolkit

Information Design

Information design is the practice of filtering, and presenting information in accordance with design principles in order to understand— and communicate to others— the essence, the meaning of that information.

Students gain visual skills and language skills at the same time as they take part in this process.

This section of the skill chart lists the skills within Information Design, the area of visual communication in which Steve Moline specialized, that help children gain effective visual communication skills. These skills were also examined within two other separate areas of art and design in support of the newly proposed ELA Learning Standards. Each area was grouped within a color-coded list. Skills defined within Information Design were marked blue.

Information Design

The Ability to Analyze Information

- **Analyzing and Evaluating with Visual Form**
to analyze and evaluate information by using appropriate visual form: map, chart, table, diagram, model, or other visual representation
- **Illustrating**
to illustrate verbal and visual connections by developing diagrams

The Ability to Visualize

- **Visualizing Thoughts and Ideas**
to visualize thoughts and ideas by developing diagrams

The Ability to Make Connections

- **Using Information Components**
to make connections and comparisons between information by using information components

The Ability to Organize Information

- **Accessibility**
to make information more accessible to all viewers
- **Presentation**
to visually present information in a clear manner

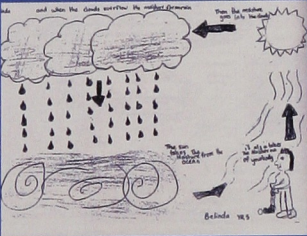
The Ability to Understand Spaces

- **Understanding Environmental Topics**
to understand topics related to geography and environmental topics such as biology, astronomy, and history

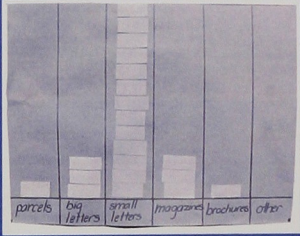
The Ability to Know Text and Image

- **Using Images to Support Ideas and Research**
to support ideas and research using images along with integrated text and sub headings

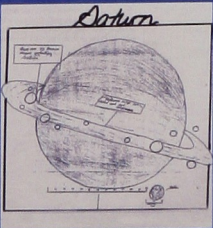
Research Imagery



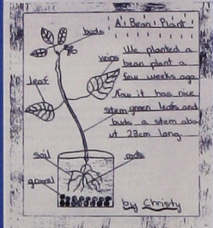
Moline states that charts allow children to organize a sequence of events



Moline gives examples of how graphs help children make comparisons between different information



In his book Moline shows how children can learn about scale of objects through diagrams



Working with text and images is the best way children can support their ideas

Skill Chart
Proposed Learning Standards For English Language Arts (ELA)

Proposal For ELA

A Proposal to Integrate Design Literacy, Principles into Mainstream 8th Grade Education

ELA and Design Literacy

<p>The Ability to Analyze Information</p> <ul style="list-style-type: none">• to critically analyze and evaluate through reading, writing, listening, and speaking• to analyze experiences, ideas, information, and issues presented by others using a variety of established criteria• to compare and synthesize information from different sources	<p>Design Literacy Issues from Research</p> <ul style="list-style-type: none">• Understanding of Images• Approximations• Connections• Alternatives• User Needs• Context• Analyzing and Evaluating with Visual Form• Illustrating
<p>The Ability to Visualize</p> <p>not currently a part of the standards</p>	<p>Design Literacy Issues from Research</p> <ul style="list-style-type: none">• Understanding Visual Concepts• Simple Visual Forms• Visual Shapes and Patterns• The Ability to Visualize• Visualizing Thoughts and Ideas
<p>The Ability to Make Connections</p> <ul style="list-style-type: none">• to discover relationships• to compare and synthesize information from many sources• to recognize different levels of meaning by relating new information to prior knowledge and experience	<p>Design Literacy Issues from Research</p> <ul style="list-style-type: none">• Spatial, Temporal Continuity• Visual Patterns• Visualizing Relationships• Seeing Similarities Among Dissimilar Things• Using Information Components
<p>The Ability to Organize Information</p> <ul style="list-style-type: none">• to use several organizational strategies to gather information in visual forms: charts, graphs, maps, and diagrams from information sources• to categorize the information in charts, graphs, maps, and diagrams• to gain understanding of utilizing text features and formats that make information accessible and usable	<p>Design Literacy Issues from Research</p> <ul style="list-style-type: none">• Categorizing• Visually Recognizing• Broader Categories or Groupings• Formatting• Accessibility• Presentation
<p>The Ability to Understand Spaces</p> <p>not currently a part of the standards</p>	<p>Design Literacy Issues from Research</p> <ul style="list-style-type: none">• Understanding of Images• Approximations• Redesign and Build• User Needs• Spatial Organization• Understanding Environmental Topics
<p>The Ability to Know Text and Image</p> <p>not currently a part of the standards</p>	<p>Design Literacy Issues from Research</p> <ul style="list-style-type: none">• Define the Meaning of Words• Using Images to Support Ideas and Research

Once the visual communication skills were defined within three separate areas of art and design, the skills were group together to develop the new proposed ELA Learning Standards. The color-coding helps the viewers understand which area of art and design was added into each ELA Learning Standard.

How The Guidebook Can Be Used

The guidebook was written and designed to inform 8th grade teachers in New York State how ten graphic design methods can be used to supplement students' education in English Language Arts. Teachers will use the guidebook to understand how several graphic design methods could be a part of their lesson plans throughout the year. They will use these graphic design methods to learn verbal and visual communication skills. These methods will teach students how to organize, gather, and communicate information. Students will also be able to learn interpersonal skills by using graphic design methods to interact and work with others, and to practice communicating among a group of people.

In addition to 8th grade teachers and students, school district superintendents and the New York State Department of Education may use the guidebook to develop new courses and new Learning Standards.

Further Ways To Disseminate

Even though this project has lasted for several months and touched on many important issues regarding design literacy in grades K-12, this graphic designer believes there still remains much work to be done in this area. Although there is one application for the final thesis project, several possibilities exist concerning how the information can reach teachers, parents and students. A proposed guidebook informing 8th grade teachers how graphic design methods can be used to enhance the New York State Learning Standards is a start in the right direction.

Although the *Graphic Design Methods Guidebook* was developed as a requirement for this thesis, it is hoped that this information will reach education departments and teachers in grades K-12 throughout New York State. However, even the most professional research in this area of education has had difficulty reaching a large population of teachers and others in the state education departments. Meredith Davis' book, *Design as a Catalyst for Learning*, states that "often even the best research work in this area has had difficulty reaching mainstream education because it is scattered in different parts of the country and not well documented."

Therefore, if the research that the designer has conducted has any chance of reaching mainstream education, it must join forces with other research efforts working toward this same goal. If this graphic designer continues his efforts in design literacy for children after this thesis project has ended, he believes the next step will be to develop an educational organization. This organization can serve as a forum where professional designers, design educators, education researchers, and grade K-12 teachers and parents can come together to share resources and ideas on using design to help children gain additional verbal and visual skills. The partnerships among these groups of people will allow it to assist in the research and give it a more prominent voice. With increased awareness, using design as an educational tool can become a standard requirement as school systems across the nation update and change their curriculae so children can gain skills that will be vitally important to them as adults.

The organization that this graphic designer will help develop should not overshadow the efforts of other organizations that are trying to do their part for education design literacy for children. There are several different organizations that serve design, art, and education. Some of these organizations, such as the Association for Supervision and Curriculum Development (ASCD), have helped with documenting and promoting design literacy in K-12 by publishing Meredith Davis' book, *Design as a Catalyst for Learning*. However, design literacy is not their primary focus. The organization that this graphic designer will assist in forming will be different from other organizations in that it will lead the way by working with the various states' education departments to develop learning standards that involve active learning with design. It will also work side by side with teachers to help develop design activities for the classroom and lesson plans that help students gain verbal and visual communication skills.

The designer arrived at the idea of forming his own organization after having a positive experience while serving on the Board of Directors for the American Institute of Graphic Arts (AIGA) in Richmond, Virginia. Through his experience with AIGA, he saw first hand how an organization using design could have a positive impact on a community. While serving on the board, the Richmond design community came together as AIGA membership tripled and as more designers became interested in AIGA events. In addition, this graphic designer was involved with designing for non-profit organizations that offer services within the community. Through his experience with nonprofit organizations, he believes he is capable of developing a design literacy organization.

Interview With Ellen Agostinelli

On the 30th of June, an interview took place with Ellen Agostinelli, Assistant Superintendant of the Webster School District. Her role as Assistant Superintendant is to change and develop new curriculums for each K–12 grade level. As Agostinelli reviewed the final thesis application, she made the following remarks:

Teachers will take these ten methods and examine how they may be used across the entire school year.

Students should be taught one method at a time at first. As the students learn one method, another method will be added into the lesson plan. At the end of the school year, students will be using multiple methods at the same time.

The guidebook is a useful tool to help teachers plan their lesson plans throughout the year by examining which method will be most useful to teach different material that a student must learn.

It is important that the same design methods are repeated multiple times throughout the year. If students developed five and six timelines, they would have a better chance of understanding how timelines can be used. If students used one design method one time throughout the year they will forget how to use it or know its purpose.

These design methods can appear within lesson plans, but they also should appear on tests. This adds a visual component that is often not seen on tests.

Professional graphic designers can clearly help teachers to understand these methods and adapt them to their lesson plans.

Graphic Designers can also conduct workshops for students to help them learn about these methods.

The guidebook is effective because it outlines the design methods and shows how they can be used.

This guidebook should be passed along to the teachers in the Webster School District as they map out next year's curriculum to help students learn effective writing and technical skills.

Evaluation Response

The interview with Mrs. Agostinelli went very well as the designer gained key insights to how the graphic design methods can supplement 8th grade education. This graphic designer learned that students should be exposed to one graphic design method at a time. As the students learn one method, another method can be added into the lesson plan. At the end of the school year, students will be using multiple methods at the same time. Before the interview, it was thought that children could work with more than one graphic design method from the start of the school year. However, Mrs. Agostinelli explained that if children were exposed to several graphic design methods at one time, they would be overwhelmed. To assure that children learn verbal and visual communication skills, individual graphic design methods should be repeated multiple times throughout the year. This designer was reminded that no matter the age, repeating a task often is a good way to learn.

Mrs. Agostinelli expressed a strong interest in using the graphic design methods proposed in this thesis in her school district to help teachers map out next year's curriculum. If the graphic design methods are going to be used by the Webster School District this graphic designer would volunteer his time to work directly with teachers as they integrated the design methods into K–12 education. Mrs. Agostinelli stated that this designer can get involved and stressed that all professional graphic designers can help teachers to understand these methods and adapt them to their lesson plans. With excitement, Mrs. Agostinelli said that this graphic designer and other professional graphic designers can first get involved by conducting workshops on why design literacy is important to children's education and how to use graphic design methods.

Reflecting on the interview, this graphic designer was very happy to hear that graphic design methods could supplement an 8th grade education in New York State. With the help of Mrs. Agostinelli, this graphic designer saw the possibility of design literacy being applied to all grade levels. She said these very same graphic design methods can be used by younger children with less complex design lesson plans. The interview energized this graphic designer, making him want to continue research on how design literacy can be a vital component of all children's education.

The *Design Literacy* thesis project was developed through several stages: research, ideation, implementation, dissemination, and evaluation. Each stage has contributed to the development of an effective guidebook that explains how ten graphic design methods can be a supplement to an 8th grade education. The guidebook does this by providing a clear and direct summary of the English Language Arts (ELA) Learning Standards Objectives (Standards 1,4), definitions for each graphic design method, and examples that explain how each graphic design method is used to supplement 8th grade curriculae in New York State schools.

The designer conducting this research met all three of his goals for this thesis by:

Proposing Specific Graphic Design Methods that can be a Useful Supplement to Enhance 8th Grade Education.

These graphic design methods can supplement an 8th grade education because they combine visual and verbal components. The graphic design methods do this by helping students organize and structure information to see connections, allowing students to use imagery and text together to communicate complex information. This helps students improve their social interaction through verbal and oral communication.

Providing a Guidebook for Educators.

This guidebook informs educators within New York State how each graphic design method is used by graphic design professionals and students to solve complex visual problems, and how they can be adapted to an 8th grade education.

Contributing to the Ongoing Effort to Demonstrate the Value of Design Principles in 8th Grade Education.

Through this study it was learned that the graphic design methods can serve as a learning tool to help 8th grade students gain verbal and visual communication skills. The graphic design methods do this by making learning active and adaptable to different learning styles.

This thesis has helped the designer refine his research, writing, and design skills. Most importantly, he learned that with determination, even the most difficult projects can be a success.

Definitions of Graphic Design Methods

1.1 Matrix

A matrix can be used to help students make comparisons between two sets of information.

1.2 Illustration Diagrams

An illustration diagram can explain an idea, a concept, an object, or process by using representational imagery from a drawing or photograph.

1.3 Timeline

A timeline can be used by students to visually depict a period of time.

1.4 Wurman's Organizing Hatracks

Wurman's Organizing Hatracks can be used to help students reveal information and relationships by organizing and reorganizing facts and observations.

1.5 Typographic Hierachy

Typographic Hierachy can be used to help students reveal the heirarchy of information in a message when writing and formatting documents.

4.1 Team Design

The team design method can be used to help students learn how to communicate and work collabratively in a group setting.

4.2 Studio Critiquing

Studio Critiquing can be used to help students gain valuable feedback and incorporate it into their work.

4.3 Project Proposal

Project Proposals can be used to help students plan, structure, and verbally explain their projects.

4.4 Presentation Methods

Presentation methods can be used to help students present their work with clarity and precision.

4.5 Case Studies

Case Studies can reinforce what was learned by documenting the steps to complete a project.

Definitions of Key Terms**Graphic Design**

A service profession that works with other disciplines to fulfill clients' visual communication needs. Graphic designers use visual principles, theories, and methods to help develop a variety of communication applications, such as books, brochures, websites, etc. As a result of these communication applications, information is given a visual form, function, and purpose.

Graphic Design Methods

The techniques and processes that help graphic designers generate concepts and ideas, reorganize information, make verbal and visual connections, generate interpersonal communication, etc. As a result of using these methods, graphic designers are able to communicate information and interact with others effectively.

Design Literacy

The ability to use design methods, principles, and theories to effectively communicate messages, ideas, and concepts.

Communication Design Principles

Timeless basic guidelines and rules that govern effective visual communication.

Problem-Solving Skills

Visual and critical thinking skills to define, solve and evaluate complex communication problems.

