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Summary

Significance of the Study
Success in mathematics is central to a good education in the modern world. In general, the higher the level of education of an individual, the higher the likelihood of employability and as a result higher wages (Clark and Fulton, 2003). The better educated a society, the more successful the society will be. Mathematics gives people tools that include logical reasoning, problem-solving skills, and the ability to think in abstract ways (Clark and Fulton, 2003). Poor mathematical competencies restrict college major and later career choices for individuals pursuing post-secondary education. As a result, the more math-intensive the occupation, the higher the entry-level and subsequent wages (Geary and Hamson, 2004). It has been estimated that the lack of math and literacy competency in the United States will cost the economy of the country 170 billion dollars each year. Given the inarguable link between math competency and economic prosperity, it is in the best interest of everyone to develop an educational system that takes advantage of all available methods of instruction (Geary and Hamson, 2004).

Weakness in Math Instruction
Even though the importance of mathematics is readily apparent, the students of the United States do not do well when compared to their peers throughout the world. Students from the United States scored below the average of other countries on the Third International Mathematics and Science Study (Lubell, 1998). Only about 1 out of 100 students in the United States scored as well as the average student in the top-ranked nation, Singapore (New York State United Teachers, 2004).

Cost of Technology
Billions of dollars have been spent on the inclusion of technology in the schools of the United States. Between the years 1997 and 2000, the federal government alone spent 1.25 billion dollars on funding for new computers, software, and teacher training (Johnson, 2000). In March of 1997, the President’s Committee of Advisors on Science and Technology recommended the federal government should spend 6 to 28 billion each year on a program to increase computer infrastructure, teacher training, and research (Panel on Educational Technology, 1997).

Computer-Assisted Instruction
Computer-assisted instruction (CAI) is an educational medium in which a computer delivers instructional content or activities. The Association for Educational Communications and Technology defined computer-assisted instruction as a method of instruction in which the computer is used to instruct the student and
contains the instruction designed to teach, guide, and test the student until a desired level of proficiency is attained (Association for Educational Communications and Technology, 1977). Traynor (2003) suggests that computer-assisted instruction affects cognitive processes and increases motivation by the following ways:

1. Personalizing information;
2. Animating objects on the screen;
3. Providing practice activities that incorporate challenges and curiosity;
4. Providing a fantasy context; and
5. Providing a learner with choice over his/her own learning

Research on CAI and Achievement
Research on the effectiveness of computers on student academic achievement began as early as the 1960s (Skinner, 1965). The early research was inconclusive. More recent studies have varied in their results. Baker (1999) makes the claim that there is a lack of controlled studies. Baker found that most studies centered on students’ and teachers’ attitudes and opinions toward computers. Kulik (1994) found that controlled studies conducted in a scientific manner on the effects of computers on students’ academic achievement are hard to find. A report by Coley, Cradler, and Engel on the use of technology in the classroom was unable to cite one study on the effectiveness of computer-assisted instruction using a control group (Coley, Cradler, and Engel, 1997).

The research that has been conclusive generally indicates a positive relationship between the use of computer-assisted instruction and student academic achievement. A meta-analytic study conducted in 1987 reviewed sixteen major studies. The study found that students receiving computer-assisted instruction scored at the 66th percentile on tests while the control group scored at the 50th percentile (Niemiec and Walberg, 1987). Another study found that students in grades sixth through twelfth that received computer-assisted instruction attained higher levels of academic achievement that 58.2% of students only receiving traditional teaching methods (Christman, Badgett, and Lucking, 1997). One of the most thorough studies was conducted by Frank Brown. Brown studied students in a large urban North Carolina public school system. The population of the system was 50% white, 42% black, and 8% other. The subjects were divided into a control group that was not exposed to CAI and an experimental group utilizing CAI. The study analyzed the results from the North Carolina end of the course test. A 1% higher level of achievement was found in the group that was exposed to computer-assisted.

Research Design
For this study, a cause-effect linkage was suspected between the use of computer-assisted instruction software and achievement in mathematics. A study was required to prove or disprove this relationship in which one can manipulate the variable of computer-assisted instruction. Due to limitations in obtaining a random sample, a quasi-experimental study was used. A two-group, pre-test post-test design was used in the study (Charles, 1998).

