Session 2—Item 11
Score Point 2
This response matches the exemplary response contained in the rubric. The student gives the correct answer of 7 cents and shows the correct work demonstrating the process used. The response receives a Score Point 2.

Score Point 1
This response shows an incorrect answer of 27 cents but the student's work demonstrates a correct process. Therefore, the response receives a Score Point 1.
Use your punchout coins to solve this problem.

Laura found 3 coins in her backpack. Two of the coins are the same and one is different. What is the LEAST amount of money the 3 coins can add up to?

You MUST show your work.

Answer 60¢
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Appendix D

Social Studies
Indiana Academic Standards
INDIANA

ACADEMIC STANDARDS FOR SOCIAL STUDIES

August 3, 2001
INTRODUCTION

Indiana’s Academic Standards for K-8 social studies are presented grade-by-grade and organized around five content areas: (1) - History; (2) - Civics and Government; (3) - Geography; (4) Economics; and (5) - Individuals, Society, and Culture (psychology, sociology, and anthropology). For instructional purposes, content knowledge should be integrated with skills for research, inquiry, and participation. A brief scope and sequence model, which provides a focus for each grade, appears on the following pages.

At the high school level, standards are presented for required and high-enrollment courses, including: World History/Civilization, World Geography, United States History, United States Government, Economics, Psychology, and Sociology. United States History and United States Government are part of Indiana’s minimum graduation requirements. World History/Civilization, World Geography, and Economics are expectations for most students and especially for those who wish to pursue any type of post-secondary education through Indiana’s Core 40 and Academic Honors programs. Psychology and Sociology are high-enrollment elective courses. Academic standards for the high school courses are organized according to structure of the discipline or subject area.
SCOPE AND SEQUENCE MODEL FOR GRADES K-12

INDIANA'S ACADEMIC STANDARDS FOR SOCIAL STUDIES:

The goal of social studies education is the development of informed, responsible citizens who participate effectively in our democracy. The Academic Standards for Social Studies address this goal by integrating a strong knowledge base with the skills for inquiry, thinking, and participation. The standards are organized around five content areas: History, Civics and Government, Geography, Economics, and Individuals, Society, and Culture (psychology, sociology, and anthropology.) The following scope and sequence model provides a focus for each grade as it builds students' skills and knowledge. Key topics, concepts, and skills are introduced early and are reinforced and expanded from Kindergarten through Twelfth Grade.

<table>
<thead>
<tr>
<th>GRADE LEVEL FOCUS K-8:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Kindergarten: Living and Learning Together</strong></td>
</tr>
<tr>
<td>Students focus upon their immediate environment, and emphasis is placed on social and civic learning experiences, including interaction with peers and respect for others.</td>
</tr>
<tr>
<td><strong>Grade 1: Home, School, and Nearby Environments</strong></td>
</tr>
<tr>
<td>Students examine changes in their own communities over time, explore the way people live and work together around the world, and learn about the rights and responsibilities of citizens as they interact in home, school, and local environments.</td>
</tr>
<tr>
<td><strong>Grade 2: The Local and Regional Community</strong></td>
</tr>
<tr>
<td>Students describe their basic rights and responsibilities in a democratic society as they examine local and regional communities in the present and past and how these communities meet people’s needs.</td>
</tr>
<tr>
<td><strong>Grade 3: The Local Community and Communities Around the World</strong></td>
</tr>
<tr>
<td>Students study development and change in the local community and in communities in other states and regions of the world, including how people have developed and used technology, as well as human and natural resources, in shaping communities and interacting with their environment. They also study how citizens participate in the government and civic life of communities.</td>
</tr>
<tr>
<td><strong>Grade 4: Indiana in the Nation and the World</strong></td>
</tr>
<tr>
<td>Students study Indiana and its relationships to regional, national, and world communities. They consider the influence of physical and cultural environments on the state’s growth and development and the principles and practices of citizenship and government in Indiana.</td>
</tr>
</tbody>
</table>

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Page 3
Grade 5: The United States – The Founding of the Republic
Students study the history of the United States to 1800 focusing on the influence of political, geographical, economic, and cultural factors on early development. Emphasis is placed upon study of Native American cultures, exploration, colonization, settlement, and the founding period that produced the United States Constitution and Bill of Rights.

Grade 6: Peoples, Places, and Cultures in Europe and the Americas
Students in Grade Six study the regions and countries of Europe and the Americas, including geographical, historical, economic, political, and cultural relationships. The areas emphasized are: Europe and North and South America, including Central America and the Caribbean.

Grade 7: Peoples, Places, and Cultures in Africa, Asia, and Australia
Students in Grade Seven study the regions and nations of Africa, Asia, and the Southwest Pacific including historical geographical, economic, political, and cultural relationships. This study includes the following regions: Africa, Southwest and Central Asia, South Asia, Southeast Asia, East Asia, and the Southwest Pacific.

Grade 8: United States History – Growth and Development
Students briefly review the early history of the nation and then focus on national and state development through the Civil War and Reconstruction periods. Emphasis is placed upon principles of the United States and Indiana Constitutions and the influence of political, geographic, economic, and cultural factors on the development of Indiana and the United States.
GRADE TWO
Overview

The K-8 Indiana Academic Standards for Social Studies are organized around five content areas. The content area standards and the types of learning experiences they provide to students in Grade Two are described below. On the pages that follow, age-appropriate concepts are listed underneath each standard. Skills for thinking, inquiry, and participation in a democratic society are integrated throughout.

Standard 1
History
Students will differentiate between events that happened long ago and recently, recognize examples of continuity and change in local and regional communities, and consider ways people and events of the past and present influence their lives.

Standard 2
Civics and Government
Students will explain why communities have government and laws, demonstrate that people in the United States have both rights and responsibilities, and identify ways that people work together to promote civic ideals.

Standard 3
Geography
Students will locate their community, state, and nation on maps and globes, identify major geographic characteristics of their local community, and explore geographic relationships between their community and other places.

Standard 4
Economics
Students will describe how people in a community use productive resources, specialize in different types of jobs, and depend on each other to supply goods and services.

Standard 5
Individuals, Society, and Culture
Students will explain how local communities are made up of a variety of individuals and groups, identify cultural traditions in their own locality, and use a variety of information resources to learn about their own community and other cultures.
GRADE TWO

The Local and Regional Community

Students in Grade Two will describe their basic rights and responsibilities as citizens as they examine local and regional communities* in the present and past and how these communities meet people's needs.

*Local and regional communities: The neighborhood, municipality, or surrounding regional community that is linked closely to the school

STANDARD 1

History

Students will differentiate between events that happened long ago and recently, recognize examples of continuity and change in local and regional communities, and consider ways that people and events of the past and present influence their lives.

Historical Knowledge

2.1.1 Listen to historical stories and compare daily life in the past and present.

2.1.2 Identify changes that have occurred in the local and/or regional community.
   Example: Use maps, photographs, or stories to examine changes in architecture, business, industry, farming, transportation, work, or use of leisure time.

2.1.3 Identify individuals who had an impact on the local or regional communities.
   Examples: Some communities are named for important individuals, such as Abraham Lincoln (Lincoln City).

2.1.4 Explain the meaning of community celebrations and traditions.
   Example: School celebrations, such as "Grandparents Day" or "Red, White, and Blue Day."

Chronological Thinking, Comprehensions

2.1.5 Develop a simple time line of important events in their own lives.
STANDARD 2

Civics and Government

Students will explain why communities have government and laws and demonstrate that people in the United States have both rights and responsibilities.

Foundations of Government

2.2.1 Discuss the rights and responsibilities of citizens in the school and the community.
Example: Students have the right to feel and be safe at school, but they have the responsibility to follow school safety rules.

Functions of Government

2.2.2 Explain why it is necessary for the community to have government.
Example: Without government, people who are strong might take advantage of people who are weak. Government provides order, protects rights, and helps people feel secure.

2.2.3 Identify community leaders, such as the city council or town board.

Roles of Citizens

2.2.4 Identify real people and fictional characters who were good leaders and good citizens, and explain the qualities that make them admirable, such as honesty, and trustworthiness.

2.2.5 Explain the roles people in the community have in making and changing laws.
Example: People in the community vote in elections, run for office, attend community meetings, and voice their opinions.

STANDARD 3

Geography

Students will locate their community, state, and nation on maps and globes, identify major geographic characteristics of their local community, and explore geographic relationships between their community and other places.

The World in Spatial Terms

2.3.1 Use the cardinal* and intermediate directions* to locate places on maps, and places in the classroom, school, and community.
*Cardinal directions: North, South, East, and West
*Intermediate directions: Northeast, Southeast, Northwest, Southwest

*Example: Make a compass rose on the classroom floor with masking tape and use it to locate things in the classroom.

2.3.2 Identify the absolute* and relative location* of places in the school and community setting using a simple grid map.
*Absolute location: The exact location of a place or object
*Relative location: The location of something in relationship to other places and things
*Example: The street address of the school is a type of absolute location. Its relative location might be described as “across the road from the fire station,” or “near the river.”

2.3.3 Locate the local community and the United States on maps and globes.

Places and Regions

2.3.4 Identify places that are nearby or related to the local community.

*Examples: Communities in parts of northern Indiana may be near Lake Michigan. Communities in southeastern Indiana may be across the Ohio River from Louisville or Cincinnati.

Physical Systems

2.3.5 Identify map symbols for land and water forms, and give examples of these physical features in the local community.

Human Systems

2.3.6 Identify map symbols of cultural or human features, such as roads, highways, and cities, and give examples from the local region.

Environment and Society

2.3.7 Use a variety of information resources* to identify ways that the physical environment influences human activities in the community.
*Information resources: Print media, including books, magazines, and newspapers
Electronic media, including radio, television, web sites, and data bases.
*Example: Picture books, magazines, and Internet maps can be used to show availability of water, fertility of soils, hilly or flat land, and types of climate.

Grade Two
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STANDARD 4

Economics

Students will describe how people in a community use productive resources, specialize in different types of jobs, and depend on each other to supply goods and services.

2.4.1 Define the three types of productive resources (human resources*, natural resources*, capital resources*) and identify productive resources used to produce goods and services in the community.
   *Human resource: Any human effort used in production
   *Natural resources: Resources that occur in nature that are used in production
   *Capital resources: Goods, such as tools, buildings, and machines, used in production

2.4.2 Identify community workers who provide goods* and services* for the rest of the community, and explain how their jobs benefit people in the community.
   *Goods: Objects, such as food or a toy, that can satisfy people’s wants
   *Services: Actions that a person does for you, such as hair cutting provided by a barber or hair stylist, or dental care provided by a dentist

2.4.3 Explain that a price is what people pay when they buy a good or service and what people receive when they sell a good or service.

2.4.4 Research goods and services produced in the local community and describe how people may be both producers* and consumers*.
   *Producers: People who use productive resources to provide goods or services
   *Consumers: People who use goods or services

2.4.5 Explain that because of scarcity*, people must make choices and incur opportunity costs.
   *Scarcity: The idea that resources are limited in relation to people’s wants
   *Opportunity cost: In making a choice, opportunity cost is the next best alternative you do not choose.

2.4.6 Define specialization* and identify specialized jobs in the school and community.
   *Specialization: Performance of specific tasks or jobs
   Example: Teachers, school nurses, and firefighters specialize in particular kinds of jobs.

2.4.7 Explain why people trade* for goods and services and explain how money makes trade easier.
   *Trade: The voluntary exchange of goods and services
STANDARD 5

Individuals, Society, and Culture

Students will explain how local communities are made up of a variety of individuals and groups, identify cultural traditions in their own locality, and use a variety of information resources to learn about their own community and other cultures.

2.5.1 Identify some of the responsibilities that individuals have to themselves and others.
Example: Students have responsibilities as learners, such as completing work, trying to improve, helping others to learn.

2.5.2 Explain how individuals are members of many different groups, and compare and contrast the expectations of behavior in different groups.

2.5.3 Compare the ways people learn traditions* in different cultures.
*Tradition: A practice that is handed down from one generation to another.
Example: A child in Japan might attend a special class to learn the tea ceremony. Another child might learn a tradition from a family member.

2.5.4 Explain how changes in technology have influenced various traditions.
Example: In the past people entertained themselves and others with storytelling. Today, people entertain themselves by watching television and discussing with others what they have seen.

2.5.5 Identify people of different ages, cultural backgrounds, traditions, and careers, and explain how they contribute to the community.
Appendix E

Language Arts
Indiana Academic Standards
Dear Student,

The world is changing fast. In order for you to succeed in school, at work, and in the community, you will need more skills and knowledge than ever before.

Getting in shape academically is the single most important thing you can do to prepare for a successful future.