Guidebook

A book that offers information to readers on how to use an item, service, or method by providing examples and illustrations.

K-12 Education

The schooling that a child receives from public or private school systems. As children progress and develop, they graduate to new grade levels each year (kindergarten–grade 12). Children are exposed to a variety of subjects as they advance through each grade level such as, Math, English, Social Studies, and Science.

New York State Learning Standards

A set of learning goals that a student within New York State must attain before taking state exams and before entering the next grade level. Teachers within the State's school systems use these standards as a guideline to develop effective lesson plans.

Performance Indicators

Evidence to confirm that students are attaining the necessary skills set by New York State's Department of Education Learning Standards.

Language

Communication of thoughts and feelings through a system of arbitrary signals, such as voice sounds, gestures, or written symbols. Such a system includes rules for combining its components, such as words.

Interpersonal Skills

The ability to socially interact and communicate with others in a group setting. This involves effective teamwork, and good verbal and visual communication.

American Institute
of Graphic Arts

www.aiga.com

Date Reviewed: June 2004

This website provides online information and resources for the graphic design professional and for those interested in visual communication.

Meredith Davis
Peter Hawley
Bernard Mc Mullan
Gertrude Spilka

Design as Catalyst for Learning

Association for Supervision and
Curriculum Development
1997

This book gives an overview of the history and current information about design education within grades K–12. The book also shows how the design process can help children solve information problems in a creative and visual manner.

Steve Moline

I See What You Mean

Children at Work with Visual Information

Stenhouse Publishing
1995

This book provides information and examples of how visual information components and design considerations, such as usability, can teach children how to gain visual literacy skills.

Dominie Information Toolkit

Using Nonfiction Genres and Visual Text

Book: A, B, and C

Black Cocatoo Publishing
2002

This workbook explains how teachers can help children research and write using visual information components, such as maps and charts.

http://k-8.visual.info

Date Reviewed: June 2004

This website provides resources on how information design can teach children to gain visual literacy skills.

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- | | |
|---------------|--|
| Peter Wildbur | Information Graphics
Van Nostrand Reinhold Company
1989 |
| | <i>This book provides information and examples of how visual information components can be used to solve complex problems.</i> |
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- | | |
|--------------------------------|--|
| Peter Wildbur
Michael Burke | Information Graphics
Innovative Solutions in Contemporary Design
Thames and Hudson
2002 |
| | <i>This book provides information and examples of how visual information components can be used to solve complex problems in contemporary society.</i> |
-
- | | |
|--------------|--|
| Celement Mok | Designing Business
Adobe Press
1996 |
| | <i>This book offers information on how to write an effective project proposal.</i> |

Case Studies**www.klariti.com/business-writing**

Date Reviewed: June 2004

This website offers tips on how to write an effective case study.

Presentations Methods**www.publicspeakingkills.com**

Date Reviewed: June 2004

This website lists information and resources to help all people, regardless of education and age, gain effective presentation and public speaking skills.

Project Proposals**www.captureplanning.com*****How to Write a Business Proposal***

Date Reviewed: June 2004

www.allfreelancework.com/artclepieterse.php
Winning Proposals: 10 Guidelines

Date Reviewed: June 2004

These websites offer information on how to write an effective project proposal.

Appendix A

New York State Learning Standards English Language Arts (ELA)

CONTENTS

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Introduction v

LEARNING STANDARDS FOR ENGLISH LANGUAGE ARTS AT THREE LEVELS 1

SAMPLES OF STUDENT WORK RELATED TO THE STANDARDS 19

Introduction

This revised edition of the *Learning Standards for English Language Arts* incorporates changes to the content standards and performance indicators based on extensive review by the public. It should be considered a working document; as educational practice improves, these standards will continually be revised.

In this document, the format for displaying the standards includes the following:

- the **label** for the standard (e.g., Language for Information and Understanding)
- the **key ideas** that define the standard (preceded by [1] or [2])
- the **performance indicators** that describe the required expectations for students at elementary, intermediate, and commencement levels (preceded by bullets [•]) and
- sample tasks that suggest **evidence** of appropriate progress toward the standard at a given level (preceded by triangles [▲]).

For each standard, the key ideas, performance indicators, and examples of evidence are listed first for the receptive language skills of listening and reading, then for the expressive language skills of speaking and writing. Within each of these categories, listening or speaking is listed first to acknowledge the usual order of development in the learner.

At different levels of the same standard, performance indicators incorporate five dimensions of growth that increase in complexity at successive levels. Those dimensions are *range*, *flexibility*, *connections*, *conventions*, and *independence*. The *At a Glance* charts on pages 5, 9, and 17 provide an overview of the kinds of language activities that best support the standards, the criteria that characterize the language function represented by the standard, and specific application of the dimensions of growth to that standard.

New in this edition are samples of student work, along with teachers' comments on the work. The examples are intended to provide some ideas of tasks that support attainment of the performance standards. They are not models of excellence. Rather, they represent various levels of acceptable work. It is important to remember that these are just suggestions of ways that students can demonstrate progress toward achieving the standards.

The State Education Department will continue to collect and publish samples of student work. As teachers become more familiar with the standards and students become more proficient in meeting them, the level of the performance standards and content standards will continue to rise.

Taken together, the content standards and the performance standards define the learning standards for students in English language arts.

The Board of Regents recognizes the diversity of students in New York State, including students with disabilities, students with limited English proficiency, gifted students, and educationally disadvantaged students, and has made a strong commitment to integrating the education of all students into the total school program. The standards in the framework apply to all students, regardless of their experiential background, capabilities, developmental and learning differences, interests, or ambitions. A classroom typically includes students with a wide range of abilities who may pursue multiple pathways to learn effectively, participate meaningfully, and work towards attaining the curricular standards. Students with diverse learning needs may need accommodations or adaptations of instructional strategies and materials to enhance their learning and/or adjust for their learning capabilities.

Learning Standards for English Language Arts at Three Levels

Standard 1: Students will read, write, listen, and speak for information and understanding.

As listeners and readers, students will collect data, facts, and ideas; discover relationships, concepts, and generalizations; and use knowledge generated from oral, written, and electronically produced texts. As speakers and writers, they will use oral and written language to acquire, interpret, apply, and transmit information.

Standard 2: Students will read, write, listen, and speak for literary response and expression.

Students will read and listen to oral, written, and electronically produced texts and performances, relate texts and performances to their own lives, and develop an understanding of the diverse social, historical, and cultural dimensions the texts and performances represent. As speakers and writers, students will use oral and written language for self-expression and artistic creation.

Standard 3: Students will read, write, listen, and speak for critical analysis and evaluation.

As listeners and readers, students will analyze experiences, ideas, information, and issues presented by others using a variety of established criteria. As speakers and writers, they will present, in oral and written language and from a variety of perspectives, their opinions and judgments on experiences, ideas, information and issues.

Standard 4: Students will read, write, listen, and speak for social interaction.

Students will use oral and written language for effective social communication with a wide variety of people. As readers and listeners, they will use the social communications of others to enrich their understanding of people and their views.

Standard 1—Language for Information and Understanding

Elementary

Listening and Reading

1. Listening and reading to acquire information and understanding involves collecting data, facts, and ideas; discovering relationships, concepts, and generalizations; and using knowledge from oral, written, and electronic sources.

Students:

- gather and interpret information from children's reference books, magazines, textbooks, electronic bulletin boards, audio and media presentations, oral interviews, and from such forms as charts, graphs, maps, and diagrams
- select information appropriate to the purpose of their investigation and relate ideas from one text to another
- select and use strategies they have been taught for note-taking, organizing, and categorizing information
- ask specific questions to clarify and extend meaning
- make appropriate and effective use of strategies to construct meaning from print, such as prior knowledge about a subject, structural and context clues, and an understanding of letter-sound relationships to decode difficult words
- support inferences about information and ideas with reference to text features, such as vocabulary and organizational patterns.

This is evident, for example, when students:

- ▲ accurately paraphrase what they have heard or read
- ▲ follow directions that involve a few steps
- ▲ ask for clarification of a classmate's idea in a group discussion
- ▲ use concept maps, semantic webs, or outlines to organize information they have collected.

Speaking and Writing

2. Speaking and writing to acquire and transmit information requires asking probing and clarifying questions, interpreting information in one's own words, applying information from one context to another, and presenting the information and interpretation clearly, concisely, and comprehensibly.

Students:

- present information clearly in a variety of oral and written forms such as summaries, paraphrases, brief reports, stories, posters, and charts
- select a focus, organization, and point of view for oral and written presentations
- use a few traditional structures for conveying information such as chronological order, cause and effect, and similarity and difference
- use details, examples, anecdotes, or personal experiences to explain or clarify information
- include relevant information and exclude extraneous material
- use the process of pre-writing, drafting, revising, and proofreading (the "writing process") to produce well-constructed informational texts
- observe basic writing conventions, such as correct spelling, punctuation, and capitalization, as well as sentence and paragraph structures appropriate to written forms.

This is evident, for example, when students:

- ▲ write a short report on a topic in social studies using information from at least two different sources
- ▲ demonstrate the procedures for caring for a classroom pet using props or other visual aids as well as oral explanation
- ▲ revise early drafts of a report to make the information clearer to the audience
- ▲ use the vocabulary from their content area reading appropriately and with correct spelling
- ▲ produce brief summaries of chapters from text books, clearly indicating the most significant information and the reason for its importance.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

STANDARD 1

Students will read, write, listen, and speak for information and understanding.

Intermediate

Listening and Reading

1. Listening and reading to acquire information and understanding involves collecting data, facts, and ideas; discovering relationships, concepts, and generalizations; and using knowledge from oral, written, and electronic sources.

Students:

- interpret and analyze information from textbooks and nonfiction books for young adults, as well as reference materials, audio and media presentations, oral interviews, graphs, charts, diagrams, and electronic data bases intended for a general audience
- compare and synthesize information from different sources
- use a wide variety of strategies for selecting, organizing, and categorizing information
- distinguish between relevant and irrelevant information and between fact and opinion
- relate new information to prior knowledge and experience
- understand and use the text features that make information accessible and usable, such as format, sequence, level of diction, and relevance of details.

This is evident, for example, when students:

- ▲ produce a summary of the information about a famous person found in a biography, encyclopedia, and textbook
- ▲ use facts and data from news articles and television reports in an oral report on a current event
- ▲ compile a bibliography of sources that are used in a research project
- ▲ take notes that record the main ideas and most significant supporting details of a lecture or speech.

Speaking and Writing

2. Speaking and writing to acquire and transmit information requires asking probing and clarifying questions, interpreting information in one's own words, applying information from one context to another, and presenting the information and interpretation clearly, concisely, and comprehensibly.

Students:

- produce oral and written reports on topics related to all school subjects
- establish an authoritative stance on the subject and provide references to establish the validity and verifiability of the information presented
- organize information according to an identifiable structure, such as compare/contrast or general to specific
- develop information with appropriate supporting material, such as facts, details, illustrative examples or anecdotes, and exclude extraneous material
- use the process of pre-writing, drafting, revising, and proofreading (the "writing process") to produce well-constructed informational texts
- use standard English for formal presentation of information, selecting appropriate grammatical constructions and vocabulary, using a variety of sentence structures, and observing the rules of punctuation, capitalization, and spelling.

This is evident, for example, when students:

- ▲ write an essay for science class that contains information from interviews, data bases, magazines, and science texts
- ▲ participate in a panel discussion on population trends in the United States in recent years, using graphics, and citing the source of the data
- ▲ use technical terms correctly in subject area reports
- ▲ survey student views on a school issue and report findings to the class.

Standard 1—Language for Information and Understanding

Commencement

Listening and Reading

1. Listening and reading to acquire information and understanding involves collecting data, facts, and ideas; discovering relationships, concepts, and generalizations; and using knowledge from oral, written, and electronic sources.

Students:

- interpret and analyze complex informational texts and presentations, including technical manuals, professional journals, newspaper and broadcast editorials, electronic networks, political speeches and debates, and primary source material in their subject area courses
- synthesize information from diverse sources and identify complexities and discrepancies in the information
- use a combination of techniques (e.g., previewing, use of advance organizers, structural cues) to extract salient information from texts
- make distinctions about the relative value and significance of specific data, facts, and ideas
- make perceptive and well developed connections to prior knowledge
- evaluate writing strategies and presentational features that affect interpretation of the information.

This is evident, for example, when students:

- ▲ incorporate information from several noted experts to support a thesis in a research paper
- ▲ assemble notes for historical and artistic exhibits
- ▲ use an electronic data base and other graphic presentations to find evidence of trends for a sociological study
- ▲ produce flow charts and diagrams to show the relationships among information from different sources
- ▲ determine the relative value of different reference materials for a particular research question.

Speaking and Writing

2. Speaking and writing to acquire and transmit information requires asking probing and clarifying questions, interpreting information in one's own words, applying information from one context to another, and presenting the information and interpretation clearly, concisely, and comprehensibly.

Students:

- write and present research reports, feature articles, and thesis/support papers on a variety of topics related to all school subjects
- present a controlling idea that conveys an individual perspective and insight into the topic
- use a wide range of organizational patterns such as chronological, logical (both deductive and inductive), cause and effect, and comparison/contrast
- support interpretations and decisions about relative significance of information with explicit statement, evidence, and appropriate argument
- revise and improve early drafts by restructuring, correcting errors, and revising for clarity and effect
- use standard English skillfully, applying established rules and conventions for presenting information and making use of a wide range of grammatical constructions and vocabulary to achieve an individual style that communicates effectively.