The study was conducted between the dates of August 9th, 2004 and October 15th, 2004. The control group was taught by traditionally accepted teaching methods throughout the study. This consisted of primarily lecture with the addition of worksheets, quizzes, and other teacher directed activities. The experimental group received the same traditional teaching methods plus one hour a week of computer-assisted instruction in the form of Orchard software.
A pre-test was given to subjects involved in the study. The pre-test was appropriate to the level of mathematics in which the subject was enrolled. The pre-test consisted of fifty multiple choice questions that tested the mastery of the objectives covered during the study. A post-test was given at the end of the study to all subjects involved in the study. The post-test was also appropriate for the level of mathematics in which the subjects were enrolled. The post-test consisted of fifty multiple choice questions that determined the mastery of the objectives covered during the study.

The differences between the scores on the post-test and pre-test were calculated. The means of the differences from the experimental group and the control group were compared using a t-test to determine if a statistically significant difference existed. The differences were also calculated by gender. These differences were compared using a t-test to determine if a statistically significant difference existed between the genders of the subjects. The sample did not have enough subjects of different ethnicities to make a statistically significant determination of whether different ethnic groups would have their mathematics achievement affected differently by the addition of computer-assisted instruction. Only nine Hispanic and eleven Asian subjects were included in the study. Fifty-six black subjects participated in the study. 251 of the subjects were white.

The results of the data analysis resulted in the rejection of H1. The data indicated that the treatment of the study, the use of computer-assisted instruction, did cause a statistically significant level of difference between the pre-test and the post-test of the control group and the experimental group. The results of the data analysis resulted in the acceptance of H1. The data indicated that the difference in change between subjects of different gender was not statistically significant. H2 could not be accepted or rejected with any level of confidence due to the limited sample size of different ethnic groups other than white.

**Conclusion**

The research indicates that the use of a computer-assisted instructional software package once per week did produce a higher level of academic achievement in mathematics by middle school students. There was a statistically significant difference between the control group and the experimental group. The p value of 0.011 indicates a high level of confidence that the treatment in the study was responsible for any gain made. The conclusion that the treatment, the use of computer-assisted instruction for one hour a week in addition to traditional teaching methods, caused the increase in academic achievement was found to a level exceeding the 0.05 confidence level. The analysis of the data disproved the null hypothesis, H1.

The research study indicated that the female subjects made greater gains than the male subjects, but the difference was not statistically significant enough to ensure that the difference was caused by the treatment of the study and not chance. The p value of 0.77 did not indicate any statistical significant difference in achievement gains by males or females to a 0.05 level. The null hypothesis, H3, was retained.

Not enough subjects of different ethnic groups were used in the study to determine to any level of statistically significance if the differences in scores could be attributed to the treatment of the study. It was found that the Hispanic subjects that participated in the study had academic gains of 79.34%. This was higher than the other ethnic groups. Black subjects had gains of 52.67% while white subjects gained 47.54%. Asian students had the lowest gains of any ethnic group that participated in the study of 43.35%.
Recommendations for Future Research

Further study is intended. A larger sample size would be preferred to eliminate the effects of random occurrences. A more ethnically varied population must be used to allow for a statistically significant determination of differences between ethnic groups. A greater number of schools should be used. Care should be taken to ensure that urban, suburban, and rural schools are represented to allow for greater generalization of the findings.

Future studies should include background information on the subjects such as prior levels of computer usage. This would help determine if the novelty of using a computer increased or decreased its effectiveness as a teaching tool. A determination could also be made as to whether having a greater comfort level with the computer affects its effectiveness at increasing student achievement.

The subjects past scores in mathematics should also be included in future studies. With this information, a determination of whether different amounts of increase would be found at different levels the academic spectrum.

A survey to determine learning style should also be utilized. This would allow a comparison of the change in levels of academic achievement in the different learning styles. A determination could be made if certain learning styles benefited from the use of computer-assisted instruction more than others.

Recommendations for the Profession

The research project produced even greater differences between the control group and the experimental group than expected. The cause of the higher gains was determined to be attributed to the treatment in the study, the use of computer-assisted instruction, with a high degree of confidence. As technology is increasingly added to schools the use of the computer-assisted instruction becomes more available and practical. The study indicates that computer-assisted instruction should be a more widely used pedagogy in middle schools. The investment in technology should include monies for not only the software for computer-assisted instruction but training for the proper use in all areas of the curriculum.