This booklet of academic standards clearly spells out what you should know and be able to do in each subject, at your grade level. Examples are given to help you understand what is required to meet the standards. Please review this guide with your teachers and share it with your parents and family.

Whether you grow up to be a surgeon, computer technician, teacher, or airplane mechanic, learning never stops. There will always be a more demanding computer application, a new invention, or a more complex project awaiting you.

To be ready for tomorrow — get in top academic shape today. Use this guide year round to check your progress.

Dear Parent,

The demand is greater than ever for people who can read, write, and speak effectively, analyze problems and set priorities, learn new things quickly, take initiative, and work in teams. Technology has already transported us into a time where the next e-commerce opportunity is limited only by our imagination.

That’s why Indiana has established new academic standards in English/Language Arts and Mathematics. These world-class standards outline what your child should know and be able to do in each subject, at each grade level.

Indiana’s new standards in English/Language Arts and Mathematics were recommended by Indiana’s Education Roundtable and adopted by the State Board of Education. According to Achieve, Inc., these new academic standards are “among the most understandable and rigorous standards in the nation.”

Higher academic standards pose a challenge, but Indiana students have shown they can measure up. Our students know that higher expectations lead to greater rewards — and they’re prepared to work harder. We know that by setting specific goals, everyone wins. Teachers have clear targets, students know what’s expected, and you have detailed information about your child’s strengths and weaknesses.

Your child will begin work toward meeting these new standards immediately. The ISTEP+ state assessments will be aligned to measure these higher expectations and phased in for students in Grades 3, 6, and 8 in 2002 and for students in Grade 10 in 2004.

How can you be sure your child will be ready to meet these challenges? First, keep in mind that learning doesn’t take place only in the classroom. Children spend far more time at home than they do in school. How they spend their time at home can make a difference. That’s where your help is so important.

Here’s a list of ten things you can do to help your child get a good education. Nothing will have a bigger impact on your child’s success than your involvement in his or her education. We hope you use this guide as a tool to help your child succeed today and in the future.

Sincerely,

Frank O'Bannon
Governor

Dr. Suellen Reed
Superintendent of Public Instruction

Stan Jones
Commissioner for Higher Education
10 things you can do to help your child succeed

1. **Build relationships with your child's teachers.** Find out what each teacher expects of your child and how you can help your child prepare to meet those expectations.

2. **Read.** Reading is the foundation for all learning. Read to your young child, encourage your older child to read to you, or spend time together as a family reading. All this helps your child develop strong reading habits and skills from the beginning and then reinforces these habits and skills as your child grows. Reading is one of the most important contributions you can make to your child's education.

3. **Practice writing at home.** Letters, journal entries, and grocery lists are all writing opportunities. Show that writing is a very effective form of communication and that you write for a variety of purposes.

4. **Make math part of everyday life.** Cooking, gardening, paying bills, and even shopping are all good ways to help your child understand and use mathematics skills. Show that there may be many ways to get to the right answer and encourage your child to explain his or her method.

5. **Ask your child to explain his or her thinking.** Ask lots of "why" questions. Children should be able to explain their reasoning, how they came up with the right answer, and why they chose one answer over another.

6. **Expect that homework will be done.** Keep track of your child's homework assignments and regularly look at his or her completed work. Some teachers now give parents a number to call for a recorded message of that day's homework assignments; others put the information on the Internet. If your school doesn't offer these features, talk to the teacher about how you can get this important information. Even if there aren't specific homework assignments, find out how you can stay informed about what your child is working on so that you can help at home.

7. **Use the community as a classroom.** Feed your child's curiosity about the world 365 days a year. Use the library to learn more about the history of your town. A visit to a farmers' market can help your child picture our state's rich agricultural tradition. Take your young child to zoos and parks and your older child to museums and workplaces to show how learning connects to the real world.

8. **Encourage group study.** Open your home to your child's friends for informal study sessions. Promote outside formal study groups through church or school organizations or other groups, such as the Girl Scouts or Boy Scouts. Study groups will be especially important as your child becomes older and more independent.

9. **Help other parents understand academic expectations.** Use your school newsletter, a PTA or PTO meeting, or just a casual conversation to help other parents understand what academic standards mean for them, their child, and their school and how they can help their child learn at home.

10. **Spend time in the classroom.** The best way to know what goes on in your child's school is to spend time there. If you're a working parent, this isn't easy, and you may not be able to do it very often. But "once in a while" is better than "never."

**Remember:** You are the most important influence on your child. Indiana's Academic Standards give you an important tool to ensure your child gets the best education possible.
Standard 1

READING: Word Recognition, Fluency, and Vocabulary Development

Students understand the basic features of words. They see letter patterns and know how to translate them into spoken language by using phonics (an understanding of the different letters that make different sounds), syllables, and word parts (-s, -ed, -ing). They apply this knowledge to achieve fluent (smooth and clear) oral and silent reading.

Phonemic Awareness

- Demonstrate an awareness of the sounds that are made by different letters by distinguishing beginning, middle, and ending sounds in words; rhyming words; and clearly pronouncing blends and vowel sounds.

Decoding and Word Recognition

- Recognize and use knowledge of spelling patterns (such as cut/cutting, slide/sliding) when reading.
- Decode (sound out) regular words with more than one syllable (dinosaur, vacation).
- Recognize common abbreviations (Jan., Fri.).
- Identify and correctly use regular plural words (mountain/mountains) and irregular plural words (child/children, mouse/mice).
- Read aloud fluently and accurately with appropriate changes in voice and expression.

Vocabulary and Concept Development

- Understand and explain common antonyms (words with opposite meanings) and synonyms (words with the same meanings).
- Use knowledge of individual words to predict the meaning of unknown compound words (lunchtime, lunchroom, daydream, raindrop).
- Know the meaning of simple prefixes (word parts added at the beginning of words such as un-) and suffixes (word parts added at the end of words such as -ful).
- Identify simple multiple-meaning words (change, duck).
Standard 2

READING: Reading Comprehension

Students read and understand grade-level-appropriate material. They use a variety of comprehension strategies, such as asking and responding to essential questions, making predictions, and comparing information from several sources to understand what they read. The selections in the Indiana Reading List (available online at www.doe.state.in.us/standards/readinglist.html) illustrate the quality and complexity of the materials to be read by students. In addition to their regular school reading, at Grade 2, students read a variety of grade-level-appropriate narrative (story) and expository (informational) texts (such as grade-level-appropriate classic and contemporary literature, poetry, children’s magazines and newspapers, dictionaries and other reference materials, and online information).

Structural Features of Informational and Technical Materials

- Use titles, tables of contents, and chapter headings to locate information in text.

Comprehension and Analysis of Grade-Level-Appropriate Text

- State the purpose for reading.
  
  Example: Compare similar stories from different cultures, such as Little Red Riding Hood and Lan Po Po (Chinese version). Read an informational text about pets to decide what kind of animal would make the best pet.

- Use knowledge of the author’s purpose(s) to comprehend informational text.
  
  Example: Read an informational text that compares different people, animals, or plants, such as Gator or Croc by Allan Fowler.

- Ask and respond to questions to aid comprehension about important elements of informational texts.
  
  Example: After reading a short account about the first man on the moon, ask and answer why, what if, and how questions to understand the lunar landing.

- Restate facts and details in the text to clarify and organize ideas.
  
  Example: Summarize information learned from a text, such as detail about ant colonies stated in Ant Cities by Arthur Dorros or reported about spider webs in Spider Magic by Dorothy Hinshaw Patent.

- Recognize cause-and-effect relationships in a text.
  
  Example: Read an informational book that explains some common scientific causes and effects, such as the growth of a plant from a seed or the effects of different weather patterns, such as too much snow or rain at one time causing flooding.

- Interpret information from diagrams, charts, and graphs.
  
  Example: Use a five-day weather chart or a weather chart on the Internet to determine the weather for the coming weekend.

- Follow two-step written instructions.
Standard 3

**READING: Literary Response and Analysis**

Students read and respond to a wide variety of significant works of children's literature. They identify and discuss the characters, theme (the main idea of a story), plot (what happens in a story), and the setting (where a story takes place) of stories that they read. The selections in the [Indiana Reading List](https://www.doe.state.in.us/standards/readinglist.html) (available online at www.doe.state.in.us/standards/readinglist.html) illustrate the quality and complexity of the materials to be read by students.

**Narrative Analysis of Grade-Level-Appropriate Text**

- Compare plots, settings, or characters presented by different authors.
  
  **Example:** Read and compare *Strega Nana*, an old Italian folktale retold by Tomie DePaola, with *Ox-Cart Man* by Donald Hall.

- Create different endings to stories and identify the reason and the impact of the different ending.

  **Example:** Read a story, such as *Fin M'Coul — The Giant of Knockmany Hill*, Tomie DePaola's retelling of an Irish folktale. Then, discuss different possible endings to the story, such as how the story would change if Fin's wife had not helped him or if Fin were not a giant.

- Compare versions of same stories from different cultures.

  **Example:** Compare fairy tales and folktales that have been retold by different cultures, such as *The Three Little Pigs* and the southwestern/Latino version *The Three Little Javelinas* by Susan Lowell, or *Cinderella* and the African version, *Mufaro's Beautiful Daughters* by John Steptoe.

- Identify the use of rhythm, rhyme, and alliteration (using words with repeating consonant sounds) in poetry.

  **Example:** Listen to or read the rhymes for each letter of the alphabet in *A. My Name Is Alice* by Jane Bayer. Tell what effects the writer uses to make the poems fun to hear.

Standard 4

**WRITING: Writing Process**

Students write clear sentences and paragraphs that develop a central idea. Students progress through the stages of the writing process, including prewriting, drafting, revising, and editing multiple drafts.

**Organization and Focus**

- Create a list of ideas for writing.

- Organize related ideas together to maintain a consistent focus.
WRITING: Writing Process (continued)

Research and Technology

- Find ideas for writing stories and descriptions in pictures or books.
- Understand the purposes of various reference materials (such as a dictionary, a thesaurus, and an atlas).
- Use a computer to draft, revise, and publish writing.

Evaluation and Revision

- Review, evaluate, and revise writing for meaning and clarity.
- Proofread one's own writing, as well as that of others, using an editing checklist or list of rules.
- Revise original drafts to improve sequence (the order of events) or to provide more descriptive detail.

Standard 5

WRITING: Writing Applications
(Different Types of Writing and Their Characteristics)

At Grade 2, students are introduced to letter writing. Students continue to write compositions that describe and explain familiar objects, events, and experiences. Students continue to write simple rhymes and poems. Student writing demonstrates a command of Standard English and the drafting, research, and organizational strategies outlined in Standard 4 — Writing Process. Writing demonstrates an awareness of the audience (intended reader) and purpose for writing.

In addition to producing the different writing forms introduced in earlier grades, Grade 2 students use the writing strategies outlined in Standard 4 — Writing Process to:

- Write brief narratives (stories) based on their experiences that:
  - move through a logical sequence of events.
  - describe the setting, characters, objects, and events in detail.
  
    Example: Write a story about an experience that took place during a certain season in the year: spring, summer, fall, or winter. Tell the story in the order that it happened and describe it in enough detail so that the reader can picture clearly the place, people, and events.

- Write a brief description of a familiar object, person, place, or event that:
  - develops a main idea.
  - uses details to support the main idea.

    Example: Write a descriptive piece on a topic, such as Houses Come in Different Shapes and Sizes.

- Write a friendly letter complete with the date, salutation (greeting, such as Dear Mr. Smith), body, closing, and signature.

    Example: Write a letter to the police department in your town asking if someone can come to your classroom to talk about bicycle safety.
WRITING: Writing Applications (continued)

- Write rhymes and simple poems.
- Use descriptive words when writing.
- Write for different purposes and to a specific audience or person.
  
  Example: Write a description of your favorite book to recommend the book to a friend.

Standard 6

WRITING: Written English Language Conventions

Students write using Standard English conventions appropriate to this grade level.

Handwriting

- Form letters correctly and space words and sentences properly so that writing can be read easily by another person.

Sentence Structure

- Distinguish between complete (When Tom hit the ball, he was proud.) and incomplete sentences (When Tom hit the ball).

- Use the correct word order in written sentences.

Grammar

- Identify and correctly write various parts of speech, including nouns (words that name people, places, or things) and verbs (words that express action or help make a statement).

  Example: Identify the noun and verb in a sentence, such as Maria (noun) and a friend (noun) played (verb) for a long time.

Punctuation

- Use commas in the greeting (Dear Sam) and closure of a letter (Love, or Your Friend) and with dates (March 22, 2000) and items in a series (Tony, Steve, and Bill).

- Use quotation marks correctly to show that someone is speaking.
  
  Correct: "You may go home now," she said.
  