This is evident, for example, when students:

- ▲ demonstrate how to perform an intricate task, such as how to operate a computer program or conduct a laboratory experiment
- ▲ write an extended research report on a complex issue or topic that documents sources of information and is well organized to convey overarching ideas and supporting evidence and details
- ▲ write a report of a scientific inquiry that observes the conventions of scientific writing, the rules of evidence, and the correct usage of technical terms
- ▲ produce program notes for an art exhibit or concert with background information on the works and artists.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

STANDARD 1

Language for information and understanding

AT A GLANCE

INFORMATIONAL LANGUAGE ACTIVITIES	CRITERIA FOR INFORMATIONAL LANGUAGE	EVIDENCE OF GROWTH
<p><i>(Examples only, not an exhaustive list)</i></p> <p>READING of: essays textbooks newspapers and magazines encyclopedias history books nonfiction books scientific journals technical manuals electronic data bases</p> <p>WRITING of: essays lists and outlines summaries research reports feature articles technical reports instructional manuals</p> <p>LISTENING to: classroom instructions group discussions lectures documentary films news broadcasts panel discussions</p> <p>SPEAKING for: group discussion panel presentation giving directions for projects presenting research findings</p>	<p><i>Focus on the message being communicated and the purpose of the information</i></p> <p>PUBLIC - The information must be clear and understandable to a public audience.</p> <p>EFFICIENT - The information should be presented concisely.</p> <p>VALID - The facts and data must be accurate, precise, and relevant to the purpose.</p> <p>VERIFIABLE - Information must be well-founded and able to be traced to a reliable source.</p> <p>AUTHORITATIVE - Information is presented in conjunction with the individual's position on its significance.</p>	<p>RANGE (breadth and depth of texts, topics, issues, treatments)</p> <ul style="list-style-type: none"> • of primary source material • of discourse conventions • of strategies for recording, organizing, and transmitting information <p>FLEXIBILITY (performance in changing and varied conditions)</p> <ul style="list-style-type: none"> • in adapting mode of delivery to purpose and audience • in control of presentational strategies • in switching from one disciplinary context to another <p>CONNECTIONS (ability to see commonalities between ideas, texts, contexts)</p> <ul style="list-style-type: none"> • in relating new information to the familiar • in generalizing and particularizing • in using and interpreting metaphor or analogy <p>CONVENTIONS (rules, protocols, traditional practices)</p> <ul style="list-style-type: none"> • associated with the forms and formats of informational texts • associated with patterns and structures • associated with grammar, usage, punctuation, spelling <p>INDEPENDENCE (ability to perform without models or direction)</p> <ul style="list-style-type: none"> • in establishing purposes • in locating resources • in deciding significance • in selecting from available options • in achieving an individual style

STANDARD 1

Standard 2—Language for Literary Response and Expression

Elementary

Listening and Reading

1. Listening and reading for literary response involves comprehending, interpreting, and critiquing imaginative texts in every medium, drawing on personal experiences and knowledge to understand the text, and recognizing the social, historical and cultural features of the text.

Students:

- read a variety of literature of different genres: picture books; poems; articles and stories from children's magazines; fables, myths and legends; songs, plays and media productions; and works of fiction and nonfiction intended for young readers
- recognize some features that distinguish the genres and use those features to aid comprehension
- understand the literary elements of setting, character, plot, theme, and point of view and compare those features to other works and to their own lives
- use inference and deduction to understand the text
- read aloud accurately and fluently, using phonics and context cues to determine pronunciation and meaning
- evaluate literary merit.

This is evident, for example, when students:

- ▲ read a picture book to the class and point out how the pictures add meaning to the story
- ▲ recite a favorite poem from a class anthology and tell why they chose that poem
- ▲ keep a reading inventory to show all the types of literature they are reading
- ▲ retell a familiar fairy tale or fable to the class
- ▲ choose books to read individually or with others.

Speaking and Writing

2. Speaking and writing for literary response involves presenting interpretations, analyses, and reactions to the content and language of a text. Speaking and writing for literary expression involves producing imaginative texts that use language and text structures that are inventive and often multilayered.

Students:

- present personal responses to literature that make reference to the plot, characters, ideas, vocabulary, and text structure
- explain the meaning of literary works with some attention to meanings beyond the literal level
- create their own stories, poems, and songs using the elements of the literature they have read and appropriate vocabulary
- observe the conventions of grammar and usage, spelling, and punctuation.

This is evident, for example, when students:

- ▲ perform dramatic readings or recitations of stories, poems, or plays
- ▲ write a review of a book to recommend it to their classmates
- ▲ create their own picture books or fables to keep in the classroom library
- ▲ write new endings or sequels to familiar stories
- ▲ pretend to be a character in a historical story and write letters to their classmates about the character's life.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

STANDARD 2

Students will read, write, listen, and speak for literary response and expression.

Intermediate

Listening and Reading

1. Listening and reading for literary response involves comprehending, interpreting, and critiquing imaginative texts in every medium, drawing on personal experiences and knowledge to understand the text, and recognizing the social, historical and cultural features of the text.

Students:

- read and view texts and performances from a wide range of authors, subjects, and genres
- understand and identify the distinguishing features of the major genres and use them to aid their interpretation and discussion of literature
- identify significant literary elements (including metaphor, symbolism, foreshadowing, dialect, rhyme, meter, irony, climax) and use those elements to interpret the work
- recognize different levels of meaning
- read aloud with expression, conveying the meaning and mood of a work
- evaluate literary merit based on an understanding of the genre and the literary elements.

This is evident, for example, when students:

- ▲ read or recite poems of their own selection to the class, clearly conveying the meaning of the poem and the effect of the rhythm and rhyme patterns
- ▲ produce lists of recommended readings for their peers, grouping the works according to some common elements (e.g., theme, setting, type of characters)
- ▲ use references to literature they have read to support their position in class discussion.

Speaking and Writing

2. Speaking and writing for literary response involves presenting interpretations, analyses, and reactions to the content and language of a text. Speaking and writing for literary expression involves producing imaginative texts that use language and text structures that are inventive and often multilayered.

Students:

- present responses to and interpretations of literature, making reference to the literary elements found in the text and connections with their personal knowledge and experience
- produce interpretations of literary works that identify different levels of meaning and comment on their significance and effect
- write stories, poems, literary essays, and plays that observe the conventions of the genre and contain interesting and effective language and voice
- use standard English effectively.

This is evident, for example, when students:

- ▲ take part in class productions of short plays
- ▲ write a sequel to a story continuing the development of the characters, plot, and themes
- ▲ write reviews of literature from different cultural settings and point out similarities and differences in that literature
- ▲ write stories or poems for their peers or younger children.

Standard 2—Language for Literary Response and Expression

Commencement

Listening and Reading

1. Listening and reading for literary response involves comprehending, interpreting, and critiquing imaginative texts in every medium, drawing on personal experiences and knowledge to understand the text, and recognizing the social, historical and cultural features of the text.

Students:

- read and view independently and fluently across many genres of literature from many cultures and historical periods
- identify the distinguishing features of different literary genres, periods and traditions and use those features to interpret the work
- recognize and understand the significance of a wide range of literary elements and techniques, (including figurative language, imagery, allegory, irony, blank verse, symbolism, stream-of-consciousness) and use those elements to interpret the work
- understand how multiple levels of meaning are conveyed in a text
- read aloud expressively to convey a clear interpretation of the work
- evaluate literary merit based on an understanding of the genre, the literary elements, and the literary period and tradition.

This is evident, for example, when students:

- ▲ read a selection of poems of different forms, including sonnets, lyrics, elegies, narrative poems, and odes, and recognize the effect of the structure and form on the meaning
- ▲ act out scenes from a full length play in class
- ▲ read literary pieces on a common theme from several literary periods (such as Renaissance, Neo-Classical, Romantic, Realistic, Naturalistic, and Contemporary) and compare the treatments of the theme in those periods
- ▲ read and interpret works of recognized literary merit from several world cultures and recognize the distinguishing features of those cultural traditions
- ▲ view stage or film productions of a major play or novel and discuss the interpretation of the work that is evident in the production.

Speaking and Writing

2. Speaking and writing for literary response involves presenting interpretations, analyses, and reactions to the content and language of a text. Speaking and writing for literary expression involves producing imaginative texts that use language and text structures that are inventive and often multilayered.

Students:

- present responses to and interpretations of works of recognized literary merit with references to the principal features of the genre, the period, and literary tradition, and drawing on their personal experiences and knowledge
- produce literary interpretations that explicate the multiple layers of meaning
- write original pieces in a variety of literary forms, correctly using the conventions of the genre and using structure and vocabulary to achieve an effect
- use standard English skillfully and with an individual style.

This is evident, for example, when students:

- ▲ write stories or poems using such literary structures and devices as stanzas and chapters, metaphors, foreshadowing, symbolism, and different forms of dialogue and narration
- ▲ take part in productions of full length plays
- ▲ put together a collection of literature from different cultures around a common theme and write the introduction to the collection explaining the similarities and differences
- ▲ write an interpretation of a major nineteenth-century novel discussing the features of the novel that reflect the conventions of the genre in that time period.
- ▲ write interpretations of works of recognized literary merit including a discussion of the principal features of the genre, the period, and the tradition.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

STANDARD 2

Language for Literary Response and Expression

AT A GLANCE

LITERARY LANGUAGE ACTIVITIES	CRITERIA FOR LITERARY LANGUAGE	EVIDENCE OF GROWTH
<p><i>(Examples only, not an exhaustive list)</i></p> <p>READING of: picture books stories myths, fables, legends poems plays novels literary essays literary criticism</p> <p>WRITING of: personal responses interpretations literary analyses critiques explications of texts original stories, sketches, poems, plays, literary essays</p> <p>LISTENING to: oral readings of literature stage plays films</p> <p>SPEAKING for: oral readings recitations of literary passages dramatic presentations group discussions of literature</p>	<p><i>Focus on the "poem," i.e., the literary work and its unique language.</i></p> <p>PERSONAL - Literary response and expression present the insights and ingenuity of the student and should be connected to the individual's prior knowledge and experience.</p> <p>The style and diction of student literary writing should be distinctive and personal. In the best literary expression, the style is as unique and identifiable as a fingerprint.</p> <p>TEXTUAL - Literary language depends on the exact words, lines, images, and structures of the text.</p> <p>Conventions must be appropriate to the genre and the literary tradition to which the work belongs.</p> <p>Meaning is found in the language of the poem, not in paraphrase or summary.</p> <p>MULTILAYERED - Meanings are both explicit and literal, and implied and symbolic.</p> <p>Language is clear, but often intentionally ambiguous.</p>	<p>RANGE (breadth and depth of texts, topics, issues, treatments)</p> <ul style="list-style-type: none"> • of literary genres, authors, periods, traditions, and cultures • of literary elements • of critical approaches to literature <p>FLEXIBILITY (performance in changing and varied conditions)</p> <ul style="list-style-type: none"> • in adapting to the genres • in control of presentational strategies • in accommodating diverse cultural traditions <p>CONNECTIONS (ability to see commonalities between ideas, texts, contexts)</p> <ul style="list-style-type: none"> • in relating new texts to others • in using prior knowledge to interpret literature • in using metaphor <p>CONVENTIONS (rules, protocols, traditional practices)</p> <ul style="list-style-type: none"> • of the genre, period, and tradition • of standard English <p>INDEPENDENCE (ability to perform without direction)</p> <ul style="list-style-type: none"> • in selecting literature • in adopting an interpretive approach • in producing imaginative texts • in achieving an individual style

STANDARD 2

Standard 3—Language for Critical Analysis and Evaluation

Elementary

Listening and Reading

1. Listening and reading to analyze and evaluate experiences, ideas, information, and issues requires using evaluative criteria from a variety of perspectives and recognizing the difference in evaluations based on different sets of criteria.

Students:

- read and form opinions about a variety of literary and informational texts and presentations, as well as persuasive texts such as advertisements, commercials, and letters to the editor
- make decisions about the quality and dependability of texts and experiences based on some criteria, such as the attractiveness of the illustrations and appeal of the characters in a picture book, or the logic and believability of the claims made in an advertisement
- recognize that the criteria that one uses to analyze and evaluate anything depend on one's point of view and purpose for the analysis
- evaluate their own strategies for reading and listening critically (such as recognizing bias or false claims, and understanding the difference between fact and opinion) and adjust those strategies to understand the experience more fully.

This is evident, for example, when students:

- listen to a book talk in class and express an opinion of the book with specific reference to the text and to some criteria for a good book
- read several versions of a familiar fairy tale and recognize the differences in the versions
- point out examples of false advertising in television ads for toys
- identify the facts and opinions in a feature article in a children's magazine.

Speaking and Writing

2. Speaking and writing for critical analysis and evaluation requires presenting opinions and judgments on experiences, ideas, information, and issues clearly, logically, and persuasively with reference to specific criteria on which the opinion or judgment is based.

Students:

- express opinions (in such forms as oral and written reviews, letters to the editor, essays, or persuasive speeches) about events, books, issues, and experiences, supporting their opinions with some evidence
- present arguments for certain views or actions with reference to specific criteria that support the argument (E.g., an argument to purchase a particular piece of playground equipment might be based on the criteria of safety, appeal to children, durability, and low cost.)
- monitor and adjust their own oral and written presentations to meet criteria for competent performance (E.g., in writing, the criteria might include development of position, organization, appropriate vocabulary, mechanics, and neatness. In speaking, the criteria might include good content, effective delivery, diction, posture, poise, and eye contact.)
- use effective vocabulary and follow the rules of grammar, usage, spelling, and punctuation in persuasive writing.

This is evident, for example, when students:

- ▲ write a letter to the principal recommending that the school cafeteria serve pizza for lunch based on the criteria that it is nutritious and appealing to students
- ▲ give an oral report comparing several versions of the Cinderella story, pointing out similarities and differences in the versions
- ▲ in group discussion, select the most important word of a poem or story and explain its significance
- ▲ write an analysis of the effect of a major snow storm from the perspectives of a school student, a working parent, and a mail carrier
- ▲ in writing group, critique each other's writing with reference to specific criteria and revise their writing based on the group's suggestions.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

STANDARD 3

Students will read, write, listen, and speak for critical analysis and evaluation.

Intermediate

Listening and Reading

1. Listening and reading to analyze and evaluate experiences, ideas, information, and issues requires using evaluative criteria from a variety of perspectives and recognizing the difference in evaluations based on different sets of criteria.

Students:

- analyze, interpret, and evaluate information, ideas, organization, and language from academic and nonacademic texts, such as textbooks, public documents, book and movie reviews, and editorials
- assess the quality of texts and presentations, using criteria related to the genre, the subject area, and purpose (e.g., using the criteria of accuracy, objectivity, comprehensiveness, and understanding of the game to evaluate a sports editorial)
- understand that within any group there are many different points of view depending on the particular interests and values of the individual, and recognize those differences in perspective in texts and presentations (E.g., in considering whether to let a new industry come into a community, some community members might be enthusiastic about the additional jobs that will be created while others are concerned about the air and noise pollution that could result.)
- evaluate their own and others' work based on a variety of criteria (e.g., logic, clarity, comprehensiveness, conciseness, originality, conventionality) and recognize the varying effectiveness of different approaches.