A great amount of resources have been invested in the addition of computers and other types of technology to classrooms. The research in this study offers promise and suggests that this investment was well spent. Computer-assisted instruction offers differentiated education that is easy to plan and implement. It offers opportunities for remediation and reinforcement of concepts and ideas. Computer-assisted instruction is effective for both genders and indications are that it is effective for different ethnic groups. Computer-assisted instruction is an effective way to personalize instruction to ensure that all subgroups are reached.

References


Ashtabula Area City Schools implemented a Reading Intervention program using Orchard software from January 2004 to June 2004. The program targeted third- and fourth-grade students, from all eight district elementary schools, who failed the Ohio Reading Proficiency Test in Fall 2003. The program was fully supported by the District, and included components such as installation during winter break, a “district kick-off meeting,” two full-time support personnel, access to new computers exclusively for Orchard, weekly project reports, and monthly project meetings. Each targeted student was given a pretest in Orchard, and thereafter, each was given “computer assigned” activities in Orchard for a minimum of 30 minutes per week. Actual use of Orchard began in early January and continued through the end of the school year. The Ohio Reading Proficiency Test was administered again in March 2004. Of the 189 targeted third-grade students, 100 passed (52.91%). Of the 195 targeted fourth-grade students, 69 passed (35.38%). The total of targeted third- and fourth-grade students who failed in the fall and passed in the spring was 169 of 84 (44.01%). Teachers and students were surveyed regarding Orchard and results were positive for continued and expanded use of Orchard. A follow-up training is planned for summer 2004.

Project Description

The Ashtabula Area City School District is located in Northeast Ohio, approximately one hour from Cleveland. For the 2002-2003 school year, the district received a rating of “Academic Watch” by the Ohio Department of Education for meeting six of twenty-two indicators. At the fourth-grade level, the district met one indicator – for writing. The student population is approximately 4,500 — 76.7% white; 6.9% Hispanic; 11.2% African-American; and 5.2% Other. 61.8% of students come from households that are economically disadvantaged and the percentage of students with disabilities is 17.4%.

Orchard software was selected as the centerpiece of the Reading Intervention program for Ashtabula Area City Schools to be implemented in the second semester of the ’03–’04 school year. The specific target group was all of the third- and fourth-grade students who failed the Reading Proficiency Test in the fall of 2003. The total number of targeted students from all eight elementary schools was 384.

The District was aware of other districts’ software and technology projects that had been unsuccessful and wanted to ensure a successful implementation in Ashtabula that yielded positive and measurable results. Ohio Learning Systems, the technology partner selected to implement the program, developed a project that included the following components:

- Installation during winter break so that the project would start on time
- A “kick-off” training program for building-level Intervention Specialists
- A “kick-off” meeting for all principals and other district stakeholders such as curriculum and technology personnel
- The two full-time support staff to train/support teachers, assist in the testing/assignment process, generate reports, meet with principals, and assist in resolving technical issues
ReseaRch IniTIaTIves

- A schedule for the support staff to provide weekly visits to each school and weekly meetings with each principal
- Weekly written reports by the project staff
- Monthly project update meetings attended by Ohio Learning Systems, the two project support staff, and district personnel including the Assistant Superintendent, the Director of Title Programs, the Technology Director, and key technology staff
- Follow-up training, summer 2004

Orchard Installation

Orchard is a LAN-based product that is housed on one server at each school. For this project, it was determined that the size of the hard drives on the servers was not sufficient, so new hard drives were obtained. The installation involved one full installation on a “master” hard drive, and using it as an image for the remaining seven drives. An Ohio Learning Systems engineer (on site) and Orchard technical support in St. Louis (via phone) provided assistance to district staff.

Two new HP computers (SchoolNet Plus) were obtained for each third- and fourth-grade classroom. Orchard installation requires about five minutes per machine for QuickTime, Java applets, etc. The initial testing found some problems with the “Reading Links” program, but these were identified and corrected.