  Incorrect: "You may go home now she said."
WRITING: Written English Language Conventions (continued)

Capitalization

- Capitalize all proper nouns (names of specific people or things, such as Mike, Indiana, Jeep), words at the beginning of sentences and greetings, months and days of the week, and titles (Dr., Mr., Mrs., Miss) and initials of people.

Spelling

- Spell correctly words like was, were, says, said, who, what, why; which are used frequently but do not fit common spelling patterns.
- Spell correctly words with short and long vowel sounds (a, e, i, o, u), r-controlled vowels (ar, er, ir, or, ur), and consonant-blend patterns (bl, dr, st).
  - short vowels: actor, effort, ink, chop, unless
  - long vowels: ace, equal, bind, hoe, use
  - r-controlled: park, supper, bird, corn, further
  - consonant blends: blue, crash, desk, speak, coast

Standard 7

LISTENING AND SPEAKING: Listening and Speaking Skills, Strategies, and Applications

Students listen critically and respond appropriately to oral communication. They speak in a manner that guides the listener to understand important ideas by using proper phrasing, pitch, and modulation (raising and lowering voice). Students deliver brief oral presentations about familiar experiences or interests that are organized around a coherent thesis statement (a statement of topic). Students use the same Standard English conventions for oral speech that they use in their writing.

Comprehension

- Determine the purpose or purposes of listening (such as to obtain information, to solve problems, or to enjoy).
- Ask for clarification and explanation of stories and ideas.
- Paraphrase (restate in own words) information that has been shared orally by others.
- Give and follow three- and four-step oral directions.
Organization and Delivery of Oral Communication

- Organize presentations to maintain a clear focus.
- Speak clearly and at an appropriate pace for the type of communication (such as an informal discussion or a report to class).
- Tell experiences in a logical order.
- Retell stories, including characters, setting, and plot.
- Report on a topic with supportive facts and details.

Speaking Applications

- Recount experiences or present stories that:
  - move through a logical sequence of events.
  - describe story elements including characters, plot, and setting.
- Report on a topic with facts and details, drawing from several sources of information.
Level 1
Grades K – 2
Indiana Reading List

Designed as a companion piece to Indiana’s Academic Standards in English/Language Arts, the following selections of the Indiana Reading List illustrate the quality and complexity of the suggested reading materials for students in Grades K – 2. The Indiana Reading List is not required reading nor is it meant to be all-inclusive. Teachers and parents are encouraged to review the selections to ensure suitability for the individual student.

Fiction: Picture Books and General Fiction
The Adventures of Old Mr. Toad – Burgess, Thornton
Amelia Bedelia (series) – Parish, Peggy
Angela Weaves a Dream – Solád, Michèle
Anno’s Journey – Anno, Mitsumasa
Arthur (series) – Brown, Marc
Baseball in the Barrio – Horenstein, Henry
A Bear Called Paddington (series) – Bond, Michael
Butterfly Boy – Kroll, Virginia
Caps for Sale – Slobodkina, Esphyr
The Cat in the Hat – Dr. Seuss
Corduroy – Freeman, Don
Dinosaur Dream – Nolan, Dennis
The Doorbell Rang – Hutchins, Pat
Flossie and the Fox – McKissack, Patricia
Frog and Toad are Friends (series) – Lobel, Arnold
The Gingerbread Man – Aylesworth, Jim
The Giving Tree – Silverstein, Shel
Goodnight Moon – Brown, Margaret Wise
Grandfather’s Journey – Say, Allen
Green Eggs and Ham – Dr. Seuss
Harold and the Purple Crayon – Johnson, Crockett
Hattie and the Fox – Fox, Mem
Henry and Mudge (series) – Rylant, Cynthia
If You Give a Mouse a Cookie – Numeroff, Laura
Just So Stories – Kipling, Rudyard
Lilly’s Purple Plastic Purse – Henkes, Kevin
The Little Engine That Could – Piper, Watty
Lyle, Lyle Crocodile – Waber, Bernard
Make Way for Ducklings – McCloskey, Robert
Millions of Cats – Gag, Wanda
The Mitten – Brett, Jan
A Mother for Choco – Kasza, Keiko
The Mouse and the Motorcycle – Cleary, Beverly
Now One Foot, Now the Other – de Paola, Tomie
The Polar Express – Van Allsburg, Chris
Rosie’s Walk – Hutchins, Pat
The Snowy Day – Keats, Ezra Jack
Song of the Swallows – Politi, Leo
Stone Soup – McGovern, Ann
Sylvester and the Magic Pebble – Stein, William
The Tale of Peter Rabbit – Potter, Beatrix
Tar Beach – Ringgold, Faith
Ten Black Dots – Crews, Donald
The Three Little Pigs – Kellogg, Steven
There’s an Alligator Under My Bed – Mayer, Mercer
The Ugly Duckling – Andersen, Hans Christian (original author)
The Very Hungry Caterpillar – Carle, Eric
Where the Wild Things Are – Sendak, Maurice
Winnie the Pooh – Milne, A. A.

Folklore/Fairy Tales/Mythology
The Golden Goose – Grimm, Wilhelm and Jacob (original authors)
Goldilocks and the Three Bears – Brett, Jan
The Little Engine That Could – Keats, Ezra Jack
La Cucaracha Martina: A Caribbean Folktale – Moreton, David
Little Red Riding Hood – Grimm, Wilhelm and Jacob
Lon Po Po: A Red Riding Hood Story from China – Young, Ed
Mufaro’s Beautiful Daughters – Steptoe, John
Paul Bunyan – Kellogg, Steven
Pecos Bill – Kellogg, Steven
The Selkie Girl – Cooper, Susan
Stone Soup – Slobodkina, Esphyr
The Story of Johnny Appleseed – Aliki
The Story of Jumping Mouse – Steptoe, John
Three Billy Goats Gruff – Asbjørnsen, Peter Christen
The Village of Round and Square Houses – Grifalconi, Ann

Poetry
The Big Red Barn – Brown, Margaret Wise
Chicken Soup with Rice – Sendak, Maurice
Child’s Garden of Verses – Stevenson, Robert Lewis
The Dragons Are Singing Tonight – Prelutsky, Jack
Eats: Poems – Adoff, Arnold
The Enys Weensy Spider Fingerplays and Action Rhymes – Calmenson, Stephanie & Cole, Joanna
Every Time I Climb a Tree – McCord, David
Flicker Flash – Graham, Joan Bransfield
I Know an Old Lady Who Swallowed a Fly – Rounds, Glen
Questions?

The Indiana Reading List is a suggested reading resource for students and teachers. Check with your local school to see if there is a required reading list. For additional information or questions, call 1.888.544.7837 or visit the Department of Education’s Web site: www.doe.state.in.us/standards.

This document may be duplicated and distributed as needed.
Appendix F

Science

Indiana Academic Standards
Grade 2
Overview

The Indiana Academic Standards 2000 for Science contain six standards. Each standard is described below. On the pages that follow, age-appropriate concepts are listed underneath each standard. These ideas build a foundation for understanding the intent of each standard. When necessary, specific terms are defined for the reader to help clarify the intent of each standard.

Standard 1
The Nature of Science and Technology
It is the union of science and technology that forms the scientific endeavor and that makes it so successful. Although each of these human enterprises has a character and history of its own, each is dependent on and reinforces the other. This first standard draws portraits of science and technology that emphasize their roles in the scientific endeavor and reveal some of the similarities and connections between them. In order for students to truly understand the nature of science and technology, they must model the process of scientific investigation through inquiries, fieldwork, lab work, etc. Through these experiences, students will practice designing investigations and experiments, making observations, and formulating theories based on evidence.

Standard 2
Scientific Thinking
There are certain thinking skills associated with science, mathematics, and technology that young people need to develop during their school years. These are mostly, but not exclusively, mathematical and logical skills that are essential tools for both formal and informal learning and for a lifetime of participation in society as a whole. Good communication is also essential in order to both receive information and disseminate it; to understand other’s ideas as well as have one’s own ideas understood. Writing, in the form of journals, essays, lab reports, procedural summaries, etc., should be an integral component of students’ experience in science.

Standard 3
The Physical Setting
One of the grand success stories of science is the unification of the physical universe. It turns out that all natural objects, events, and processes are connected to each other. This standard contains recommendations for basic knowledge about the overall structure of the universe and the physical principles on which it seems to run. This standard focuses on two principle subjects: the structure of the universe and the major processes that have shaped the planet Earth, and the concepts with which science describes the physical world in general — organized under the headings of Matter and Energy and Forces of Nature. In Grade 2, students learn that change is a continual process.
Standard 4
The Living Environment
People have long been curious about living things — how many different species there are, what they are like, how they relate to each other, and how they behave. Living organisms are made of the same components as all other matter, involve the same kinds of transformations of energy, and move using the same basic kinds of forces. Thus, all of the physical principles discussed in Standard 3 — The Physical Setting, apply to life as well as to stars, raindrops, and television sets. This standard offers recommendations on basic knowledge about how living things function and how they interact with one another and their environment. In Grade 2, students learn that although diverse, living things are dependent on one another and the environment.

Standard 5
The Mathematical World
Mathematics is essentially a process of thinking that involves building and applying abstract, logically connected networks of ideas. These ideas often arise from the need to solve problems in science, technology, and everyday life; problems ranging from how to model certain aspects of a complex scientific problem to how to balance a checkbook.

Standard 6
Common Themes
Some important themes pervade science, mathematics, and technology and appear over and over again, whether we are looking at ancient civilization, the human body, or a comet. They are ideas that transcend disciplinary boundaries and prove fruitful in explanation, in theory, in observation, and in design. A focus on Constancy and Change within this standard provides students opportunities to engage in long-term and on-going laboratory and field work, and thus understand the role of change over time in studying the Physical Setting and the Living Environment.
Standard 1
The Nature of Science and Technology

Students are actively engaged in exploring how the world works. They explore, observe, count, collect, measure, compare, and ask questions. They discuss observations* and use tools to seek answers and solve problems. They share their findings.

Scientific Inquiry

2.1.1 Manipulate an object to gain additional information about it.

2.1.2 Use tools, such as thermometers, magnifiers, rulers, or balances, to gain more information about objects.

2.1.3 Describe, both in writing and verbally, objects as accurately as possible and compare observations with those of other people.

2.1.4 Make new observations when there is disagreement among initial observations.

The Scientific Enterprise

2.1.5 Demonstrate the ability to work with a team but still reach and communicate one’s own conclusions about findings.

Technology and Science

2.1.6 Use tools to investigate, observe, measure, design, and build things.

2.1.7 Recognize and describe ways that some materials can be used over again such as recycled paper, cans, and plastic jugs.

*observation: gaining information through the use of one or more of the senses, such as sight, smell, etc.
Standard 2

Scientific Thinking

Students begin to find answers to their questions about the world by using measurement, estimation, and observation as well as working with materials. They communicate with others through numbers, words, and drawings.

Computation and Estimation

2.2.1 Give estimates of numerical answers to problems before doing them formally.

2.2.2 Make quantitative estimates of familiar lengths, weights, and time intervals and check them by measurements.

2.2.3 Estimate and measure capacity using cups and pints.

Manipulation and Observation

2.2.4 Assemble, describe, take apart, and/or reassemble constructions using such things as interlocking blocks and erector sets. Sometimes pictures or words may be used as a reference.

Communication Skills

2.2.5 Draw pictures and write brief descriptions that correctly portray key features of an object.

Standard 3

The Physical Setting

Students investigate, describe, and discuss their natural surroundings. They wonder why things move and change.

The Earth and the Processes That Shape It

2.3.1 Investigate by observing and then describe that some events in nature have a repeating pattern such as seasons, day and night, and migrations.

2.3.2 Investigate, compare, and describe weather changes from day to day but recognize, describe, and chart that the temperature and amounts of rain or snow tend to be high, medium, or low in the same months every year.

2.3.3 Investigate by observing and then describing chunks of rocks and their many sizes and shapes, from boulders to grains of sand and even smaller.
2.3.4 Investigate by observing and then describing how animals and plants sometimes cause changes in their surroundings.

**Matter and Energy**

2.3.5 Investigate that things can be done to materials, such as freezing, mixing, cutting, heating, wetting, etc., to change some of their properties and observe that not all materials respond in the same way.

2.3.6 Discuss how people use electricity or burn fuels, such as wood, oil, coal, or natural gas, to cook their food and warm their houses.

**Forces of Nature**

2.3.7 Investigate and observe that the way to change how something is moving is to give it a push or a pull.

2.3.8 Demonstrate and observe that magnets can be used to make some things move without being touched.

**Standard 4**

**The Living Environment**

Students ask questions about a variety of living things and everyday events that can be answered through observations. They consider things and processes that plants and animals need to stay alive. Students begin to understand plant and animal interaction.