This is evident, for example, when students:

- ▲ compare a magazine article on a historical event with the entries in an encyclopedia and history book to determine the accuracy and comprehensiveness of the article
- ▲ use the criteria of scientific investigation to evaluate the significance of a lab experiment
- ▲ read two conflicting reviews of a popular movie and recognize the different criteria the critics were using to evaluate the film
- ▲ point out examples of propaganda techniques (such as "bandwagon," "plain folks" language, and "sweeping generalities") in public documents and speeches.

Speaking and Writing

2. Speaking and writing for critical analysis and evaluation requires presenting opinions and judgments on experiences, ideas, information, and issues clearly, logically, and persuasively with reference to specific criteria on which the opinion or judgment is based.

Students:

- present (in essays, position papers, speeches, and debates) clear analyses of issues, ideas, texts, and experiences, supporting their positions with well-developed arguments
- develop arguments with effective use of details and evidence that reflect a coherent set of criteria (e.g., reporting results of lab experiments to support a hypothesis)
- monitor and adjust their own oral and written presentations according to the standards for a particular genre (e.g., defining key terms used in a formal debate)
- use standard English, precise vocabulary, and presentational strategies effectively to influence an audience.

This is evident, for example, when students:

- ▲ write a position paper on a current event, clearly indicating their position and the criteria on which it is based
- ▲ present an oral review of a film, supporting their evaluation with reference to particular elements such as character development, plot, pacing, and cinematography
- ▲ participate in a class debate on a social issue following the rules for formal debate
- ▲ produce their own advertising for a product, tailoring the text and visuals to a particular audience.

Standard 3—Language for Critical Analysis and Evaluation

Commencement

Listening and Reading

1. Listening and reading to analyze and evaluate experiences, ideas, information, and issues requires using evaluative criteria from a variety of perspectives and recognizing the difference in evaluations based on different sets of criteria.

Students:

- analyze, interpret, and evaluate ideas, information, organization, and language of a wide range of general and technical texts and presentations across subject areas, including technical manuals, professional journals, political speeches, and literary criticism
- evaluate the quality of the texts and presentations from a variety of critical perspectives within the field of study (e.g., using both Poe's elements of a short story and the elements of "naturalist fiction" to evaluate a modern story)
- make precise determinations about the perspective of a particular writer or speaker by recognizing the relative weight they place on particular arguments and criteria (E.g., one critic condemns a biography as too long and rambling; another praises it for its accuracy and never mentions its length)
- evaluate and compare their own and others' work with regard to different criteria and recognize the change in evaluations when different criteria are considered to be more important.

This is evident, for example, when students:

- ▲ compare the majority decision and the dissenting opinions on a Supreme Court case
- ▲ listen to speeches of two political candidates and compare their stands on several major issues
- ▲ read the writing of several critics on the same author and determine what literary criteria each used in evaluating the author and how that accounts for different judgments
- ▲ read a current article on a scientific issue, such as the greenhouse effect, and compare it to an earlier explanation of the same issue.

Speaking and Writing

2. Speaking and writing for critical analysis and evaluation requires presenting opinions and judgments on experiences, ideas, information, and issues clearly, logically, and persuasively with reference to specific criteria on which the opinion or judgment is based.

Students:

- present orally and in writing well-developed analyses of issues, ideas, and texts, explaining the rationale for their positions and analyzing their positions from a variety of perspectives in such forms as formal speeches, debates, thesis/support papers, literary critiques, and issues analyses
- make effective use of details, evidence, and arguments and of presentational strategies to influence an audience to adopt their position
- monitor and adjust their own oral and written presentations to have the greatest influence on a particular audience
- use standard English, a broad and precise vocabulary, and the conventions of formal oratory and debate.

This is evident, for example, when students:

- ▲ write two different analyses of a Supreme Court decision from the perspectives of a "strict-constructionist" and a judicial activist
- ▲ write a review of a technical manual from the perspective of current industry standards
- ▲ deliver a "campaign" speech using a variety of persuasive strategies to influence an audience
- ▲ write an essay comparing critiques from two different centuries of a Shakespearean play.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

STANDARD 3

Language for Critical Analysis and Evaluation

AT A GLANCE

ANALYTICAL LANGUAGE ACTIVITIES	CRITERIA FOR ANALYTICAL LANGUAGE	EVIDENCE OF GROWTH
<p><i>(Examples only, not an exhaustive list)</i></p> <p>READING of: literature advertisements editorials book and movie reviews literary criticism public documents political speeches position papers professional journals listserves</p> <p>WRITING of: persuasive essays book and movie reviews literary critiques editorials thesis/support papers analyses of issues college application essays</p> <p>LISTENING to: advertising/commercials arguments political speeches debates</p> <p>SPEAKING for: oral book and movie reviews persuasive speeches opinion surveys formal debates interviews</p>	<p><i>Focus on the point of view and recognition of the values that underlie the point of view.</i></p> <p>CONTEXTUALIZED - An opinion or argument must be grounded in a particular set of values or criteria. Support for an argument depends on recognition of the soundness of the criteria.</p> <p>FLEXIBLE - A thorough analysis requires being able to view the same event or text from more than one point of view and recognizing the relative validity of divergent points of view.</p> <p>CULTURAL - The criteria for analysis and evaluation derive from the shared values of a group. Recognition of the group whose values are reflected in a position is necessary for a precise understanding of the position.</p>	<p>RANGE (breadth and depth of texts, topics, issues, treatments)</p> <ul style="list-style-type: none"> • of points of view • of issues • of criteria <p>FLEXIBILITY (performance in changing and varied conditions)</p> <ul style="list-style-type: none"> • in selecting and applying criteria for analysis • in adopting different points of view • in adapting argument for audience <p>CONNECTIONS (ability to see similarities in ideas, texts, and contexts)</p> <ul style="list-style-type: none"> • between points of view • between arguments <p>CONVENTIONS (rules, protocols, traditional practices)</p> <ul style="list-style-type: none"> • of genre • of oral and written analysis • of formal debate • of standard English <p>INDEPENDENCE (ability to perform without direction)</p> <ul style="list-style-type: none"> • in establishing a point of view • in applying criteria • in selecting language

STANDARD 3

Standard 4—Language for Social Interaction

Elementary

Listening and Speaking

1. Oral communication in formal and informal settings requires the ability to talk with people of different ages, genders, and cultures, to adapt presentations to different audiences, and to reflect on how talk varies in different situations.

Students:

- listen attentively and recognize when it is appropriate for them to speak
- take turns speaking and respond to others' ideas in conversations on familiar topics
- recognize the kind of interaction appropriate for different circumstances, such as story hour, group discussions, and one-on-one conversations.

This is evident, for example, when students:

- ▲ take part in "show and tell" sessions
- ▲ participate in group discussions during "circle time"
- ▲ greet visitors to their school or classroom and respond to their questions
- ▲ bring messages to the principal's office or to another teacher.

Reading and Writing

2. Written communication for social interaction requires using written messages to establish, maintain, and enhance personal relationships with others.

Students:

- exchange friendly notes, cards, and letters with friends, relatives, and pen pals to keep in touch and to commemorate special occasions
- adjust their vocabulary and style to take into account the nature of the relationship and the knowledge and interests of the person receiving the message
- read and discuss published letters, diaries, and journals to learn the conventions of social writing.

This is evident, for example, when students:

- ▲ write thank you notes and invitations to friends
- ▲ exchange letters with pen pals in another country
- ▲ write letters to relatives who live in another city.

n.b. Because the focus of language for social interaction is on direct communication between individuals (rather than communication to a more general and perhaps unknown audience), the performance indicators for this standard are arranged to reflect the immediacy of direct communication (Listening and Speaking; Reading and Writing).

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

STANDARD 4

Students will read, write, listen, and speak for social interaction.

Intermediate

Listening and Speaking

1. Oral communication in formal and informal settings requires the ability to talk with people of different ages, genders, and cultures, to adapt presentations to different audiences, and to reflect on how talk varies in different situations.

Students:

- **listen attentively to others and build on others' ideas in conversations with peers and adults**
- **express ideas and concerns clearly and respectfully in conversations and group discussions**
- **learn some words and expressions in another language to communicate with a peer or adult who speaks that language**
- **use verbal and nonverbal skills to improve communication with others.**

This is evident, for example, when students:

- ▲ act as hosts for open house at school
- ▲ participate in small group discussions in class
- ▲ give morning announcements over the public address system
- ▲ participate in school assemblies and club meetings.

Reading and Writing

2. Written communication for social interaction requires using written messages to establish, maintain, and enhance personal relationships with others.

Students:

- **write social letters, cards, and electronic messages to friends, relatives, community acquaintances, and other electronic network users**
- **use appropriate language and style for the situation and the audience and take into account the ideas and interests expressed by the person receiving the message**
- **read and discuss social communications and electronic communications of other writers and use some of the techniques of those writers in their own writing.**

This is evident, for example, when students:

- ▲ write letters to friends who are away
- ▲ send e-mail messages on a computer network
- ▲ send formal invitations for receptions or open houses.

Standard 4—Language for Social Interaction

Commencement

Listening and Speaking

1. Oral communication in formal and informal settings requires the ability to talk with people of different ages, genders, and cultures, to adapt presentations to different audiences, and to reflect on how talk varies in different situations.

Students:

- engage in conversations and discussions on academic, technical, and community subjects, anticipating listeners' needs and skillfully addressing them
- express their thoughts and views clearly with attention to the perspectives and voiced concerns of the others in the conversation
- use appropriately the language conventions for a wide variety of social situations, such as informal conversations, first meetings with peers or adults, and more formal situations such as job interviews or customer service.

This is evident, for example, when students:

- ▲ take part in and conduct meetings of student organizations
- ▲ interact with community members through community service experience or part-time jobs
- ▲ interview for a job or college acceptance
- ▲ greet visitors at school performances or sports banquets.

Reading and Writing

2. Written communication for social interaction requires using written messages to establish, maintain, and enhance personal relationships with others.

Students:

- use a variety of print and electronic forms for social communication with peers and adults
- make effective use of language and style to connect the message with the audience and context
- study the social conventions and language conventions of writers from other groups and cultures and use those conventions to communicate with members of those groups.

This is evident, for example, when students:

- ▲ participate in electronic discussion groups (e.g., listserv)
- ▲ write letters and personal essays as part of college application
- ▲ write personal notes and letters that entertain and interest the recipient.

Key ideas are identified by numbers (1).
Performance indicators are identified by bullets (•).
Sample tasks are identified by triangles (▲).

STANDARD 4

Language for Social Interaction

AT A GLANCE

SOCIAL LANGUAGE ACTIVITIES	CRITERIA FOR SOCIAL LANGUAGE	EVIDENCE OF GROWTH
<p><i>(Examples only, not an exhaustive list)</i></p> <p>SPEAKING/LISTENING for: greetings introductions conversations group discussions customer service</p> <p>WRITING of: notes e-mail messages memos friendly letters acknowledgments</p> <p>READING of: notes friendly letters e-mail journal entries</p>	<p><i>Focus on the relationship and the establishing of trust and harmony between people.</i></p> <p>INTERPERSONAL - Social communication aims at getting to know another person or being together with others.</p> <p>IMMEDIATE - Social language is primarily the language of face-to-face communication. Written or electronic messages sent for social purposes try to capture the tone of friendly conversation.</p> <p>APPROPRIATE - Social language requires selecting the language and behavior appropriate for the relationship, taking into account the age, gender, position, and cultural traditions of the other person or persons. Both verbal and non-verbal signals are important.</p>	<p>RANGE (breadth and depth of topics, issues, treatments)</p> <ul style="list-style-type: none"> • of individuals and groups • of topics of conversation • of verbal and non-verbal signals <p>FLEXIBILITY (performance in changing and varied conditions)</p> <ul style="list-style-type: none"> • in adapting to people of different ages, genders, cultural groups, and social positions • in assuming appropriate roles in conversation <p>CONNECTIONS (ability to see similarities)</p> <ul style="list-style-type: none"> • with interests, experiences, and feelings of the other person <p>CONVENTIONS (rules, protocols, traditional practices)</p> <ul style="list-style-type: none"> • of behavior • of tone and diction • of verbal and nonverbal language <p>INDEPENDENCE (ability to perform without direction)</p> <ul style="list-style-type: none"> • in initiating conversations • in adapting language to audience • in assuming appropriate role

STANDARD 4

U.S. Department of Labor
Secretary's Commission on Achieving Necessary Skills
SCANS
Washington, D.C. 20210

May 31, 1991

The Honorable Lynn Martin
Secretary of Labor
Washington, D.C.

Dear Madam Secretary:

The Secretary's Commission on Achieving Necessary Skills (SCANS) was asked to examine the demands of the workplace and whether our young people are capable of meeting those demands. Specifically, the Commission was directed to advise the Secretary on the level of skills required to enter employment.

It is my privilege to chair this effort. We began in May 1990 to engage businesses, schools, unions, and parents in a dialogue about the future they hold in common. On behalf of my colleagues on the Commission, I am pleased to transmit to you the results of our first year's work.

This document deals with two of our tasks — defining the skills needed and proposing acceptable levels of proficiency for them. A technical report expanding on the themes of this document will be provided later this year and a final report on our work will be available in February 1992.

Sincerely,

William E. Brock

Chairman

EXECUTIVE SUMMARY

The Secretary's Commission on Achieving Necessary Skills (SCANS) was asked to examine the demands of the workplace and whether our young people are capable of meeting those demands.

Specifically, the Commission was directed to advise the Secretary on the level of skills required to enter employment. In carrying out this charge, the Commission was asked to:

- Define the skills needed for employment;
- Propose acceptable levels of proficiency;
- Suggest effective ways to assess proficiency; and
- Develop a dissemination strategy for the nation's schools, businesses, and homes.

This report results from our discussions and meetings with business owners, public employers, unions, and workers and supervisors in shops, plants, and stores. It builds on the work of six special panels we established to examine all manner of jobs from manufacturing to government employment. We also commissioned researchers to conduct lengthy interviews with workers in a wide range of jobs.

The message to us was universal: good jobs will increasingly depend on people who can put knowledge to work. What we found was disturbing: more than half our young people leave school without the knowledge or foundation required to find and hold a good job. These people will pay a very high price. They face the bleak prospects of dead-end work interrupted only by periods of unemployment.

Two conditions that arose in the last quarter of the 20th Century have changed the terms of our young people's entry into the world of work: the globalization of commerce and industry and the explosive growth of

technology on the job. These developments have barely been reflected in how we prepare young people for work or in how many of our workplaces are organized. Schools need to do a better job and so do employers. Students and workers must work smarter. Unless they do, neither our schools, our students, nor our businesses can prosper.