**Diversity of Life**

2.4.1 Observe and identify different external features of plants and animals and describe how these features help them live in different environments.

**Interdependence of Life**

2.4.2 Observe that and describe how animals may use plants, or even other animals, for shelter and nesting.

2.4.3 Observe and explain that plants and animals both need to take in water, animals need to take in food, and plants need light.

2.4.4 Recognize and explain that living things are found almost everywhere in the world and that there are somewhat different kinds in different places.
2.4.5 Recognize and explain that materials in nature, such as grass, twigs, sticks, and leaves, can be recycled and used again, sometimes in different forms, such as in birds’ nests.

**Human Identity**

2.4.6 Observe and describe the different external features of people, such as their size, shape, and color of hair, skin, and eyes.

2.4.7 Recognize and discuss that people are more like one another than they are like other animals.

2.4.8 Give examples of different roles people have in families and communities.

**Standard 5**

**The Mathematical World**

Students apply mathematics in scientific contexts. They use numbers for computing, estimating, naming, measuring, and communicating specific information. They make picture and bar graphs. They recognize and describe shapes and patterns. They use evidence to explain how or why something happens.

**Numbers**

2.5.1 Recognize and explain that, in measuring, there is a need to use numbers between whole numbers*, such as 2 ½ centimeters.

*whole numbers: 0, 1, 2, 3, etc.

2.5.2 Recognize and explain that it is often useful to estimate quantities.

**Shapes and Symbolic Relationships**

2.5.3 Observe that and describe how changing one thing can cause changes in something else such as exercise and its effect on heart rate.

**Reasoning and Uncertainty**

2.5.4 Begin to recognize and explain that people are more likely to believe ideas if good reasons are given for them.
2.5.5 Explain that some events can be predicted with certainty, such as sunrise and sunset, and some cannot, such as storms. Understand that people aren't always sure what will happen since they do not know everything that might have an effect.

2.5.6 Explain that sometimes a person can find out a lot (but not everything) about a group of things, such as insects, plants, or rocks, by studying just a few of them.

**Standard 6**

**Common Themes**

Students begin to observe how objects are similar and how they are different. They begin to identify parts of an object and recognize how these parts interact with the whole. They look for what changes and what does not change and make comparisons.

**Systems**

2.6.1 Investigate that most objects are made of parts.

**Models and Scale**

2.6.2 Observe and explain that models may not be the same size, may be missing some details, or may not be able to do all of the same things as the real things.

**Constancy and Change**

2.6.3 Describe that things can change in different ways, such as in size, weight, color, age, and movement. Investigate that some small changes can be detected by taking measurements.
Appendix G

Articles used to
Write Thesis Introduction
One pervasive feature of most first-grade reading instruction is the presence of three or four ability groups in a class. Children are generally placed in these groups during the second month of first grade and usually remain in the same group for the rest of first grade—and often for the rest of their elementary school years (Hiebert, 1983; Shannon, 1985). Being placed in a bottom group can hinder reading development. For example, Allington (1983) has demonstrated that the reading instruction given to children in bottom groups is often less beneficial than that provided to other groups.

First-grade teachers are aware of the problems with ability groups. They know that some children get placed in these groups because of their limited home literacy experiences and that some children get placed incorrectly because they are inattentive or immature. They know that children who demonstrate progress should be moved, but the distance between where the bottom group children are reading and the level of the next group is often too great for children to bridge the gap. Above all, first-grade teachers recognize how different children are when they enter first grade. Ability grouping is an attempt to meet the needs of a diverse first-grade population.

What we set out to do

The “we” in this case refers to three teachers with a total of 38 years experience teaching first grade. The classroom teacher carried out the daily instruction. The other two collaborators observed in the classroom and assessed how well children were learning. The three of us met regularly to evaluate and plan instruction. We set out to develop a model of first-grade instruction that did not use ability grouping but did meet the diverse needs of a heterogeneous class of first graders.

The children

The school in which we worked is a large
Elementary school in the southeastern United States. There are five first-grade classrooms. One classroom was designated as the high first grade and was given a group of 10 children who were already reading at primer level at the beginning of the school year and two other groups that were ready to begin reading instruction. This high classroom had the best readers.

The other four classrooms were given the remaining range of first graders. Our first grade was one of these four with a mix of children, minus the very top. On all measures, our class was just like the other three mixed first grades. At the beginning of the year, our classroom had 24 children, 12 boys and 12 girls, and included 7 children of different ethnicities and language backgrounds. One child was repeating first grade.

The first six weeks
During the first 6 weeks, process writing was begun, and shared reading with big books and language experience activities were daily occurrences. Children completed the reading activities that were part of the basal reading program. At the end of the 6 weeks, the teacher was asked to decide how she would have grouped the children if she were going to group. The teacher indicated that she would have formed three groups with 9 children in the top group, 5 in the middle group, and 10 in the bottom group.

The assessment
In addition to the teacher's daily observations, we evaluated how well individual children were progressing at particular points in the year. Six weeks into the school year and halfway through the year, we administered to each child the Sand Concepts About Print test (Clay, 1972), a test of letter naming, a test of common beginning sight words, a test to see how many words they could correctly write in 10 minutes, and a sentence dictation task (Clay, 1985). As the class finished each level of the basal, children were tested individually on knowledge of high frequency words and a running record was taken on their ability to read the first story in the next level. An informal assessment was also conducted as the children chose their own books to read. If students were struggling with the text, they were given minimal help in decoding the words. Once children were reading at the level of the basal, they were encouraged to read whatever they chose.

First graders were encouraged to read whatever they chose. Photo by Martha Brown

Non-ability-grouped, multilevel instruction 567
mal reading inventory was administered during the last month of school.

**The instruction**

In addition to having differing entering literacy levels, all children do not learn in the same way. We discussed the various approaches to beginning reading used by each of us across our accumulated 38 years of first-grade teaching and those advocated by various experts. Our discussions led us to the conclusion that in this century there have been four major approaches to beginning reading instruction.

We discussed four major approaches to beginning reading instruction.

One is the basal approach. While basals do differ, they have in common an emphasis on gradually increasing levels of difficulty and on teacher-guided reading of short selections. A second approach is a phonics approach, in which the main emphasis is on learning letter-sound relationships. In a literature approach, children select what they want to read from a wide variety of books and teachers provide whatever help children need while they read real books from the very beginning. In a writing approach to beginning reading, the first material children generally read is their own writing and that of their classmates.

Our discussions of these four approaches reminded us of the benefits of each. Basal instruction provides teachers with multiple copies of reading material whose difficulty level is gradually increased, and which the teacher can use to guide children's comprehension and strategy development. Phonics instruction is important because one of the big tasks of beginning readers is to figure out how our alphabetic language works (Adams, 1990). The reading of real books is the ultimate aim of reading instruction and children who read real books understand why they are learning to read and what reading really is. Writing is another authentic activity and children who write become more fluent in reading (Clarke, 1988).

In discussing these approaches, we were also reminded of children we had taught who seemed to do better in one approach or another and we concluded that, in general, combination approaches to beginning reading seem to be the most effective (Adams, 1990; Bond & Dykstra, 1967). We thus decided that our instructional program would have blocks that emphasized the four major approaches.

**The writing block.** The writing block began with a 5-minute minilesson. The teacher wrote a short piece on an overhead transparency. As the teacher wrote, she thought aloud about what she was writing and how she was writing it. Writing conventions and invented spelling were modeled daily. Next, the children wrote about whatever they chose and spelled words as best they could. When a child had written three pieces, she selected a piece to publish. The teacher worked with the child on revising and editing and the piece was "published" in a simple folded, stapled covered book. Each writing block ended with a 5-minute period in which children shared what they had published or a piece in progress.

**The basal block.** All children were provided with daily guided reading instruction from a basal reading series. The teacher used suggestions in the manual, adapting them as necessary. Most basal instruction began with a whole-class format, then moved into a partner format for reading or workbook activities, and then back to a whole-class format for discussion of what was read or feedback on workbook pages. During partner reading, children took turns reading the pages of the story. For partner workbook activities, they "played school." On one page, partner A was the teacher and partner B the student. On the next page, the partners switched roles. The partners were changed from time to time but the goal was to have children paired with children they liked to work with and to have the less proficient readers working with someone who was a little bit higher.

The most difficult decision we had about the basal block was how to pace our instruction. When children are ability grouped for reading, the teacher normally paces the instruction according to the needs of the group. This was impossible because the whole class of diverse children was reading the basal to-
gether. We decided to pace our instruction to finish the entire first-grade program by the end of first grade. We spent approximately 6 weeks in readiness, 4 weeks in each preprimer, 9 weeks in the primer, and finished the first reader during the last 9 weeks of school.

The real books block. Self-selected reading and teacher read-aloud were the major activities during the real books block. Each day the teacher read aloud to the children and children had time to select and read whatever they chose. There was a wide variety of books in the room from which children could choose. Children chose to read trade books (including big books), books they had published, and even (occasionally) a favorite story from their basal readers. Children read by themselves or with a friend and they were encouraged to talk about what they were reading.

The working with words block. Two major activities took place during the daily working with words block—Word Wall and Making Words (Cunningham, 1991). The Word Wall is a bulletin board to which the teacher added approximately five words each week. These were common words that had been introduced in their basal reading lesson. The words were written on colored pieces of paper and attached to the wall so that they were in alphabetical order (by first letter only). New words were added each week, and children practiced learning to read and spell these words through a daily chanting, clapping, writing activity. Each day, the teacher and selected children called out five words from the entire wall. After a word was called and pointed to, the children rhythmically chanted and clapped the letters in the word. They then wrote the word and chanted and clapped it again to check what they had written.

Making Words is an activity in which children are given a limited number of letters and manipulate these letters to make words. The teacher calls out the word to be made, children make the word with their individual letters at their desks, and one child makes the word with large letter cards along the ledge of the chalkboard.

The 15-minute activity starts by having the children make small words and ends with bigger ones. Often the last word requires use of all the letters. From the letters d, p, s, r, t, and e the children made the two-letter word is, the three-letter words red, rid, dip, and sip, the four-letter words ride, side, rise, and drip, the five-letter words drips and pride, and finally were challenged to arrange all six of their letters to spell spider (not coincidentally, the subject of a story they were about to read during the basal block).

After using the letters to make the words, the teacher led the children to sort the words according to a variety of semantic and letter-sound relationships and patterns.

Adjustments and additions

After the first 6 weeks, the writing, basal, real books, and working with words blocks occurred daily and the 2-hour language arts time was fairly evenly divided among these. In addition to the four consistent blocks in which all children participated, some one-to-one and small group instruction was provided.

Yolanda demonstrated very little print awareness and extremely limited reading and writing ability when tested at the end of 6 weeks of shared reading and language experience. She could not track print, did not know all letter names, and could read and write only her name. The teacher provided 10 minutes of individual instruction after lunch, during which time Yolanda dictated a book about herself, read the book, cut sentences from it into words, reordered words to make new sentences, and engaged in other concept-of-print activities. By the time Yolanda demonstrated that she could track print and began to learn some words from her language experience stories, the class was reading in the second preprimer. The teacher helped Yolanda read the first preprimer while the rest of the class was in the second preprimer. With individual instruction, Yolanda read the second preprimer while simultaneously she and the rest of the class were reading the third preprimer.

When we tested the children at the end of the preprimers, five children were not able to read at instructional level at the beginning of the primer. These children continued to read in the primer with the rest of the class, but a daily 15-minute small group activity was added in which children read through several sets of preprimers from other basal programs. This was not an ability group because membership in this small group changed daily and every child in the class read with this group at least one day a week. The five children whose
needs instigated the formation of this group
read with the group more often—but not every
day.

**How well it worked**

Whenever you try anything different in a
classroom, you must decide how you will
know if it worked. In this study, we wanted to
figure out how to organize a first-grade class­
room to meet the needs of diverse children
without using ability grouping, and if this new
organization was indeed better for that diverse
group of children. Specifically, we wanted to
know if our organization had allowed more
learning opportunities for children who would
have been placed in the bottom group, without
hindering the top readers. We decided to
judge our organization successful if (1) some
of the children who would have been in the
bottom group had instructional levels at the
first-reader level or higher, and (2) some of
the children who would have been in the top
group were reading above second-grade level.

About a month before the end of the year,
we administered an IRI to each child (Johns,
1988). Although we had been doing ongoing
assessment all year, we wanted to use some
standardized measure of reading to determine
the instructional levels of our first graders.

In the Figure, the letters T, M, and B rep­
resent children who would have been placed
in the top, middle, or bottom groups. One of
the bottom group children had moved. The
child designated N(R) was a new student who
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the children who would have been in the top
group were reading above second-grade level.

Based on these results, we believe that
our non-ability-grouped instruction was very
effective for the bottom children and did not
hinder the progress of the top children. Four
of the children who would have been placed in
the bottom group (including Yolanda) were
reading at first reader or second-grade level
and one read at fourth-grade level. No child
who would have been placed in the top group
read below third-grade level and more than
half of the top children read at fifth- or sixth-
grade level.

We are concerned about the three children
who demonstrated an instructional level of pre­
primer on the IRI. While we did not expect all
low readers to be on grade level, we did think
that all our children were quite fluent with
primer-level materials in the classroom. An
analysis of their profiles showed that all three
children were very fluent on the preprimer
passages, but could not meet the word identi­
fication criterion on the primer passage. The
IRI passage of approximately 100 words is
printed all on one page and there are no pic­
tures. No words are introduced before the
children read the passage. These three readers
clearly had not yet developed the decoding
skills required to read a passage at the primer
level with no picture or other support, but they
were able to read at this level in their class­
room.

We were pleased with the performance of
our two repeaters, since we know from past
experience that first-grade repeaters start out
ahead but then tend to fall behind again as the
year goes on.

One of the problems with ability grouping
is that children in the bottom group become
isolated and sometimes ostracized by the rest
of the class. Our observations of the children
suggested that their friendships cut across
ability levels, but we wanted to check this out.
Before beginning the IRI with each child, we
asked each to name his or her three best
friends in the classroom. Every child was
chosen as a best friend by at least one child, and
of the 45 (15 times 3) choices available to the
15 top and middle children, children who
would have been in the bottom group were
chosen 13 times. These data confirmed our
observations that class friendships did not fol­
low ability lines.

A final measure of the effectiveness of
this organization comes from the other first-

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<thead>
<tr>
<th>Results of IRI's of our first graders</th>
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<tbody>
<tr>
<td>6th grade</td>
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<td>5th grade</td>
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<td>4th grade</td>
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<td>3rd grade</td>
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<td>2nd grade</td>
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<td>Book one</td>
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<td>Primer</td>
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chosen 13 times. These data confirmed our
observations that class friendships did not fol­
low ability lines.

A final measure of the effectiveness of
this organization comes from the other first-
grade teachers in this school. We kept our changes very quiet for most of the year, but as we grew more confident in what we were doing, we invited the other first-grade teachers in to observe. All four teachers chose to use this organization during the next school year! We believe that this voluntary commitment to change is the best indicator of how well our new organization worked.

Why it worked

Finally, we must consider why it worked. The major reason is that the classroom teacher was excellent and knew how to set up a positive classroom environment, how to carry out high quality instruction day in and day out, and how to observe children and determine what they need. But the teacher insisted that her top readers never read so well before and that she had never managed to get so many bottom children reading at or above grade level.

Besides our having a good teacher, we believe there are four other causes for our success. First, the four blocks represented a variety of ways of approaching reading and writing. When the teacher was asked which blocks she considered most and least important, she responded. "For which child?" Watching the children move through the writing, basal, real books, and working with words blocks each day, it was obvious that some children were much more successful, attentive, and turned on during one of these blocks. Some blocks are more or less important for some children, but for a class of diverse children, they are all important.

Second, adjustments were made based on observation and assessment data. There is little possibility that Yolanda would have learned to read at second-grade level had we not recognized her print tracking and other problems and provided the 10 minutes daily of individual instruction. Also, we believe that it was critical to have the 15-minute, variable-membership, small group reading pre-primers while the whole class proceeded through the primer (and later reading primers while the whole class proceeded through book one).

Third, the children spent almost no time on traditional seatwork. Even the workbook pages were completed with partners.

Finally, all children were given the same kind of meaning-based reading and writing instruction. They had models of good reading and writing and were expected to learn to read and write.

We are excited about this organization and have set ourselves some new challenges for next year. We plan to work on informal assessment measures that all our first-grade teachers can use to decide what modification and adjustments to make and when. Finally, we plan to see how a teacher might carry out non-ability-grouped, multilevel instruction in second, third, and fourth grades.

References

Nonability-grouped, multilevel instruction: Eight years later

This article reports on the long-term development, implementation, and assessment of a framework for beginning reading instruction, best known as the Four Blocks approach.

Eight years ago, the three of us embarked on a journey. We wanted to figure out how to provide reading instruction to children with a wide range of entering levels without putting them in fixed ability groups. The results of our first year were published in this journal (Cunningham, Hall, & Defee, 1991). Since that first year we have extended our efforts across grade levels, schools, and states. In this article, we will share an updated model of multilevel, multimethod instruction that has come to be called the Four Blocks.

Teachers usually try to meet the needs of struggling readers by putting them in a “bottom” reading group and pacing their instruction more slowly. The data on this method does not hold out much hope that it will ultimately solve the problem. Children who are placed in the bottom group in first grade generally remain there throughout their elementary school careers and almost never learn to read and write up to grade-level standards (Allington, 1983, 1991).

Another variable that concerned us was the phenomenon of the “pendulum swing.” Especially in the U.S., various approaches to reading come in and out of fashion. Eight years ago when we began this endeavor, literature-based reading instruction (commonly referred to as “whole language”) was the recommended approach. Today, this approach is losing favor, and school boards are mandating phonics. The search for the “best way to teach reading” denies the reality or possibility of individual differences. Children do not all learn in the same way and consequently, approaches with particular emphases are apt to result in some children learning to read, and others not. When the pendulum swings to another approach, we may pick up some of those who weren’t faring too well under the previous emphasis but lose some who were. Thirty years ago, the First-Grade Studies, which were carried out to determine the best approach for reading instruction, concluded that the teacher was more important than the method but that, in general, combination approaches worked better than any single approach (Bond & Dykstra, 1967, 1997).

This article describes the development of a framework for beginning reading instruction that had two goals. The first goal was to meet the needs of children with a wide range of entering literacy levels without putting them in ability groups. The second goal was to avoid the pendulum swing and find a way to combine the major approaches to reading in-
struction. Since our first year in which we developed the instructional framework in one first-grade classroom, the model has been refined and implemented in numerous primary classrooms.

**The instructional framework**

The instructional framework is the heart of our program. The basic notions underlying this framework are quite simple, but its implementation is complex. There is considerable variation depending on the grade level and how early or late in the year it is, individual teaching styles, and the particular makeup of the class. In this section we will describe the instruction and provide some sense of the variety that allows its implementation in a wide range of classrooms.

In order to meet the goal of providing children with a variety of avenues to becoming literate, language arts instructional time is divided fairly evenly between four major historical approaches to reading instruction. The 2¼-2½ hours allotted to language arts is divided among four blocks—Guided Reading, Self-Selected Reading, Writing, and Working With Words—each of which gets 30-40 minutes.

To meet our second goal of providing for a wide range of literacy levels without grouping the children by ability, we make the instruction within each block as multilevel as possible. For each block, we will briefly describe some of the formats, materials, cooperative arrangements, etc., we use to achieve this goal of multilevel instruction.

**Guided reading.** In our first several years, we called this the basal block because this was the time when the basal reader drove our instruction. In recent years, teachers have branched out to use other materials in addition to or instead of the adopted basal reader. Depending on the time of year, the needs of the class, the personality of the teacher, and the dictates of the school or school system, guided reading lessons are carried out with the adopted basal, basal readers from previously adopted series, multiple copies of trade books, Big Books, and various combinations of the above. The purposes of this block are to expose children to a wide range of literature, teach comprehension strategies, and teach children how to read in materials that become increasingly more difficult.

Early in first grade, most of our guided reading time is spent in shared reading of predictable books, read together in a variety of choral, echo, and other shared-reading formats. Comprehension activities often include “doing the book” in which children are given roles and become the characters as the rest of the children read the book. Little books based on the Big Books are read and reread with partners, then individually or in small groups.

The first goal was to meet the needs of children with a wide range of entering literacy levels without putting them in ability groups.

As the year goes on, the shared reading of Big Books continues to be a part of guided reading. Other books, not big and not predictable, are added. These books might be part of a basal series or multiple copies of trade books. The emphasis shifts from reading together to reading with partners or alone. Instead of reading the selection first to the children, teachers often take children on a “picture walk” through the book, leading the children to name things in the pictures and make predictions, and pointing out a few critical and potentially difficult vocabulary words students might encounter as they read the selection. Children then read the selection individually, with a partner, or in a small flexible group with the teacher. The class reconvenes, discusses the selection, and then sometimes reads it chorally or in some other whole-class format (not round-robin reading, however). Comprehension strategies are taught and practiced. Predictions made before reading are checked. Story maps and webs are completed.

The next reading of the selection might include a writing activity done by some children individually, some with partners, and others in a group guided by an adult. Often the next reading is an acting out of the selection, with
various children playing different parts as the rest of the class reads or tells the story.

Guided reading is the most difficult block to make multilevel. Any selection is going to be too hard for some children and too easy for others. We don't worry anymore about those children for whom grade-level guided reading material is too easy because the other three blocks provide many beyond-grade-level opportunities. In addition, our results have consistently indicated that students who begin first grade with high literacy levels continued to read well above grade level at the end of the year.

Children do not all learn in the same way and consequently, approaches with particular emphases are apt to result in some children learning to read, and others not.

We do, however, worry about those students for whom grade-level selections are too challenging. To make this block meet the needs of children who read below grade level, teachers make a variety of adaptations. Guided reading time is not spent in grade-level material all week. Rather, teachers choose two selections—one grade level and one easier—to read each week. Each selection is read several times, each time for a different purpose in a different format. Rereading enables almost all children to achieve fluency by the last reading. Children who need help are not left to read by themselves but are supported in a variety of ways. Most teachers use reading partners and teach children how to help their partners rather than do all their reading for them. While some children read the selection by themselves and others read with partners, teachers usually meet with small groups of children. These teacher-supported groups change daily and do not include only the low readers.

Self-selected reading. Although historically it has been called individualized reading or personalized reading (Veatch, 1959), many teachers now label their self-selected reading time Readers' Workshop (Routman, 1995). Regardless of what it is called, self-selected reading is that part of a balanced literacy program when children choose what they want to read and what parts of their reading they want to respond to. Opportunities are provided for children to share and respond to what is read. Teachers hold individual conferences with children about their books.

In our classrooms, the self-selected reading block includes a teacher read-aloud. The teacher reads to the children from a wide range of literature Next, children read "on their own level" from a variety of books the teacher has gathered and keeps on a bookshelf or, more popularly, in dishpans or buckets. The teacher selects books for the classroom library on themes the class is studying, easy and difficult library books, old favorites, new easy predictable books, etc. Every effort is made to have the widest possible range of genre and levels available. While the children read, the teacher holds conferences with and takes anecdotal records on several children each day. The block usually ends with one or two children sharing their books with the class in a "Reader's Chair" format.

Self-selected reading is, by definition, multilevel, because children choose what they want to read. These choices, however, can be limited by the reading materials available and how willing and able children are to read from the available resources. Fielding and Roller (1992) sum up the problem many struggling readers have with self-selected reading:

While most of the children are quiet, engaged, and reading during independent reading times, there are always a few children who are not. They are picking up spilled crayons, sweeping up shavings from the pencil sharpener, making trips to the water fountain, walking back and forth alongside bookcases, opening and closing books, and gazing at pictures. (p. 678)

Many of the children who "wander round" during self-selected reading time are the ones whose reading ability is limited. Fielding and Roller conclude that:

Either they do not know how to find a book that they can read, or there is no book available that they can read or they do not want to read the books they can read. These children remind us of Groucho Marx: They refuse to become a member of any club that will accept them. In book terms, they cannot read the books they want to read and they do not want to read the books they can read. (p. 679)
Fielding and Roller go on to make excellent and practical suggestions about how to support children in reading books they want to read that, without support, would be too difficult and about how to make the reading of easy books both enjoyable and socially acceptable. These suggestions include keeping children determined when a book is just right, encouraging children to read books that the teacher has read aloud, encouraging children to read with a friend and to do short readings of books they enjoy. The modeling of the enjoyment to be found in easy books, setting up programs in which children read to younger children and thus have a real purpose for reading and practicing easy books, and making lots of informational picture books available. Following these suggestions makes the self-selected reading time more multilevel. We have incorporated many of these ideas in our self-selected reading block.

In addition, we steer our more advanced readers toward books that challenge them. We also teach our early first graders that there are three ways to read. You can "pretend read" by telling the story of a familiar story book. You can "picture read" by looking at a book about real things with lots of pictures and talking about all the things you see in the pictures. And you can read by reading all the words. Early in the year, we model all types of reading and discuss how children at their age would probably read different books.

The Three Billy Goats Gruff is a book you could pretend read because you know the story so well. Let’s practice how you might pretend read it if you chose it for self-selected reading time.