SCANS research verifies that what we call *workplace know-how* defines effective job performance today. This know-how has two elements: *competencies* and a *foundation*. This report identifies five competencies and a three-part foundation of skills and personal qualities that lie at the heart of job-performance. (See pages x and xi.) These eight requirements are essential preparation for all students, both those going directly to work and those planning further education. Thus, the competencies and the foundation should be taught and understood in an integrated fashion that reflects the workplace *contexts* in which they are applied.

We believe, after examining the findings of cognitive science, that the most effective way of learning skills is "in context," placing learning objectives within a real environment rather than insisting that students first learn in the abstract what they will be expected to apply.

The five SCANS competencies span the chasm between school and the workplace. Because they are needed in workplaces dedicated to excellence, they are hallmarks of today's expert worker. And they lie behind the quality of every product and service offered on today's market.

The competencies differ from a person's technical knowledge. For example, both accountants and engineers manage resources, information, systems, and technology. They require competence in these areas even though building a bridge has little to do with balancing a set of books. But in each profession, the

competencies are at least as important as the technical expertise. The members of the Commission believe these competencies are applicable from the shop floor to the executive suite. In the broadest sense, the competencies represent the attributes that today's high-performance employer seeks in tomorrow's employee.

To describe how this know-how is used on the job, our report provides a series of five scenarios that portray work requirements in the context of the real world. The scenarios show that work involves a complex interplay among the five competencies we have identified and the three elements of the foundation — the **basic skills**, higher order **thinking skills**, and diligent application of **personal qualities**.

The scenarios make clear that tomorrow's career ladders require even the basic skills — the old 3 Rs — to take on a new meaning. First, all employees will have to **read** well enough to understand and interpret diagrams, directories, correspondence, manuals, records, charts, graphs, tables, and specifications. Without the ability to read a diverse set of materials, workers cannot locate the descriptive and quantitative information needed to make decisions or to recommend courses of action. What do these reading requirements mean on the job? They might involve:

- interpreting blueprints and materials catalogues;
- dealing with letters and written policy on complaints;
- reading patients' medical records and medication instructions; and
- reading the text of technical manuals from equipment vendors.

At the same time, most jobs will call for **writing skills** to prepare correspondence, instructions, charts, graphs, and proposals, in

order to make requests, explain, illustrate, and convince. On the job this might require:

- writing memoranda to justify resources or explain plans;
- preparing instructions for operating simple machines;
- developing a narrative to explain graphs or tables; and
- drafting suggested modifications in company procedures.

Mathematics and computational skills will also be essential. Virtually all employees will be required to maintain records, estimate results, use spreadsheets, or apply statistical process controls as they negotiate, identify trends, or suggest new courses of action. Most of us will not leave our mathematics behind us in school. Instead, we will find ourselves using it on the job, for example, to:

- reconcile differences between inventory and financial records;
- estimate discounts on the spot while negotiating sales;
- use spreadsheet programs to monitor expenditures;
- employ statistical process control procedures to check quality; and
- project resource needs over the next planning period.

Finally, very few of us will work totally by ourselves. More and more, work involves listening carefully to clients and co-workers and clearly articulating one's own point of view. Today's worker has to **listen** and **speak** well enough to explain schedules and procedures, communicate with customers, work in teams, understand customer concerns, describe complex systems and procedures, probe for hidden meanings, teach others, and solve problems.

FIVE COMPETENCIES

Resources: Identifies, organizes, plans, and allocates resources

- A. *Time* — Selects goal-relevant activities, ranks them, allocates time, and prepares and follows schedules
- B. *Money* — Uses or prepares budgets, makes forecasts, keeps records, and makes adjustments to meet objectives
- C. *Material and Facilities* — Acquires, stores, allocates, and uses materials or space efficiently
- D. *Human Resources* — Assesses skills and distributes work accordingly, evaluates performance and provides feedback

Interpersonal: Works with others

- A. *Participates as a Member of a Team* — contributes to group effort
- B. *Teaches Others New Skills*
- C. *Serves Clients/Customers* — works to satisfy customers' expectations
- D. *Exercises Leadership* — communicates ideas to justify position, persuades and convinces others, responsibly challenges existing procedures and policies
- E. *Negotiates* — works toward agreements involving exchange of resources, resolves divergent interests
- F. *Works with Diversity* — works well with men and women from diverse backgrounds

Information: Acquires and uses information

- A. *Acquires and Evaluates Information*
- B. *Organizes and Maintains Information*
- C. *Interprets and Communicates Information*
- D. *Uses Computers to Process Information*

Systems: Understands complex inter-relationships

- A. *Understands Systems* — knows how social, organizational, and technological systems work and operates effectively with them
- B. *Monitors and Corrects Performance* — distinguishes trends, predicts impacts on system operations, diagnoses deviations in systems' performance and corrects malfunctions
- C. *Improves or Designs Systems* — suggests modifications to existing systems and develops new or alternative systems to improve performance

Technology: Works with a variety of technologies

- A. *Selects Technology* — chooses procedures, tools or equipment including computers and related technologies
- B. *Applies Technology to Task* — Understands overall intent and proper procedures for setup and operation of equipment
- C. *Maintains and Troubleshoots Equipment* — Prevents, identifies, or solves problems with equipment, including computers and other technologies.

A THREE-PART FOUNDATION

Basic Skills: Reads, writes, performs arithmetic and mathematical operations, listens and speaks

- A. *Reading* — locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules
- B. *Writing* — communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts
- C. *Arithmetic/Mathematics* — performs basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques
- D. *Listening* — receives, attends to, interprets, and responds to verbal messages and other cues
- E. *Speaking* — organizes ideas and communicates orally

Thinking Skills: Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn, and reasons

- A. *Creative Thinking* — generates new ideas
- B. *Decision Making* — specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative
- C. *Problem Solving* — recognizes problems and devises and implements plan of action
- D. *Seeing Things in the Mind's Eye* — organizes, and processes symbols, pictures, graphs, objects, and other information
- E. *Knowing How to Learn* — uses efficient learning techniques to acquire and apply new knowledge and skills
- F. *Reasoning* — discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem

Personal Qualities: Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty

- A. *Responsibility* — exerts a high level of effort and perseveres towards goal attainment
- B. *Self-Esteem* — believes in own self-worth and maintains a positive view of self
- C. *Sociability* — demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings
- D. *Self-Management* — assesses self accurately, sets personal goals, monitors progress, and exhibits self-control
- E. *Integrity/Honesty* — chooses ethical courses of action

On the job, these skills may translate readily into:

- training new workers or explaining new schedules to a work team;
- describing plans to supervisors or clients;
- questioning customers to diagnose malfunctions; and

- answering questions from customers about post-sales service.

SCANS estimates that less than half of all young adults have achieved these reading and writing minimums; even fewer can handle the mathematics; and, schools today only indirectly address listening and speaking skills.

Defining the minimum levels of proficiency in the SCANS competencies is also a crucial part of the Commission's task. It requires judgments about the learning possible in yet-to-be designed schools. It also requires imagining what the workplaces of the year 2000 could and should look like.

Our work on these required levels of proficiency is not complete. We have examined less than a third of the jobs we intend to research. We also wish to hear what others think of our initial efforts. The insert at the top of page xx is illustrative of our initial estimates of work-ready levels of proficiency in the five competencies. Proficiency in each competency requires proficiency in the foundation. The contexts displayed come from more extensive scenarios contained in our report. The point we wish to make is that young people leaving school should have both a sufficient foundation and level of understanding of the competencies to exhibit performances like those illustrated.

The minimums we propose will define what makes a young person ready for work at entry levels on career ladders. They represent neither the first nor last step in a process of life-long learning. Instead, the minimums will be a second step in a progression of skills acquisition. For example, consider scheduling time, part of the SCANS **resources** competency. A young student (at the preparatory stage) might be expected to make a schedule for him or herself. Being *work-ready* would require making a schedule for others. At the extreme, a specialist might develop schedules for an airline. (See insert at bottom of page xiii.)

In September 1989 President Bush and the nation's governors agreed to six national goals in education to be achieved by the year 2000. By April 1991 a four-part strategy to attain these six goals was announced by President Bush and Secretary of Education Lamar Alexander. This report of the Secretary

of Labor's Commission on Achieving Necessary Skills speaks directly to those goals and to that strategy. It defines what our young people must know and be able to do in order to hold a decent job and earn a decent living.

Our work pertains directly to National Goals #3 and #5 which state:

Goal #3 American students will leave grades four, eight, and twelve having demonstrated competency in challenging subject matter including English, mathematics, science, history, and geography; and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning, and *productive employment in our modern economy*. (emphasis added)

Goal #5 Every adult American will be literate and will *possess the knowledge and skills necessary to compete in a global economy* and exercise the rights and responsibilities of citizenship. (emphasis added)

Our report is intended to contribute to all four parts of the strategy put forth by President Bush in AMERICA 2000 as shown below.

Workforce know-how will be part of the new World Class Standards. However, defining competencies and a foundation is not enough. Schools must teach them. Students must learn them. And, they should be assessed as part of the America 2000 agenda. Our work on these issues will continue over the coming months. Among the concrete steps SCANS will take in the future are efforts to:

**KNOW-HOW:
WORK-READY LEVEL OF PROFICIENCY**

COMPETENCE	EXAMPLE OF LEVEL
RESOURCES	Develop cost estimates and write proposals to justify the expense of replacing kitchen equipment. Develop schedule for equipment delivery to avoid closing restaurant. Read construction blueprints and manufacturers' installation requirements to place and install equipment in the kitchen.*
INTERPERSONAL	Participate in team training and problem-solving session with multi-cultural staff of waiters and waitresses. Focus on upcoming Saturday night when local club has reserved restaurant after midnight for party. Three people cannot work and team has to address the staffing problem and prepare for handling possible complaints about prices, food quality, or service.*
INFORMATION	Analyze statistical control charts to monitor error rate. Develop, with other team members, a way to bring performance in production line up to that of best practice in competing plants.**
SYSTEMS	As part of information analysis above, analyze painting system and suggest how improvements can be made to minimize system downtime and improve paint finish.**
TECHNOLOGY	Evaluate three new paint spray guns from the point of view of costs, health and safety, and speed. Vendors describe performance with charts and written specifications. Call vendors' representatives to clarify claims and seek the names of others using their equipment. Call and interview references before preparing a report on the spray guns and making a presentation to management.**

PROGRESS IN ACQUIRING SKILLS

PROFICIENCY LEVEL	PERFORMANCE BENCHMARK
PREPARATORY	Scheduling oneself
WORK-READY	Scheduling small work team
INTERMEDIATE	Scheduling a production line or substantial construction project
ADVANCED	Developing roll-out schedule for new product or production plant
SPECIALIST	Develop algorithm for scheduling airline

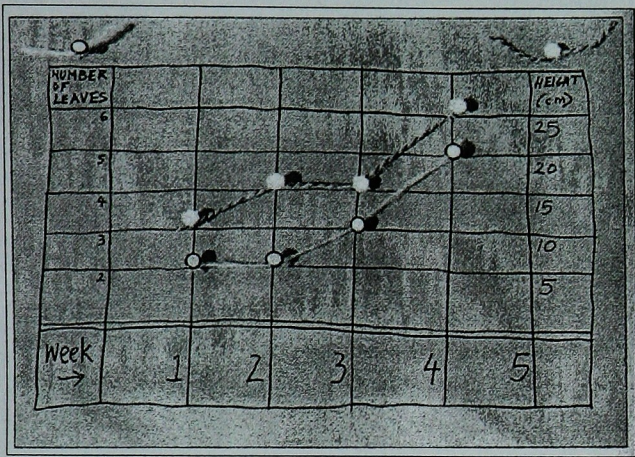
*Competence as demonstrated in a service sector application.

**Competence as demonstrated in a manufacturing sector application.

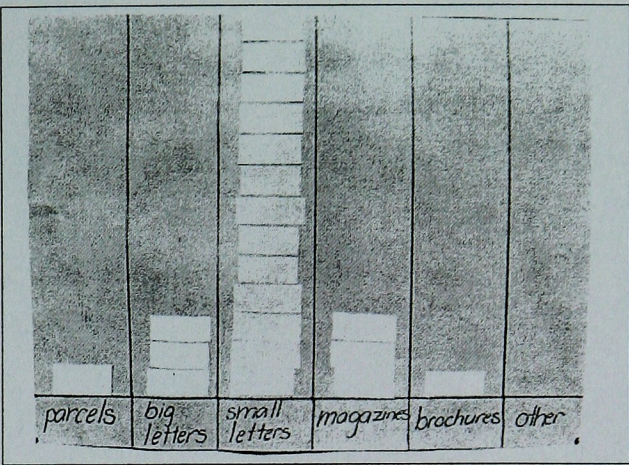
- examine how to create an assessment system that helps students understand what they have to learn and certifies that they have mastered the competencies so that employers and colleges will honor their record of high school performance;
- consider the implications of the SCANS findings for curriculum development, school organization, teacher training, and instructional materials and technology; and

Appendix C

Graphic Design Methods Examples
That Do Not Appear In The Guidebook



Matrix
I See What you Mean,
Children at Work with Visual Information.
Steve Moline
Stenhouse Publishing
1995



Matrix
I See What you Mean,
Children at Work with Visual Information.
Steve Moline
Stenhouse Publishing
1995