How would you read this book about dinosaurs? It’s got lots and lots of words in little print, but you could read it by picture reading. Let’s practice picture reading.

Now, here is an alphabet book. You see just one word and it goes with the picture. You can probably read this book by reading the words.

Once children know that there are three ways to read books, no child ever says, “I can’t read yet!”

Writing. The writing block is carried out in Writers’ Workshop fashion. (Calkins, 1994; Graves, 1995; Routman, 1995). It begins with a 10-minute minilesson. The teacher sits at the overhead projector or with a large piece of chart paper. The teacher writes and models all the things writers do (although not all on any one day). The teacher thinks aloud—deciding what to write about—and then writes. While writing, the teacher models looking at the Word Wall for troublesome words and inventing the spelling of a few big words. The teacher also makes a few mistakes relating to the items currently on the editor’s checklist. When the piece is finished or during the following day’s minilesson, the children help the teacher edit the piece for the items on the checklist.

Next the children go to their own writing. They are all at different stages of the writing process—finishing a piece, starting a new piece, editing, illustrating, etc. While the children write, the teacher confers with individuals, helping them get pieces ready to publish. In most classrooms, teachers allow children to publish a piece when they have completed three to five good first drafts. The child chooses the one to publish and then conferences with the teacher. At this point, we fix all spelling errors and tidy it up mechanically, because we want a published piece that the other children can read easily—and of which the author will be proud. This block ends with Author’s Chair in which several students each day share first drafts or published books.

Writing is the most multilevel block because it is not limited by the availability or acceptability of appropriate books. If teachers allow children to choose their own topics, accept whatever level of first-draft writing each child can accomplish, and allow them to work on their pieces as many days as needed, all children can succeed in writing. One of the major tenets of process writing is that children should choose their own topics. When children decide what they will write about, they write about something of particular interest to them and consequently something that they know about. Now this may seem like belaboring the obvious, but it is a crucial component in making process writing meet the needs and interests of all children. When everyone writes about the same topic, the different levels of children’s knowledge and writing ability become painfully obvious.

In addition to teacher acceptance of student work, children choosing their own topics, and not expecting finished pieces each day, Writers’ Workshops include two teaching opportunities that promote the multilevel nature of process writing—minilessons and publishing conferences. In minilessons, the teacher
writes and thinks aloud. The children get to see how writers think. In these daily short lessons, teachers show all aspects of the writing process. They model topic selection, planning, writing, revising, and editing; they write on a variety of topics in a variety of forms. Some days they write short pieces. Other days, they begin a piece that takes several days to complete. When doing a longer piece, teachers model how to reread what was written previously in order to reestablish the train of thought and continue writing. The mini-lesson contributes to making process writing multilevel when the teacher includes different facets of the writing process. Writes on a variety of topics in a variety of forms, and intentionally composes shorter easier pieces as well as more involved longer pieces.

Another opportunity for meeting the various needs and levels of children comes in the publishing conference. In some classrooms, children do some peer revising and editing and then come to the teacher "editor-in-chief" for some final revision and editing before publishing. As teachers help children publish the pieces they have chosen, they have the opportunity to individualize their teaching. Looking at a child's writing usually reveals both what the child needs to move forward and what the child is ready to understand. The publishing conference provides the "teachable moment" in which both advanced and struggling writers can be nudged forward in their literacy development.

Finally, writing is multilevel because for some children writing is their best avenue to becoming readers. When children who are struggling with reading write about their own experiences and then read it back (even if no one else can read it), they are using their own language and experiences to become readers. Often these children who struggle with even the simplest material during guided reading can read everything in their writing notebook or folder. When children are writing, some children are really working on becoming better writers; others are engaging in the same activity, but for them, writing helps them figure out reading.

Working with words. In the working with words block, children learn to read and spell high-frequency words and learn the patterns that allow them to decode and spell lots of words.

The first 10 minutes of this block are usually given to reviewing the *Word Wall* words. *Word Wall* is a display of high-frequency words categorized alphabetically by first letter only. The words are written with thick black marker on colored paper. The teacher adds 5 words a week until there are 110–120 words on the wall. Students practice new and old words daily by looking at them, saying them, clapping or snapping the letters, writing the words on paper, and self-correcting the words with the teacher.

Practice with the high-frequency words on the wall takes the first 10 minutes of the words block every day. The remaining 15–25 minutes is given to activities that help children learn to decode and spell. Three of the most popular activities are described next.

*Rounding up the rhymes* follows the guided reading of a selection or a book the teacher has read aloud at the beginning of the self-selected reading time. Here is an example using *Ten Little Dinosaurs* (Schnetzler, 1996).

The first (and often second) reading of anything should be focused on meaning and enjoyment. *Ten Little Dinosaurs* describes in rhyme the antics of 10 different dinosaurs.

Five little dinosaurs playing in the street.
Ankylosaurus yelled, "A car to beat!"
He charged into the street: squeal, screech, bleet, spleet.
No more dinotanks playing in the street.

Revisiting the book during the words block, we draw the children's attention to the rhyming words. As we read each page, we encourage the children to chime in and to listen to the rhymes they are saying. As children tell us the rhyming words, we write them on index cards and put them in a pocket chart. Here are the rhyming words "rounded up" from the first several pages:

```
bed bike mooth river peak street
head spike tooth aquiver beak beat
said trike booth shiver shriek spleet
```

Next, we remind children that words that rhyme usually have the same spelling pattern. Children then underline the spelling patterns in each set of rhymes and decide whether or not they are the same. Because we want rhymes with the same spelling pattern, we discard *bed*, *head*, and *said: shriek and beat*. We now have
five sets of words that rhyme and have the same spelling pattern in our pocket chart:

bike  mood  river  peak  street
spike  tooth  aqiver  beak  spleer
trike  booth  shiver

In the final part of this activity children use these words to read and write some other words. This is the transfer step and is critical to the success of this activity for children who learn only what we teach. We begin the transfer part of this activity by telling children something like,

You know that when you are reading books and writing stories, there are many words you have never seen before. You have to figure them out. One way many people figure out how to read and spell new words is to see if they already know any rhyming words or words that have the same spelling pattern. I am going to write some words, and you can see which words with the same spelling pattern will help you read them. Then, we are going to try to spell some words by deciding if they rhyme with any of the words in our pocket chart.

Here are the new words the children read and spelled based on their new understanding of rhymes and spelling patterns at the conclusion of this activity:

bike  liver  leak  sweet

Making words (Cunningham & Cunningham, 1992; Cunningham & Hall, 1997) is an active, hands-on, manipulative activity in which children learn how to look for patterns in words and how changing just one letter or letter order changes the whole word. The children are given the six to eight letters that will form the final word. The lesson begins with two-letter words, then builds to three-, four- and five-letter words until the word that can be made with all the letters is made. Students then sort the words according to a variety of patterns including beginning sounds, endings, and rhymes; they read the sorted words and use them to spell words with similar patterns.

In one lesson, the children had the letters a, i, g, n, s, t. They made these words:

it, in, an, ant, tan, sit, sat, sag, snag, sang, gain, stain, giant

(The word giants was chosen because the children had read a story about a giant during the guided reading block. The last word made is "the secret word" because it always uses all the letters, and children delight in trying to figure out what the secret word can be.)

When all the words were made, the teacher led the children to sort them for rhymes:

it  an  ag  an
it  an  sag  gain
sit  tan  snag  stain

Following the same procedure used in the transfer step of rounding up the rhymes, the teacher helped students use these rhyming words to read and spell other rhyming words they might meet in their reading or need to spell while writing. In this particular lesson, the transfer words were brain, flag, plan, and hit.

Guess the covered word is another popular working with words block activity. Its purpose is to help children practice the important strategy of cross-checking meaning with letter-sound information. For this activity, the teacher writes four or five sentences on the chalkboard, covering a word in each sentence with two sticky notes. Children read each sentence and then make several guesses for the word. There are generally many possibilities for a word that will fit the context, and the teacher points this out. Next, the teacher takes off the first sticky note, which always covers all the letters up to the vowel. Guesses that don’t begin with these letters are erased, and new guesses that both fit the meaning and start with all the right beginning letters are made. When all the guesses that fit both meaning and beginning sounds have been written, the entire word is revealed. Most teachers adjust the length of their sticky notes so that children also become sensitive to word length.

Watching children doing the daily Word Wall practice, you would assume that they are all learning the same thing—how to spell words. But what they are doing externally may not reveal what they are processing internally. Imagine that the five new words added to the wall one week were come, where, they, boy, friend. During the daily Word Wall practice, children who have already learned to read them are learning to spell them. Other children, however, who require lots of practice with words, are learning to read them.

While rounding up the rhymes, some children are still developing their phonemic awareness as they decide which words rhyme and are learning that rhyming words usually—but not always—have the same spelling pattern. As they use the words rounded up to read
and spell new words, some children are practicing beginning letter substitution. Children who already have well-developed phonemic awareness and beginning letter knowledge are practicing the important strategy of using known words to decode and spell unknown rhyming words.

Making words lessons are multilevel in a number of ways. Each lesson begins with short easy words and progresses to longer, more challenging words. Every making words lesson ends by the teacher asking, "Has anyone figured out the word we can make if we use all our letters?" Figuring out the secret word in the limited time available is a challenge to even our most advanced readers. Making words includes even children with very limited literacy who enjoy manipulating the letters and making the words even if they don’t complete them until the word is made by the teacher with the big pocket chart letters. By ending each lesson by sorting the words into patterns and then using those patterns to read and spell new words, we help children of all levels learn to use the word patterns to read and spell other words.

Guess the covered word lessons provide review for beginning letter sounds for those who still need it. The more sophisticated readers consolidate the important strategy of using meaning, all the beginning letters, and word length as cues to the identification of an unknown word.

Connections across the blocks

So far, we have described the blocks as separate entities. In most classrooms, they each have their allotted times, and an observer can tell which block the teacher and children are in. As much as possible, teachers try to make connections from one block to another. Many teachers take a theme approach to teaching. These teachers often select books for guided reading that correlate with their theme. During the writing minilesson when the teacher models writing, he or she often writes something connected to the theme. Some of the books teachers read aloud at the beginning of self-selected reading and some of the books children can choose from are connected to the theme.

Theme words are not put on the Word Wall, which is reserved for high-frequency words. But most teachers have a theme board in addition to the Word Wall. This board changes with each theme and, in addition to pictures, includes theme-related words that children will need as they pursue that theme. Often the secret word in a making words lesson is connected to the theme. Sometimes, the sentences a teacher writes for a guess the covered word lesson relate to the theme.

In addition to theme connections, there are other connections across the blocks. We practice Word Wall words during the words block, but children know that when they are writing, they spell words as best they can unless the word is on the Word Wall. Word Wall words must be spelled correctly.

Rounding up the rhymes occurs during the words block, but the book used usually has been read by the children during guided reading or read aloud by the teacher to begin the self-selected reading block. Sometimes, we do guess the covered word activities by using sticky notes to cover one word on each page of a Big Book. We often introduce vocabulary during guided reading through picture walks, and while reading with small groups, we coach children on how to decode words using picture, context, and letter-sound strategies taught during the words block.

In our minilesson at the beginning of each day’s writing time, we model how to find words on the Word Wall and how to stretch out words and listen for the sounds in more challenging words not available in the room. When we are helping children edit, we praise them for their good attempts and spelling and coach them to use strategies and skills they are learning during the words block.

Support for struggling students

Along with the four blocks, schools and teachers use a variety of formats for providing the extra support needed by children who find learning to read unusually difficult. Some schools have Reading Recovery. Classroom teachers and Reading Recovery teachers report that the Four Blocks classroom instruction and Reading Recovery are very compatible.

Other schools in which the majority of the children need additional support use a program called FROG—Facilitating Reading for Optimum Growth (Hall, Prevatte, & Cunningham, 1995). Special teachers and the classroom teacher form FROG teams. All children receive
45 minutes of small-group FROG instruction each day. Each small group consists of four or five children and includes one of the strongest readers in the classroom, one of the weakest readers, and two or three other children. Each group is taught by one of the teachers.

The 45 minutes of daily FROG instruction includes four activities. For the first 10 minutes, children talk about and read a little from the self-selected book they have been reading during classroom self-selected time. Next, they participate in the shared reading of a big book, which is read and worked with for 1 week. The third daily activity is a word study activity such as making words, rounding up the rhymes, or guess the covered word. Each FROG session ends with each child writing a sentence related to the big book.

In addition to the four blocks, many teachers schedule a 10-minute easy reading support group in which very easy books are read and reread. This group of four or five children changes daily. Children who need easy reading are included more often, but not every day.

The group is not composed of only struggling readers. Teachers include better readers as models and assure that all children are included across several weeks.

Assessment and evaluation

In the last several years, several schools and districts have evaluated the effectiveness of the Four Blocks framework. We will report some data from three different sites.

Data from the original Four Blocks school. Clemmons Elementary School in Winston-Salem, North Carolina, the school in which the framework was originally implemented, is a large suburban U.S. school with a diverse student population. Some children come from homes surrounding the school, and others are bused from the inner city. In any year, 20–25% of children qualify for free or reduced-priced lunches. Approximately 25–30% of the children are African American, Hispanic, or Asian-Pacific Island. Since the program began, the student population has remained relatively stable, with approximately 10% of the children moving in and out each year. There have been three different administrators. Approximately half of the current first- and second-grade teachers have been there for all 8 years of our work with Four Blocks. The other half, including some beginning teachers, have more recently joined the staff. All classes are heterogeneously grouped and contain an average of 23 children. No children are retained, and children are not referred for special classes until second grade. Thus, the population of this study includes all children who are in the school at the end of first and second grade. The majority of the children have had 2 years of four blocks instruction, but some children who are new to the school have had a year or less.

Throughout the year, teachers conduct assessment by observing and conferring with children, taking running records, and looking at writing samples. At the end of the year, children are given the Basic Reading Inventory (BRI) by an assessment team headed by the curriculum coordinator. Instructional levels are computed using the standard procedures and include measures of oral reading accuracy and comprehension. Because the BRI is administered at the end of the year, an instructional level of first or second grade is considered grade level at the end of first grade, and an instructional level of second or third grade is considered grade level at the end of second grade.

BRI data are reported starting with our second year, in which all first-grade teachers were involved, and continues through 6 years of first graders and second graders (see Table). Approximately 100–140 children in each grade are included in each year’s data.

Across 6 years, instructional level results have remained remarkably consistent. At the end of first grade, 58–64% of the children read above grade level (third grade or above); 22–28% read on grade level; 10–17% read below grade level (preprimer or primer). On average, one child each year is unable to meet the instructional level criteria on the preprimer passage. At the end of second grade, the number at grade level is 14–25%; the number above grade level (fourth grade level or above) increases to 68–76%; the number reading below grade level drops to 2–9%, half what it was in first grade.

While we have no control group to which we can compare our results, our data were collected across 7 years and were consistent across 6 groups of 100–140 children. The data look remarkably similar, even with new teachers and several changes in school administra-
Eight years of multimethod, multilevel instruction

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<td>Above (Grades 3 - 6) 76 61%</td>
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<td>At (Grades 1 - 2) 28 22%</td>
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<td>Below (PP, P) 21 17%</td>
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<tr>
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<tr>
<td>At (Grades 1 - 2) 25 25%</td>
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<tr>
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<td>Reading levels: No. Percentage</td>
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<tr>
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</tr>
<tr>
<td>At (Grades 1 - 2) 29 22%</td>
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<tr>
<td>Below (PP, P) 19 14%</td>
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<tr>
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<tr>
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</tr>
<tr>
<td>At (Grades 1 - 2) 32 24%</td>
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<tr>
<td>Below (PP, P) 15 11%</td>
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<tr>
<td>Reading levels: No. Percentage</td>
</tr>
<tr>
<td>Above (Grades 4 - 6) 77 75%</td>
</tr>
<tr>
<td>At (Grades 2 - 3) 24 23%</td>
</tr>
<tr>
<td>Below (PP, P, Grade 1) 2 2%</td>
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<tr>
<td>Reading levels: No. Percentage</td>
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<tr>
<td>Above (Grades 4 - 6) 74 71%</td>
</tr>
<tr>
<td>At (Grades 2 - 3) 21 20%</td>
</tr>
<tr>
<td>Below (PP, P, Grade 1) 9 9%</td>
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<tr>
<td>At (Grades 2 - 3) 32 25%</td>
</tr>
<tr>
<td>Below (PP, P, Grade 1) 9 7%</td>
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<tr>
<td>Reading levels: No. Percentage</td>
</tr>
<tr>
<td>Above (Grades 4 - 6) 76 78%</td>
</tr>
<tr>
<td>At (Grades 2 - 3) 16 16%</td>
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<tr>
<td>Below (PP, P, Grade 1) 6 6%</td>
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<tbody>
<tr>
<td>Reading levels: No. Percentage</td>
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<tr>
<td>Above (Grades 4 - 6) 97 70%</td>
</tr>
<tr>
<td>At (Grades 2 - 3) 31 22%</td>
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<tr>
<td>Below (PP, P, Grade 1) 10 8%</td>
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<tr>
<td>Reading levels: No. Percentage</td>
</tr>
<tr>
<td>Above (Grades 4 - 6) 118 74%</td>
</tr>
<tr>
<td>At (Grades 2 - 3) 26 20%</td>
</tr>
<tr>
<td>Below (PP, P, Grade 1) 8 6%</td>
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Looking at these data across 6 years reveals that the most startling (and encouraging) results relate to those children who do not read at grade level at the end of first grade. Of the 10–15% of children who do not read at grade level at the end of first grade, half are reading on or, in some cases, above grade level at the end of second grade. Standardized test data on these children collected in third, fourth and fifth grades each year indicate that 90% of the children are in the top two quartiles. Most years, no children's scores fall in the bottom quartile.

Data from a suburban school district. The original school in which the framework was implemented does not use standardized testing until the end of third grade. Other districts, however, do administer standardized reading tests in the primary grades. One district devised an evaluation model, the results of which will be reported here. Lexington One in Lexington, South Carolina, is a suburban school district with eight elementary schools, in which 25% of the children qualify for free or reduced-price lunches. During the 1995–1996 school year, first-grade teachers in the district were given information about the Four Blocks framework and allowed to choose whether they wanted to implement the model in their classrooms. Approximately half of the teachers chose to implement the framework and were provided with several workshops, professional books, and collegial support throughout the year in their classrooms.
In January 1996, 100 first graders in classrooms using the Four Blocks and 100 first graders in classrooms not using the framework were randomly selected and were given the Word Recognition in Isolation and Word Recognition in Context sections of the BRI. Adjusted mean (average) scores for both measures favored students in the Four Blocks classrooms. For the Word Recognition in Context sections, the differences were statistically significant. Students in the Four Blocks classrooms were, on average, reading at the beginning of second-grade level. Students in the other first grades were on average at the first-grade, second-month level.

Although these results were encouraging, district officials were concerned about lack of reliability of the BRI and about teacher bias, fearing that the enthusiasm of the teachers who chose to implement the model may have created artificially high scores. They then devised an experiment using cohort analysis and standardized test results. In May of 1996, all 557 first graders in Four Blocks classrooms were administered the Metropolitan Achievement Test. Each child was matched with a first grader from the previous year (1994–1995) on the basis of his or her scores on the Cognitive Skills Assessment Battery (CSAB), a test of readiness given each year during the first week of school. The total reading mean score for the Four Blocks first graders was significantly better (.0001 level) than that of matched students from previous years. In grade equivalent terms, the average Four Blocks first grader's reading level was 2.0 while the 1994–1995 student's average reading level was 1.6.

On the basis of the standardized test data, school officials concluded that the Four Blocks framework had been much more effective than their previous ability-grouped traditional basal instruction. They hypothesized that since students selected for the basal cohort group had been taught by all the first-grade teachers in the system, teacher bias could not have accounted for the results. Furthermore, classroom observations suggested that teachers who implemented the Four Blocks framework had not all implemented it fully or equally well. In spite of the uneven implementation, children in the Four Blocks classrooms scored on average almost half a year better than the previous group.

The district then analyzed its data by dividing both groups of students into thirds according to their CSAB scores. The Figure demonstrates graphically that children of all ability levels (as defined by their CSAB performance) profited from the multilevel Four Blocks instruction. There was a 15-point difference in total reading scores for the lower third, a 23-point difference for the middle third, and a 28-point difference for the upper third. The district concluded that organizing in this nonability-group manner had profited the struggling students and had been even more successful for students who would traditionally have been placed in the top groups.

Data from one rural school. During the same year, a nearby school adopted the Four Blocks framework and mandated its use in all first- and second-grade classrooms. Brockington Elementary School in Florence School District Four in Timmonsville, South Carolina, is a small rural district in which 84% of students qualify for free or reduced-price lunches. Based on low achievement test scores, the elementary school had been placed on the list of the state's worst schools and had tried a variety of approaches to improving reading and math test scores. During the 1991–1992 school year, the school was mandated by a new superintendent to "teach the basics." A state-developed basic skills curriculum focused on "skill and drill" was implemented along with a computer lab basic skills remediation program for Chapter 1 students. End of the year achievement test scores showed no improvement. During the 1992–1993 school year, teachers took a yearlong graduate course on whole language. Again, the end-of-year test results failed to show improvement.

During the 1993–1994 school year, another new superintendent arrived. The district continued to emphasize whole language, and teachers were trained in cooperative learning. This year's test scores showed some improvement at Grades 2 and 3, though none at Grade 1. During the 1994–1995 school year, teachers were urged to continue to use whole language and cooperative learning; they were also trained in the learning styles approach of Rita Dunn. On the Metropolitan Achievement Test (MAT) only 20% of first-grade students scored at or above the 50th percentile on total reading. At the second-grade level, only 9% scored at or above the 50th percentile.
During the 1995–1996 school year, all 10 teachers—6 at first grade and 4 at second grade—were trained in and mandated to try the Four Blocks framework. The teachers were given workshops and books, as well as state department and central office support, etc. In the opinion of those central office and state department facilitators who visited classrooms weekly, 4 of the 6 first-grade teachers and 3 of the 4 second-grade teachers implemented the framework.

MAT total reading scores for all first and second graders in the school (including the three classes that did not implement the framework) indicated that 30% of the first graders and 38% of the second graders had total reading scores at or above the 50th percentile. Results for the 1996–1997 school year show 46% of first graders and 40% of second graders at or above the 50th percentile on the MAT total reading.

The results from this school system are, of course, open to speculation. Since different children were tested in the 1994–1995 group and we have no pretest data on these children, we cannot be sure that the huge jump in the number of children reading at or above grade level is due to the implementation of the Four Blocks framework. Nevertheless, officials in this school district, having tried so many programs in the previous 5 years, are convinced that the differences are real and attributable to the balanced multilevel instruction that most of the first and second graders received.

**Conclusions**

The last 8 years have been exciting and satisfying for us. We have seen the Four Blocks framework implemented in hundreds of classrooms in diverse settings, with varied populations of children. We have learned a great deal about teachers and about children.

Teachers who are widely criticized for not being willing to try anything new will change when the innovation has lots of familiar elements, is doable within the time frame and materials they currently have, and results in observably better readers and writers. Teachers, too, have individual differences. Most teachers like some blocks better than others. They continue teaching each block each day, however, because they see children for...
whom each block is critical and are convinced that if they left any block out, some children would not learn to read as well. Finally, we have learned that teachers can take this framework and put their own "stamp" or style on it. What is the same in all classrooms, however, is that we give each block its allotted time each day and we work to make each block as multilevel as possible. Beyond that, there is wide latitude for teachers to carry out the instruction in ways they and the children find most satisfying and effective.

We have also learned more about how children learn. We began with the notion that children do not all learn in the same way, and this notion has become a conviction. Some children seem equally engaged and successful in each block, but others have clearly observable preferences. If you watch closely, you can almost see them "click in" during the block that matches their learning personality.

We are even more convinced now about the dangers of fixed reading groups. Although we use many grouping formats for our instruction, the children have no notion of being in a top, middle, or bottom group. First graders who come with little print experience but much eagerness to learn maintain that eagerness and their "I can do anything" attitude. Many of our inexperienced first graders become grade-level or better readers and writers.

We realize that when we used to put children in the bottom group, we were combining two types of learners—slow learners and inexperienced learners. When slow learners and inexperienced learners are combined in a bottom group, the pace is slowed and the opportunity to learn is limited. When inexperienced but fast learners have multiple opportunities to read and write and don't become discouraged by low-group placement, they make up for lost time. We began with the theoretical abstract idea that grouping children was not the best solution to the many entering levels of children. Our abstract idea has now been replaced with "real kid" readers and writers.

Perhaps the most surprising thing we have learned from our work came not from the children with the lowest entering levels but from those children already reading when they came to first grade. The ones who would have been placed in the top reading groups. In all honesty, we didn't initially expect our model to make things much better for these children. We just hoped that not being in a top group wouldn't hurt them. As year after year of data have indicated, these children read consistently and significantly above grade level. We have come to realize that the Four Blocks framework is probably as important for the highest achievers in each class as it is for the lowest. When our children were in reading groups, the top group in first grade read in the second-grade book at the end of first grade. But this upwards modification had clearly not been enough to accelerate the achievement of the very best readers. In the Four Blocks framework, children spend half their time in the self-selected and writing blocks in which there is no limit to the level at which they can read and write. When there is no limit on how fast they can learn, our best readers will astonish us. It is clear to us now that being placed in static reading groups defined by ability levels and with a prescribed curriculum was as limiting for those in the top half of the top group as it was for those in the bottom half of the bottom group.