Graphic Design Methods Examples
That Does Not Appear In The Guidebook

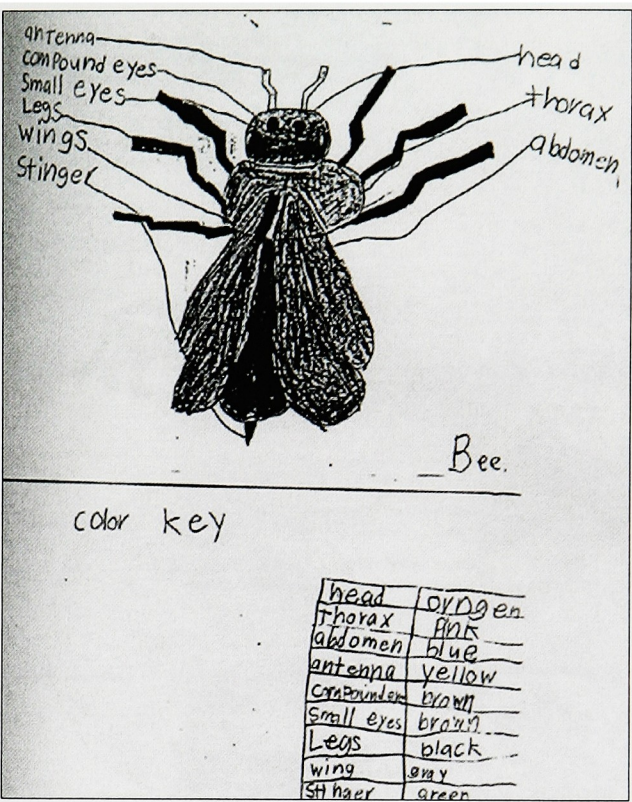
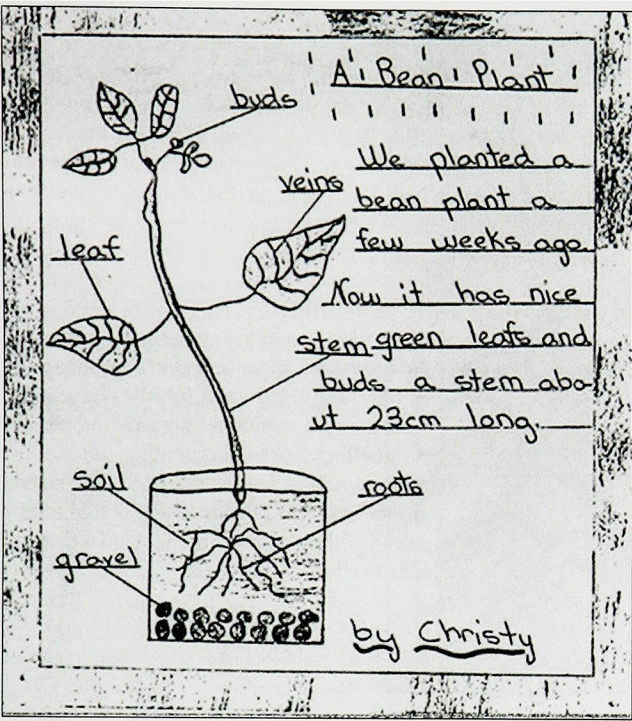


Illustration Diagram
I See What you Mean,
Children at Work with Visual Information.
Steve Moline
Stenhouse Publishing
1995

Illustration Diagram
I See What you Mean,
Children at Work with Visual Information.
Steve Moline
Stenhouse Publishing
1995

Graphic Design Methods Examples That Does Not Appear In The Guidebook

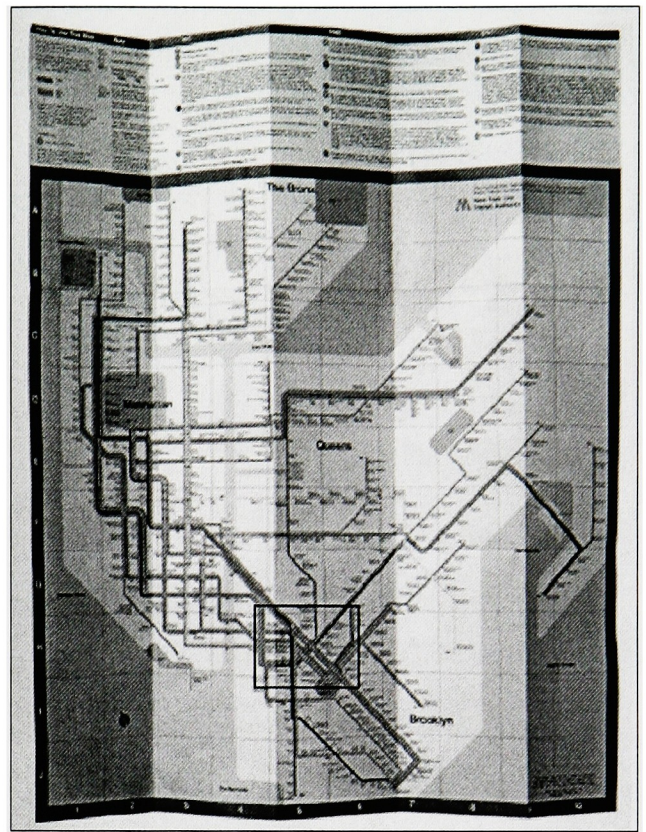
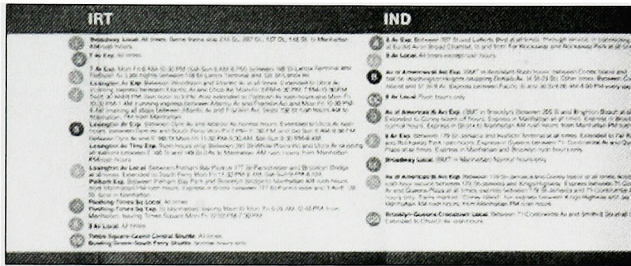


Assemble production tools and components	<ol style="list-style-type: none"> 1. Get the correct Folder — including grid sheet — from the Layout Kit. 2. Cut out the signal word reproduction art from the Folder. 3. Cut out the symbol/pictograph art from the Symbol/Pictograph Folder. 4. Get the typeset messages from typesetter using the Typesetting Form to order. 5. If you don't use the Typesetting Form, instruct the typesetter to set Helvetica 18 on 20 point type. Show him an example from Page 32. 	
Signal Word	<ol style="list-style-type: none"> 1. Start at the top of the grid sheet and work down. 2. Paste the signal word reproduction art into position. <p>Rubber cement is a good paste and allows for repositioning if necessary.</p>	
Symbol/Pictograph	<ol style="list-style-type: none"> 1. Leave one blank line under the signal word. 2. If there is a symbol or pictograph, paste it into place. 	
First Message Unit	<ol style="list-style-type: none"> 1. The first message unit describes the hazard and the results of ignoring the warning. It is set in bold type. 2. Leave one blank line between the symbol/pictograph and this text. If there is no symbol/pictograph, leave one blank space between the signal word area and this text. 3. Align the message unit type so that the left-hand margin is one unit in from the side rule and the base sits on a grid line. 4. Paste the first message unit into place. 	

Illustration Diagram

www.amsite.com

Date Reviewed: June 2004



Vignelli Associates
New York City Subway Way Finding System
 Graphic Design Archive at
 Rochester Institute of Technology
<http://design.rit.edu>
 Date reviewed: June 2004

Design Literacy

Graphic Design Methods Guidebook

Graphic Design Methods to Enhance
New York State Department of Education's
Eighth Grade (Intermediate)
English Language Arts Learning Standards

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School of Design
College of Imaging Arts and Sciences
Rochester Institute of Technology

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**Defining The Purpose and Function of
Graphic Design**

Graphic design combines both verbal and visual communication to engage, inform, instruct, and enlighten an individual or a large audience. It defines the function of how information is communicated through several different media, such as printed books, brochures, posters, packaging, etc. As the technology in the field advanced, graphic designers were able to communicate information using applications such as time-based and interactive media, and environmental graphics, just to name a few. With such varied mediums and applications, graphic design has had an enormous impact on society. Citizens of the world now come into contact with graphic design from the range of messages that surround them, from reading books and other documents, and through their access to the Internet.

Graphic designers are trained professionals who work with others to help businesses communicate messages. It is commonplace to have graphic designers working with printers, photographers, illustrators, and computer programmers. However, graphic designers today are collaborating with people outside the arts, such as doctors, business leaders, and government officials, to assure the accuracy of the information that is contained in their designs, which is often outside the graphic designer's area of expertise. It is a marriage of the consultants' knowledge on a variety of diverse topics and the graphic designer's ability to convey that knowledge most effectively to the widest audience possible.

A graphic designer uses a range of principles and methods to solve complex visual and verbal communication problems. These design methods help the graphic designer identify objectives, brainstorm ideas, organize and present information, evaluate solutions, and monitor the manufacturing of design solutions. The graphic design profession has borrowed methods from other disciplines and has incorporated them into the graphic design process. The mediums and applications may change over time as technology continues to develop; however, these design methods will remain the backbone of communicating information.

**Enhancing 8th Grade Education Through
Graphic Design**

This guidebook presents graphic design methods and explains how they may be used to enhance the teaching of 8th grade students in the New York State Education system. The purpose is to show that these design methods can be a valuable supplement to the English Language Arts Learning Standards at the intermediate level. The goal is not to direct students into a professional graphic design career, but to show that learning and using these methods will reinforce for the students what the U.S. Department of Labor stated in its 1992 report, *What Workers Requires of Schools*, "that all adults of today need verbal and visual communication skills to function in the workforce."

New York State Learning Standards

The standards are divided into seven subjects, from the arts to social studies. Each subject lists its own set of learning standards in an attempt to give students a well-rounded education.

These subjects and their corresponding learning standards represent the core of what all students should know, understand and be able to do as a result of their schooling. Each subject taught in grades K-12 in New York State has its own learning standards.

Subjects are:

- Languages Other Than English
- Health and Physical Education
- Math, Science and Technology
- The Arts
- Career Development and Occupational Study
- English Language Arts
- Social Studies

Graphic design methods gathered for this thesis match the objectives for the ELA Learning Standards by allowing 8th grade students to synthesize and visually organize information to discover relationships among content, use simple imagery and text to convey a message, and use written language for effective social communication. As a result of using these graphic design methods, 8th grade students could have a better understanding of how to use language in a variety of ways in order to gain effective communication skills.

Learning Levels

The learning standards for each subject have three different levels, and each grade within K-12 fits within one of these levels.

- | | |
|----------------|----------------|
| • Elementary | kindergarten–5 |
| • Intermediate | grade 6–8 |
| • Commencement | grade 9–12 |

Learning Standards For English Language Arts

There are four Learning Standards within the Intermediate level of English Language Arts

- 1 Language For Information and Understanding
- 2 Language For Literary Response and Expression
- 3 Language for Critical Analysis and Evaluation
- 4 Language for Social Interaction

Using This Guidebook

This guidebook presents graphic design methods for two of the four Learning Standards within English Language Arts (ELA) at the Intermediate level. Five graphic design methods were chosen for each of the two learning standards

These learning standards are:

Standard 1**Language for Information and Understanding**

Graphic design methods chosen for English Language Arts Standard 1 are proposed to help 8th grade students learn how to understand information once they have collected it from several different sources. As a result, students will be able to synthesize the information to discover relationships and concepts. Students will also be able to use words and images to verbally communicate information.

Standard 4**Language for Social Interaction**

Graphic design methods chosen for ELA Standard 4 help 8th grade students improve their use of oral and written language for effective social communication.

For each of these two Learning Standards, the main objective is provided. Five graphic design methods are described as an educational supplement to enhance the existing English Language Arts Learning Standards.

For each graphic design method presented, a visual example is provided with:

Method Description to explain how the graphic design methods are used in the context of the example.

Objective Summary to explain how the graphic design methods relate to the existing Learning Standards.

Resources to provide a source for further reading.

This guidebook serves as an educational supplement for these two English Language Arts Learning Standards. This project could be expanded in the future to provide more graphic design methods to enhance other subjects and learning levels. The graphic design methods presented here for Learning Standards 1 and 4 have served the graphic design field well for many years and have the potential for enhancing early education.

Why is this Research Important?

In July 1992, the U.S. Department of Labor issued a report entitled, *What Workers Require of Schools*. The report identifies basic skills and competencies that workers of the future will need in order to achieve strong job performance.

Many of the skills required for future workers were described as communication skills, including:

- evaluating information
- organizing and maintaining information
- interpreting and communicating information
- processing information

In addition, the report also stated "that future workers will need to have creative, visual thinking skills. "

The report was developed to "provide a curricular framework for preparing students for adult life."

All the skills stated above involve knowing how to write information for the purpose of being clearly understood.

Government and school officials also support reading and writing information in a visual manner. In the book, *Design as a Catalyst for Learning*, Jane Alexander, Chairman of the National Endowment for the Arts, made these statements:

"The world into which students now graduate is changing rapidly as global competition increases..."

"Information technology transforms the way work is conducted."

"The 'knowledgeable worker' is now in demand..."

"Such workers also know how to access, evaluate, interpret, and communicate information in a variety of media."

"How do children gain these skills?
Education in the arts is an essential component."

Main Objective

Current English Language Arts
Learning Standard 1

Graphic Design Methods

An Educational Supplement to Enhance the
English Language Arts, Learning Standard 1

Students will listen, speak, read, and write for information and understanding. As listeners and readers, students will collect data, facts, and ideas; discover relationships, concepts, and generalizations; and use knowledge generated from oral, written, and electronically produced texts. As speakers and writers, they will use oral and written language that follows the accepted conventions of the English language to acquire, interpret, apply, and transmit information.

1.1 Matrix

A matrix is a rectangular system of horizontal rows and vertical columns where two or more sets of information can be compared. Attributes of a subject listed in the vertical y-axis can be compared or cross-referenced with different attributes listed in the horizontal x-axis. This method allows the user to compare characteristics or attributes that otherwise are not linked to one another. The comparison is made where the x and y axes intersect.

1.2 Illustration Diagrams

This kind of diagram uses simple imagery to explain an idea, a concept, an object, or process. The imagery is often highly representational to depict the actual object. It is most helpful when illustration diagrams combine drawn imagery with the text. Text can reinforce, explain, and label parts of an image, so the viewer receives information visually and verbally.

1.3 Timeline

A timeline represents a period of time, visually depicted as a horizontal line that is divided into increments of time (days, months, years, decades, etc.) to mark specific information, highlight events in history, or trace major accomplishments – any conceivable listing of information across a period of time.

1.4 Wurman's Organizing Hatracks

Architect and Information designer Richard Saul Wurman developed this method of organizing information in five different ways: alphabetically, chronologically, categorically, by time, and by magnitude. This method is a useful problem-solving tool that reveals information and relationships by organizing and reorganizing facts and observations. The same set of information is put into different categories to draw new conclusions or viewpoints.

1.5 Typographic Hierarchy

This method uses the fundamental typographic variables of position, weight, size, etc, to reveal the hierarchy of information inherent in a message.

This matrix allows the viewer to compare percentages of websites that collect a range of personal information across four categories of websites: Financial, Children, Retail, and Health.