Previously a public school teacher and administrator, Cunningham now teaches courses in literacy education at Wake Forest University. Hall is the curriculum coordinator at Clemmons Elementary School in Winston-Salem, North Carolina, USA. Defee was the first-grade teacher at Clemmons Elementary who initially collaborated with Cunningham and Hall in developing the Four Blocks framework. She is now the curriculum coordinator for Easton Elementary School in Winston-Salem, North Carolina, USA. Cunningham can be contacted at Wake Forest University, PO Box 7266, Winston-Salem, NC 27109, USA.

References

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Integration of the Disciplines

Historical Perspectives

Purpose of this Unit

The purpose of this brief history of curriculum integration is to both examine experiments in curricula integration and to develop topics of inquiry to assist you with better understanding how the history of integration has guided current practice. The purpose of this inquiry is to help you find information which leads to new questions, and these questions assist you with looking at the literature in a critical reflective process.

The Core Curriculum

As educators continue to search for ways to improve the educational process, many find themselves trying to overcome the disjointedness of departmentalized teaching methodologies. These attempts to lessen the lack of integration across the disciplines has once again found educators developing the concepts of "core curriculum." The core curriculum concepts which focus on problems, issues, and concerns of students have been cited in the literature in the early 1800s by Herbert Spencer. Since this time, more than 80 normative and comparative studies have been performed on the effectiveness of integrative programs (National Association for Core Curriculum, 1984).

What were the results of these studies?

- According to Vars (1991), in nearly every instance, students in various types of integrative/interdisciplinary programs have performed as well or better on standardized achievements tests than students enrolled in the usual separate subjects.
- According to Oberholzer (1937) the results of the Houston School District experiment demonstrated success in skills achievement, problem solving activities, creative work, and higher levels of achievement. In addition, comments from principals, teachers, children, and parents indicated gains in the development of pupil initiative and self reliance, pupil skills, organization and appreciations, motivation of study habits and skills, organization and procedure, and teacher improvement.

A Brief History of Integration

This section provides four examples of experiments in integrating the curriculum. Each of the titles listed below are linked to descriptions of these examples. When you are ready, you can view these examples by clicking on the example name. When you want to explore another example, return to this page and select the next example.

Historical Examples to Study

Most of these experiments, and others in teaching and learning during the early part of the 20th century, did not use the term "integrated" to describe their curricular designs, but many used the principles and processes that are considered a part of contemporary curriculum integration.

Examine the four historical examples by clicking on their names below.

http://www.orst.edu/instruction/ed555/zone3/histroy2.htm 8/31/01
• Dewey School (1898-1948)
• Lincoln School (1926)
• Houston City Schools (1924-1930)
• Bank Street Workshops (1943-1948)
The Laboratory School of the University of Chicago, later known as the Dewey School, opened in January 1896 with 16 pupils and two "teachers." By 1898 the Dewey School had 82 students. By 1902 the school was composed of 140 children, 23 teachers, and 10 graduate assistants.

The Goals of the Dewey School:

1. the development of the school as a cooperative community that would meet the social needs of students and,
2. the intellectual development of the child through activity.

According to Mayhew & Edwards (1936), two assumptions about children were fundamental to the philosophy of the Dewey School.

The first emphasized the differences between children and adults:

- A child is not a little adult, and a child's main work is learning.

The second assumption was that:

- the conditions which make for mental and moral progress are the same for the child as for the adult.

Therefore the school must meet the unique needs and interests of the child, while providing a situation where the problem-solving processes used by both children and adults can be brought to bear upon those interests and needs.

Equally important to the philosophy of the Dewey School was that learning occurred within a community setting. Dewey (1900) stated that a school as an embryonic community life that will reflect the life of the larger society. Dewey elaborated on this belief by stating that the embryonic community will in turn produce citizens that can improve the larger society by making it worthy, lively, and harmonious. Thus, in the Dewey School, a major goal of education was its social purpose. This social purpose guided the process of having children learn to work cooperatively together to achieve common goals.

Activities at the Dewey School arose from the child's own interests and from the need to solve problems that aroused the child's curiosity and that led to creative solutions. In turn, activity itself led to inquiry and to the development of skills (Tanner & Tanner, 1980).

Subject matter was seen as a resource for social and intellectual problem solving. In keeping with principles of child development, the selection of subject matter was related to children's experiences and interests, and moved from primarily concrete and physical experiences for the younger children.
to more abstract and intellectual pursuits for the older groups (Martinello & Cook, 1994).

Integrated Curriculum in the Dewey School

In the Dewey School integration of the curriculum emerged from teacher's and researcher's beliefs about learning and from beliefs about the purposes of schools. Children's interests are not subject specific; they cross the traditional disciplines. The acquisition of skills emerges from activities and inquiry related to a broad central theme, and are explored in the community of the classroom.

The Dewey School curriculum, and integration of that curriculum, was expected to occur naturally, as subject-area specialists designed activities to explore the problem each group was investigating. However, teachers were not afraid to encourage the children to explore other topics not directly related to the central problem.

For example:

*A group of 6 year old children, in addition to counting and measuring, as they learned about a farm, also used dominoes and blocks to help develop concepts of tens and units.*

It is important to note that the central problems studied in each age group at the Dewey School had a strong social studies orientation. This is logical considering the social purposes of the school were the School's major focus. Studies in subjects such as science, mathematics, cooking, art, music, and even French were related to the central social, historical, or geographical central theme.
Integration of the Disciplines
Historical Example - Lincoln School

The Lincoln School (1926): The Child-Centered School

In 1916, Abraham Flexner published his essay "A Modern School" in the American Review of Reviews, calling for a school designed "to give children the knowledge they need, and to develop in them the power to handle themselves in our own world" (Cremin, 1964). This school would be based upon scientific standards, and would provide a laboratory from which would issue scientific studies of educational problems.

This model school came into existence as the Lincoln School of Teachers College. Situated in Manhattan, the school built a curriculum based upon units of work that took into account children's development, and that used the city of New York itself as a laboratory for exploration and activities.

The children studied units designed to deal in depth with some important aspect of contemporary civilization. Each classroom was perceived as a real-world workshop, and children's learning was seen as real work. The goal of the school was the development of an all-round, harmonious personality. The criteria for units of work developed by the staff of the elementary division gave a clear indication of the school's philosophy:

1. The unit of work must be selected from real-life situations and must be considered worthwhile by children because they feel that they have helped select it and because they find in it many opportunities to satisfy their needs.

2. The unit of work must afford many opportunities for real purposes and real projects, and it will be something that children can carry into the regular curriculum.

3. The unit of work must stimulate many kinds of activities and so provide for individual differences.

4. The unit of work must make individual growth possible.

5. The succession of units of work must provide for continuous group growth from one level to the next.

6. Each unit of work must furnish leads into other related units of work and must stimulate in children the desire for a continued widening of their interests and understandings.

7. Each unit of work must help meet the demands of society and must help clarify social meanings.

8. Each unit of work must be accompanied by progress in the use of such tool subjects as contribute to that unit.

9. Each unit of work must lead to the development of desirable habits.

Teachers themselves were expected to have a sound background: a thorough knowledge base, an
understanding of children and their development, and a lively personality (Tippett et al., 1927). The teacher was expected to use a specific technique that included the following elements (Tippett et al., 1927):

1. To give time for orientation;
2. To set the stage for the initiation and development of educative situations or units of work;
3. To work as a member as well as a guide of the class;
4. To select the educative factors in any unit of work;
5. To do something with the facts and meanings that have been stressed.

The Integrated Curriculum in the Lincoln School

The curriculum in the Lincoln School was deliberately organized around broad, cross-curricular units of work designed to provide children as nearly as possible with real-life situations (Tippett et al., 1927). These units of work might incorporate virtually all the traditional subjects or be closely focused on one subject area such as social studies, science, or music. In their reports for the year, teachers were required to indicate the subject areas that had been incorporated in the units of study (Tippett et al., 1927).

More than one unit of study was frequently in progress at one time. Sometimes a smaller unit was related to the major unit. For example, in the second grade class, a map making unit might be going on concurrently with a study of how foods reach the city from the farm. At other times, unrelated units might be going on simultaneously. In a fifth grade class, a study of marimbas and marimba making instigated in the creative music class might be concurrent with a larger unit on Colonial history.

Skills subjects such as math and reading were frequently linked to a unit, but, if necessary, were taught separately. For example, if a unit did not include any opportunities for arithmetic, separate lessons would be taught, or if specific skill or knowledge was needed, special lessons would be given. Sometimes, as in a second grade classroom, daily reading or other skill lessons were built into the schedule (Tanner & Tanner, 1980).

Flexibility in meeting the goals of the school was a hallmark of the Lincoln School and these goals were clearly child-centered. Children were involved in the selection of units, and the units were designed to be broad enough to allow for individual interests. The teacher was guided by two considerations: The unit must be kept near to present needs, and it must be thought worthwhile by the child (Tippett et al., 1927).

(Adapted from Interdisciplinary Inquiry In Teaching and Learning by Martinello & Cook, 1994)
The Bank Street Workshops (1943-1948): Teacher Education for Curriculum Development

The Bank Street Workshops were designed to take the principles and practices of curriculum from the Bank Street College of Education into the public schools. The Bank Street College of Education developed out of the Bureau of Educational Experiments, founded in 1916 by Lucy Sprague Mitchell to try to bring together the movement toward building experimental schools with the movement toward developing a science of education (Cremin, 1964).

The purpose of the first workshop, in 1943, was to work with teachers in their school, with their children, in their physical and social neighborhood, and in that concrete situation to work with them realistically to build a curriculum suited to children in modern-day United States (Mitchell, 1950). For the first 3 years, three of the Bank Street staff worked intensively with about half the teachers and three of the administrators in a large urban elementary school of some 1,700 students. The curriculum was revised twice during the Workshop experience, with increasing involvement and ownership among the teachers. In 1946, the program was expanded to two additional schools, and three teachers from the original school were assigned to work full-time with the Bank Street team in the new Workshops.

The Integrated Curriculum in the Bank Street Workshops

In the first workshops, teachers did not understand the when, where, how and why of curriculum integration. According to Martinello & Cook (1994), they liked the idea of units as experiences in which content from various areas of the curriculum might be used, but they perceived the units as some thing to be added onto the regular course of study.

Social studies was deliberately selected as a starting point in the curricula since the subject area appeared to lend itself most readily to student involvement and social interaction. History, geography, and civics were part of the new social studies. The study of science was then added to the curriculum.

Major themes were identified for different grade levels:

- Kindergarten - Living and Working in the Home, School, and the Neighborhood
- Grade 2 - Living and Working in New York City and in Different Kinds of Communities
- Grades 3 and 4 - Living and Working Together in the United States of America and the World
- Grades 5 and 6 - Expanding environments

Each of these are still patterns and units commonly found in elementary social studies curricula.

http://www.orst.edu/instruction/ed555/zone3/bank.htm 8/31/01
Later in the workshops, teachers explored with Bank Street ways in which activities in dramatic play, art, language, music, and other subject grew out of the core experiences. However, it is important to note that the workshops never concentrated on designing and implementing a fully integrated curriculum. The emphasis of second phase workshops was on building a pedagogically sound vertical social studies curriculum rather than a horizontal curriculum which broadens the curriculum across subject.

In the earliest phases of the workshops, the teachers were interested in how to implement the new ideas, not in the underlying philosophy or assumptions about children and learning. According to Martinello & Cook (1994), during the second phase, there was an important shift in the teacher approach to curriculum building. And after 3 years in the workshop, teachers began to see how knowledge of children's development of the environment, and of a basic philosophy of education, were the essential knowledge bases or foundations for curriculum development.

Throughout the Bank Street Workshop experiment, teachers went through the following stages of professional growth:

- early lack of self-confidence that led them to seek specific directions and prescriptions;
- a desire to acquire more background knowledge and content;
- growth in understanding the concept of curriculum building; and
- relating their job to the world outside the school (Mitchell, 1950).

The Findings

As the teachers developed more self-confidence in their own ideas and their ability to work creatively with children, their professional attitude changed. They became enthusiastic, inventive, and willing to experiment. They obtained deep satisfaction from their creative endeavors (Mitchell, 1950).

Also according to Mitchell (1950), although they became increasingly impatient with the strictures and limitations of public school teaching, they became better equipped to deal with these problems and to develop authentic learning environments for their students.