Percentage of Web Sites that Collect Personal Information				
TYPE OF WEB SITE	FINANCIAL	CHILDREN	RETAIL	HEALTH
E-mail address	93	96	100	100
Name	73	74	77	53
Postal address	65	49	70	51
Telephone #	59	24	67	47
Fax #	27	26	31	13
Birth date	17	46	7	12
Social Security #	20	1	6	3
Credit card #	7	0	31	8
Gender	4	25	2	8
Occupation	21	3	5	3
Education	6	7	7	2
Income	20	3	3	0
Interests	1	18	5	3
Hobbies	1	9	0	1

Method Description

Information designer and architect Richard Saul Wurman gathered a renowned group of graphic designers from around the world to develop a book entitled *Understanding USA*. In the book, Robert Greenberg, CEO of R/GA Digital Studios, designed a matrix that communicates the percentage of websites that collect personal information. The top headings on the x-axis categorize the kinds of websites that appear on the internet into four columns. The headings on the y-axis list 14 sets of information that could be collected on the internet. Percentages of the 14 sets of information collected are matched with the four main headings when the x and y axes intersect.

Objective Summary

This method helps students collect data, facts and ideas; discover relationships, concepts, and generalizations.

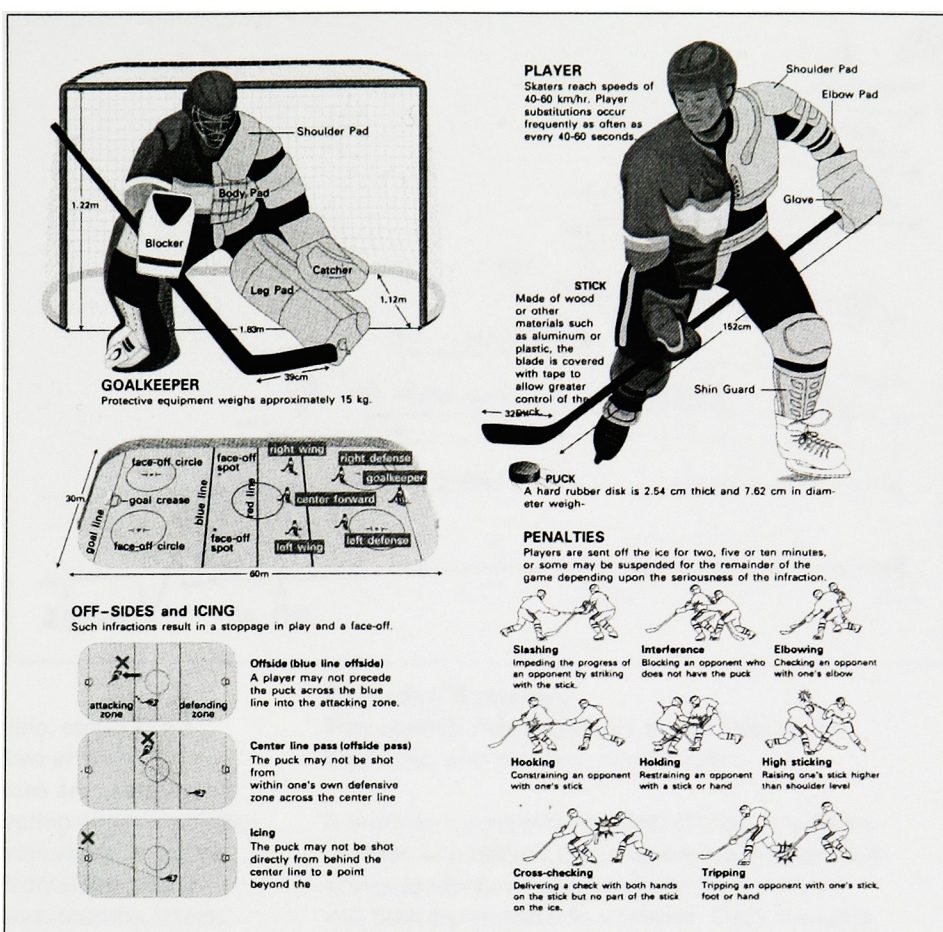
This method can be developed by students after collecting information from different sources. The matrix allows students to organize data in a grid structure format. As a result, the information gathered from different sources can work together to reveal connections. A matrix allows students to compare characteristics or attributes that are otherwise not linked to one another.

Resource

Understanding USA
Richard Saul Wurman
TED Conference Inc., 2000



By using illustration in a diagrammatic way with labeling and captions, a significant amount of information can be conveyed clearly, without large amounts of text.



Method Description

Hiroyuki Kimura, a designer with *Tube Graphics*, a graphic design firm in Japan, designed the official guide for the 1998 Winter Olympic Games using illustration diagrams. The guide was given to those attending the Winter Olympics to help them learn factual information about the sports, such as rules and penalties, equipment used, and the different kinds of playing areas and fields. With this information, people had a better understanding of the games while watching the Olympics.

Through the use of the illustrations, the guide can convey information without large amounts of verbal text. Instead, the text helps to label the names of the equipment while the illustrations serve as the method of conveying the mass and size of the equipment. The combination of the illustrations and short descriptive text allows the information to be readily accessible to readers by making it quicker and easier to understand.

Objective Summary

This method enhances students' abilities to discover relationships, concepts, make generalizations, and understand information.

An illustration diagram teaches students how to explain an idea, a concept, an object, or process. Illustration diagrams can be used to convey a science or math process, or to describe the look and function of objects from history. Students using these diagrams do not have to possess a skill for drawing. They can use found imagery from book illustrations or photographs gathered from websites and the library that depict the objects or information that they are communicating. The inclusion of images can help clarify textual information that is hard to explain.

Resource

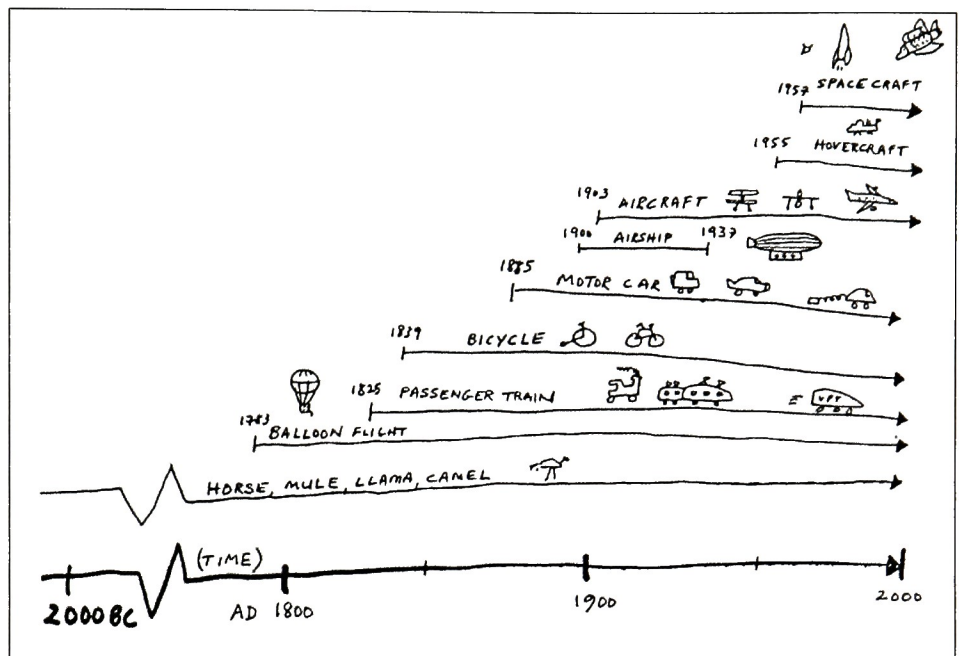
Information Graphics

Innovative Solutions in Contemporary Design

Peter Wildbur and Michael Burke

Thames and Hudson, 1998

Various forms of transportation from 2000 BC to the present are shown in this timeline to help readers understand how transportation inventions may have influenced one another.



Method Description

Visual literacy educator, Steve Moline, states in his book, *I See What You Mean, Children at Work with Visual Information* that timelines are useful when tracking historical events which overlap and have some bearing on each other. A timeline represents a period of time, visually depicted as a horizontal line that is divided into increments of time (days, months, years, decades, etc.)

In the timeline example above, different historical information about several subject matters is displayed on different horizontal rows. This allows the viewer to better understand the sequence of events, make comparisons and see how the various modes of transportation may have influenced one another.

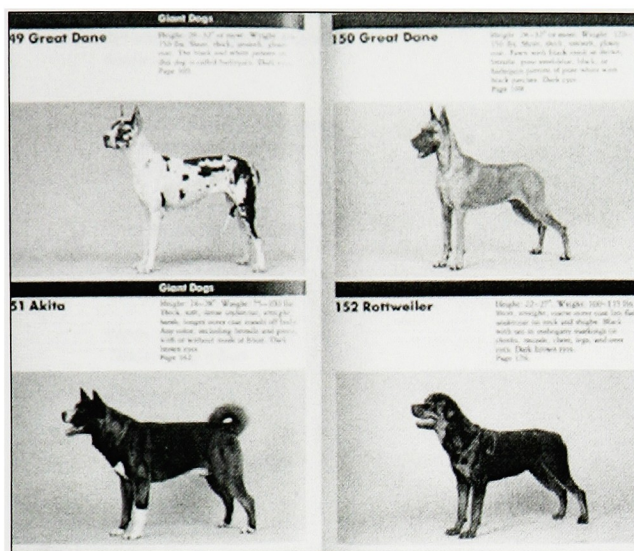
Objective Summary

This method helps students collect data, facts and ideas, and discover relationships.

A timeline represents a period of time in a visual manner. In addition, the timeline is a method that allows students to communicate their process and final conclusions in a project. Once students are finished with a project on any subject matter, they can be asked to develop a timeline that will structure and visually organize each step of the process. Putting each step on a separate horizontal level demonstrates how the steps influenced each other over the length of the project. Reinforcement of what was learned by using the timeline can be a good conclusion to any project.

Resource

I See What You Mean
Children at Work with Visual Information
 Steve Moline
 Stenhouse Publish, 1995



These pages of the book categorize each dogs by breed and size.

Method Description

Information about the design of *Harper's Illustrated Dog Handbook* was gathered from the Design History Archive at Rochester Institute of Technology. During the 1970's, the design team at Vignelli Associates, a design firm in New York City, used Wurman's Hatracks to develop the handbook. Vignelli Associates grouped each dog into separate breeds, sizes and different body type characteristics.

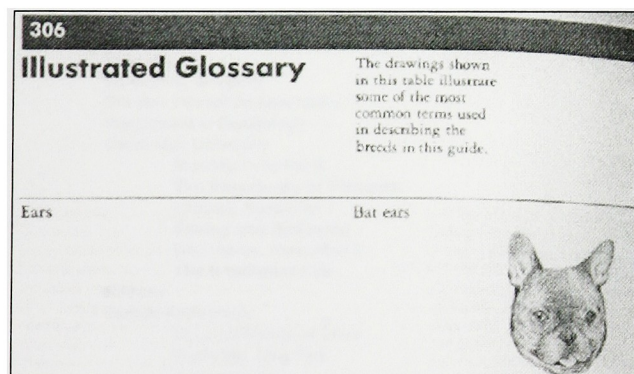
Objective Summary

This method helps students discover relationships, concepts, and make generalizations.

The Wurman's Hatracks method, often used by professional information designers, can be used in 8th grade education to help students learn how to reveal information and relationships by reorganizing facts and observations to come up with new conclusions. This allows students to understand different viewpoints of information presented and their relationship to other information. In the case of *Harper's Illustrated Dog Handbook*, viewers learn about each breed through its size and characteristics compared to other dogs. By using this information, students will be able to make connections among various pieces of information and be able to brainstorm possible ways of organizing that information.

Resource

Graphic Design Archive at
Rochester Institute of Technology
<http://design.rit.edu>
Date reviewed: June 2004



This is an example of how the *Illustrated Glossary* organizes the different body characteristics of dogs. The example above shows how some dogs have ears like bats.

Art and Technology and Lectures
Presents

Richard L. Gregory
Director, Perception Laboratory
Department of Psychology
Cambridge University

Monday, October 3
The Peculiarity of Pictures

Monday, November 7
Seeing and Believing

Wednesday, November 9
The Intelligent Eye

8:00 pm

Carlson Auditorium
73 Lomb Memorial Drive
Rochester, New York

Admission Free

The first exercise explores how inserting space between lines of text can isolate and group parts of the message.

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Shifting lines of type, or indenting, differentiates parts of the message. The bold treatment of specific lines of type emphasizes and associates kinds of information. In this example, bold weight associates the speaker, Richard L. Gregory with the three lectures he is to deliver.

Method Description

The *Typography Hierarchy* Project was developed by Karen Moyer, Associate Professor of Communication Design at Carnegie Mellon University to help college students studying graphic design gain effective typography skills. The project focuses on using typographic alignment, typographic weight, and line spacing to reveal the hierarchy of information within a group text. Only using these variables, the goal is to use typographic hierarchy to identify different kinds of information and to emphasize parts of the text to make it more accessible to readers.

Using the same text throughout, the project is a sequence of exercises focused on individual variables, and then combinations of variables. As students progress through the exercises, they learn how the choice of variables can successfully reveal the hierarchy of information inherent in a text.

Objective Summary

This method helps students acquire, interpret, apply, and transmit information.

Although the Typography Hierarchy Project was developed for students studying to be professional graphic designers, it could be taught to 8th grade students. These students would learn how to format text in a clear and assessable manner using typographical variables to emphasize the importance of particular facts or information. Developing a Developing typographic hierarchy exercises to teach principles of effective basic typography to 8th grade students will serve them well as adults. More and more, adults in the workforce are required to format documents for presentation or for daily communication in the workplace. If they know how to reveal the hierarchy of information inherent in a message, they will be better able to communicate in a clear and accessible manner.

Resource

Professor Karen Moyer
Communication Design
Carnegie Mellon University
Project developed 1979

Main Objective

Current English Language Arts
Learning Standard 4

Students will listen, speak, read, and write for social interaction. Students will use oral and written language that follows the accepted conventions of the English language for effective social communication with a wide variety of people. As readers and listeners, they will use the social communications of others to enrich their understanding of people and their views.

Graphic Design Methods

An Educational Supplement to Enhance the
English Language Arts, Learning Standard 4

4.1 Team Design

This method of teamwork often involves working with other designers or professionals from different disciplines to solve a complex design problem. The members of the team bring different viewpoints, skills and experiences to the collaboration. This requires each member of the team to have the ability to work with others to finish the task. Team members also use interpersonal skills to communicate with one another.

4.2 Studio Critiquing

A critique is a discussion session in which visual solutions are presented, explained and discussed within a group of designers. Critical assessment helps to provide valuable feedback and increase understanding.

4.3 Project Proposal

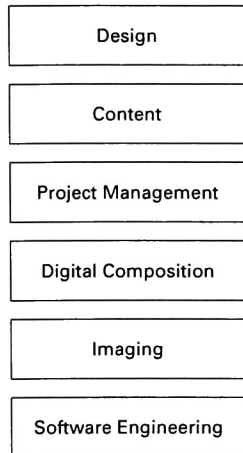
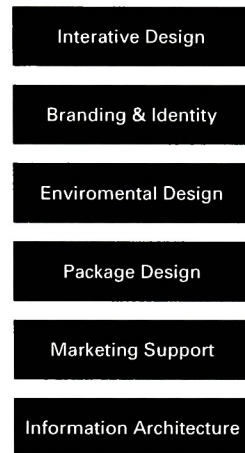
A project proposal is a clear, well-written description of a project plan and its intended outcomes. Project proposals serve as the contract between client and designer.

4.4 Presentation Methods

The presentation of any designer's work is important to make a good impression on potential employers and clients. Good presentation methods are based on presenting the work or ideas using clear and accessible visual diagrams, illustrations, and pictures. Along with a strong verbal explanation, these visual materials are an important part of a good delivery.

4.5 Case Studies

A case study is a summarizing method used by professionals to inform others of recent project activity, outcomes, and successes. Information accessed through graphic design case studies helps other designers to stay informed with current work, processes, and technologies within the profession. This method requires graphic designers to verbally explain ideas, articulate a process from beginning to end, and convey how and why certain factors may have had an effect on the final result of a project.

AMS Teams**Areas of Design****Method Description**

An internationally known design firm from Pittsburgh, Pennsylvania, *Agnew Moyer Smith's* (AMS) multi-disciplinary approach was examined to understand how this method of team design is effective in solving communication problems. Separate groups specialize in different areas of graphic design. These groups work together to develop and complete projects for the firm's clients. Depending on the communication goals and scope of a project, not all groups work together at the same time. If a project is a website, the interactive and software engineering teams work together, while the design, marketing support and content teams work on the printed applications of the project.

Objective Summary

This method helps students use the social communication of others to enrich their understanding of people and their views.

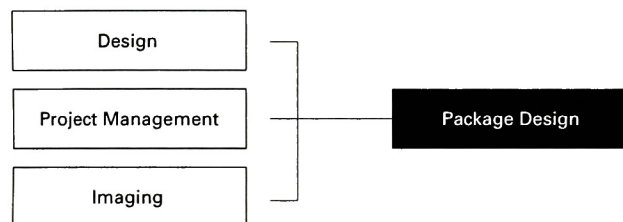
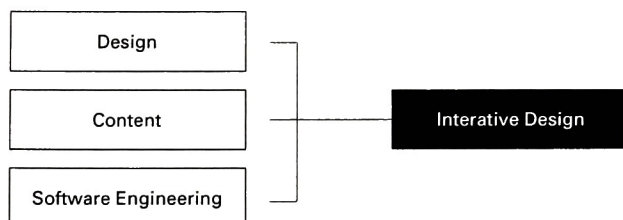
Although team design is a part of the graphic design field, many fields use multidisciplinary teamwork to solve informational problems. Students today can begin to take part in lesson plans that involve teamwork. Once a team project is given, students are put into groups. Each group researches and studies specific areas of the topic. Then each group joins together to complete the project as a whole. Each group depends on the others to share the information each has gathered.

This follows the same team model that Agnew Moyer Smith uses. Through this model, students can gain interpersonal skills through their interaction among team members. They will learn how to communicate effectively, integrate different aspects of a project to produce a seamless result.

Resource

www.amsite.com

Date Reviewed: June 2004

Project 1**Project 2**

The diagram above shows how teams within the communication, planning and design firm, Agnew Moyer Smith, can be grouped together to develop and complete projects in several areas of design.



*Design Professor
Deborah Beardslee often
has weekly critiques with her
graduate students at RIT.
Students pin work on the wall
or display it on the table for review.*

Method Description

In an attempt to reach out and inform high school students interested in studying Graphic Design, the American Institute of Graphic Arts (AIGA) published an article in 2004 entitled *What Goes on in Design School?* on its website. AIGA is a professional organization that offers several services to the design community, such as continuing education programs, lectures, and exhibitions. The article states that design education is project-based and taught in a studio. Most college courses other than design are often subject-based and taught in a lecture hall. In the studio environment, design professors use the standard method of feedback known as critiquing.

The article explains that the “Crits” take place at different stages in a project and provide an opportunity to step back and reflect on the project, to exchange critical or supporting ideas, to clarify intentions, and to develop the ability to discuss or even defend one’s own work, a necessary skill that will later be very important when working with clients. The critique helps students to openly accept criticism, while it also trains them in the important verbal skills needed to properly explain the reasons behind their solutions. They must go beyond the “I like it” or “I do not like it” position. Critiques also help students to internalize standards of excellence, to develop a shared vocabulary for discussion, to learn to incorporate useful suggestions from others, and to evaluate their own and others’ performances.

Objective Summary

This method helps students use the social communication of others to enrich their understanding of people and their views.

Students in 8th grade can begin to take part in critiques early in school even though they may never study design at the college level. Critiques can be used in just about any subject. They allow students to give each other feedback with the teacher facilitating the discussion. In addition to gaining verbal and critical thinking skills, the students will learn to integrate the feedback of others to improve their own work.

Resource

www.aiga.org

What Goes on in Design School?

Date Reviewed: June 2004

- 1 Define the project
- 2 Create an architecture that explains the process
- 3 Define who does what
- 4 Define the frame and budget
- 5 Establish efficient communication among all the key players

*In his book, **Designing Business**, designer and author, Clement Mok, says there is a five step process in proposing a project to a client. These steps help designers plan their projects beginning to end.*

Method Description

In the May, 2004, issue of AIGA's *Design Business*, graphic designer Shel Perkins published an article about project proposals. A project proposal is a clear, well-written description of a project plan and its intended outcomes. Perkins begins the article with a basic overview of the importance of project proposals in the graphic design profession. Perkins states, "Most design firms perform services for clients on the basis of a written proposal." She later explains that the written proposal serves as a detailed project document that defines the scope of work, the process, the schedule, and the total price. Most importantly, a proposal is a discussion document wherein the graphic designer puts forward a recommended course of action for the client's consideration. Perkins suggests that the design community think about the creative process when writing a proposal. Writing down the ideal sequence of activities in phases, steps, and milestones allows the graphic designer to produce their best work.

Objective Summary

This method will help students in their practice of writing for effective social communication with a wide variety of people.

Although Perkins wrote the article for professional graphic designers, project proposals such as these can allow 8th grade students to gain important writing skills. These skills will help them prepare the documents needed to explain their ideas to their teacher and their classmates. By completing this exercise, the students will learn that it is one thing to have a good idea, but it is another to verbally express the idea in clear terms.

Resource

www.aiga.org

Design Business

Date Reviewed: June 2004

Designing Business

Clement Mok

Adobe Press

1996

Graduate graphic design students at RIT prepared a professional presentation board to present their final solution to their clients, Eastman Commons. The white pieces of paper showing letterhead and logo are adhered to a neutral gray board for good contrast between the work and the background. Alignment, trimming and mounting are done with careful precision.



Method Description

A team of graduate graphic design students at Rochester Institute of Technology were involved in a project for a local Rochester community by developing an identity system for a new non-profit organization known as *Eastman Commons*. Eastman Commons' mission is to bring supportive housing to Rochester for those who are homeless or recovering from drug use.

Two logos were developed by the students as possible design solutions. Each logo and other design materials were neatly crafted on the presentation board for the best viewing possible. Hand skills and attention to detail are the keys to this aspect of presentation. In addition to the craftsmanship of the presentation boards, each student in the group had to discuss how the two final design solutions would work. Their discussion on the solutions allowed Eastman Commons to decide which logo to select. In addition to good craftsmanship of the presentation board, clear verbal explanation of the design solutions was important to Eastman Commons' understanding of the work presented.

Objective Summary

This method will help students listen, speak, read and write for effective social interaction and communication.

Just as with these graduate graphic design students, it is important for 8th grade students to gain good craftsmanship skills and the ability to verbally explain information to an audience. When making presentations, 8th grade students have to learn how to explain their project and the idea behind the solution, the process of how they intend to complete the project, and what the final outcomes will be.

Resource

Graduate Graphic Design Program
Rochester Institute of Technology
2003–2004

The pixilated concept of the Amsterdam Olympic sports pictograms influenced the poster and other design applications for the proposed 1992 Amsterdam Olympic Games.

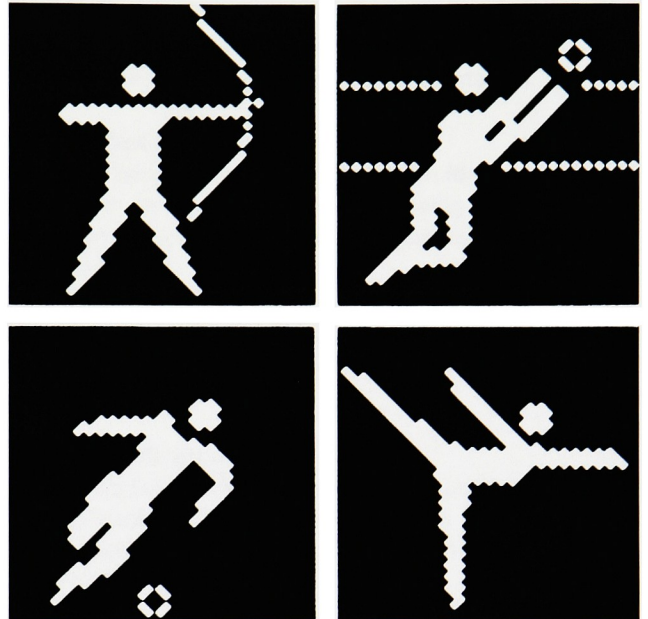


Method Description

In the book *Information Graphics*, author Peter Wildbur, includes a case study about the proposed 1992 Amsterdam Olympic pictograms design project. Case studies like this inform graphic designers about past and current projects and can provide them with a better understanding of how processes and technologies can solve unique visual communication problems.

In this case study Wildbur gives a summary explaining when the pictograms were first developed and used, how the concept for the Amsterdam Olympic sports pictograms were first developed using hand sketching and later with computer software, and concludes with a review of how the pixelated concept of the pictograms influenced other design applications for the 1992 Olympic Games. Pixels are small digital, diagonals square shapes developed by imaging software. When pixels are group together they help make a single image with square edges.

Information about the history of pictograms explains how the 1992 Amsterdam Olympic pictograms emerged over time and also allows readers to understand why pictograms are an effective communication component. Wildbur is not only effective in describing how the pixelated pictograms are a symbol for each Olympic sport, but also how they convey the highly technical culture of Amsterdam.



Objective Summary

This method will help students use written language for effective social communication with a wide variety of people.

Whether they appear in printed form or on the internet, case studies provides a wealth of information for professional graphic designers. Students can also use case studies as an effective method to verbally summarize the school projects they have completed. This method requires students to verbally explain ideas, articulate a process from beginning to end, and convey how and why certain factors may have had an effect on the final result of the project.

Resource

Information Graphics

Peter Wildbur

Van Nostrand Reinhold, 1989

This guidebook serves as an introduction to what is possible when graphic design methods supplement eighth-grade education. There are many more graphic design methods that can be used as educational tools for teachers, students and parents; however, with this guidebook they can find more sources that explain how graphic design methods can teach effective verbal and visual communication skills.

It is important for teachers to know that more than one graphic design method can be used in a lesson plan. The list on the right on the summary of graphic design methods that can enhance Learning Standards 1 and 4 of the New York State English Language Arts subject.

1.1 Matrix

A Matrix can be used to help students make comparisons between two sets of information.

1.2 Illustration Diagram

An Illustration Diagram can explain an idea, a concept, an object, or process by using representational imagery from a drawing or photograph.

1.3 Timeline

A Timeline can be used by students to visually depict a period of time.

1.4 Wurman's Organizing Hatracks

Wurman's Organizing Hatracks can be used to help students reveal information and relationships by organizing and reorganizing facts and observations.

1.5 Typographic Hierachy

Typographic Hierachy can be used to help students reveal a heirarchy of information when writing and formatting documents.

4.1 Team Design

The Team Design Method can be used to help students learn how to communicate and work in a group setting.

4.2 Studio Critiquing

Studio Critiquing can be used to help students gain valuable feedback and incorporate it into their work.

4.3 Project Proposal

A Project Proposal can be used to help students plan and structure their projects.

4.4 Presentation Methods

Presentation Methods can be used to help students gain valuable feedback.

4.5 Case Studies

Case Studies can reinforce what was learned by documenting the steps to complete the project.

American Institute
of Graphic Arts

www.aiga.com

Date Reviewed: June 2004

This website provides online information and resources for the graphic design professional and for those interested in visual communication.

Meredith Davis
Peter Hawley
Bernard Mc Mullan
Gertrude Spilka

Design as Catalyst for Learning

Association for Supervision and
Curriculum Development
1997

This book gives an overview of the history and current information about design education within grades K–12. The book also shows how the design process can help children solve information problems in a creative and visual manner.

Steve Moline

I See What You Mean

Children at Work with Visual Information

Stenhouse Publishing
1995

This book provides information and examples of how visual information components and design considerations, such as usability, can teach children how to gain visual literacy skills.

Dominie Information Toolkit

Using Nonfiction Genres and Visual Text

Book: A, B, and C

Black Cocatoo Publishing
2002–2003

This workbook explains how teachers can help children research and write using visual information components, such as maps and charts.

<http://k-8.visual.info>

Date Reviewed: June 2004

This website provides resources on how information design can teach children to gain visual literacy skills.

Case Studies**www.klariti.com/business-writing**

Date Reviewed: June 2004

This website offers tips on how to write an effective case study.

Presentations Methods**www.publicspeakingkills.com**

Date Reviewed: June 2004

This website lists information and resources to help all people, regardless of education and age, gain effective presentation and public speaking skills.

Project Proposals**www.captureplanning.com*****How to Write a Business Proposal***

Date Reviewed: June 2004

www.allfreelancework.com/artclepieterse.php***Winning Proposals: 10 Guidelines***

Date Reviewed: June 2004

These websites offer information on how to write an effective project proposal.