The District’s Technology Department worked diligently to complete installation and testing on time. There were some “bugs” that persisted through the first month of the program on isolated computers. These were identified and corrected.

Each school’s list of students was imported to the Orchard database via a text file. This process took only a few minutes to complete.

Kick-Off Activities

The first day upon returning to school after winter break was dedicated to the Orchard Reading Intervention project. In the morning, a training session for building Intervention Specialists was held. In the afternoon, a “kick-off” meeting with district stakeholders took place. After an Orchard demonstration, eight school teams met to discuss and plan Orchard implementation at their sites.

Support Staff

The two full-time support staff dedicated to this project were key to its successful implementation. At the beginning stages of the project, they were involved in the initial set-up of classes and testing of students. They were also critical in identifying and correcting the “bugs” that appeared in the program and were effective in eliminating them.

Beyond the first month, the support staff settled into a role of ongoing monitoring and support for teachers. They worked at each school at least once per week (per a published schedule). During the time at each site, they visited each classroom, where they addressed “ad hoc” issues with each teacher, built classroom and building-level reports, and met with the building principal.

Through the support staff, the entire project moved forward because individual teachers, grade levels or schools that were not implementing per plan were identified and remedies immediately provided. Also, the support staff was able to identify and correct technical problems quickly. The support staff submitted weekly reports (to OH Learning Systems, the Assistant Superintendent, the Title Programs Director, and the Technology Director) on project activity as well as issues. They also presented at monthly meetings.
Monthly Project Meetings

Monthly project meetings were held in order to ensure that the project was progressing effectively and to identify issues that had arisen in the past month. Theses were attended by the Assistant Superintendent, the Title Programs Director, and the Technology Director and select technology staff, Ohio Learning Systems, and the two full-time support personnel. These meetings were successful in helping to understand and ultimately eliminate technical issues that occurred during the first stages of the project. The meetings also identified teachers and/or schools that were not implementing per plan. Once all targeted students were tested and beginning to engage in Orchard activities, the meetings were used to review data. Because key project stakeholders were committed to participation in the meeting, the monthly meeting was an excellent forum for shared problem solving, planning, and decision-making. Meeting notes were taken and distributed so that action items were completed.

Orchard Use

It was recommended that each targeted student use Orchard for a minimum of 30 minutes per week. This minimum was met or exceeded in most classrooms. Initial testing (“pretesting”) was completed in classrooms and in Intervention Rooms that were located in some (not all) of the eight elementary schools. Most students were pretested within the first month of the project. Thereafter, students participated in “computer-assigned” activities. The specific activities were different for each student as the computer assignment was based on pretest results and was therefore individualized.

Some of the participating third- and fourth-grade classroom teachers recognized the potential value in Orchard and expanded classroom use to non-targeted students who passed the Reading Proficiency Test in the fall. Additionally, some teachers added Orchard mathematics programs; some teachers from non-target grades (grades 1, 2, 5, and 6) also requested access to Orchard for their students.

Prior to administration of the Ohio Reading Proficiency test, all students were given a “posttest” within Orchard. The posttest can be assigned to students multiple times during the year and thus enables teachers to review the progress students have made and likewise identify areas of need as well as areas of strength. The spring administration of posttests to the targeted group of students in Ashtabula showed significant progress and project stakeholders looked forward to the March proficiency results with great anticipation.

Proficiency Test Results

Of the 189 targeted third-grade students, 100 (52.91%) passed the Ohio Proficiency Test in Reading. Of the 195 targeted fourth-grade students, 69 (35.38%) passed the Ohio Proficiency Test in Reading. The total of targeted third- and fourth-grade students who failed in the fall and passed in the spring was 169 of 384 (44.01%). School and classroom breakdowns are found on the following pages; names of teachers have been changed to letters.
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<td>B</td>
<td>13</td>
<td>2</td>
<td>15.38%</td>
</tr>
<tr>
<td></td>
<td>Sub-Total</td>
<td>25</td>
<td>7</td>
<td>28.00%</td>
</tr>
</tbody>
</table>

**GRADE 4**

TOTAL

<table>
<thead>
<tr>
<th># Target</th>
<th># Passed</th>
<th>% Passed</th>
</tr>
</thead>
<tbody>
<tr>
<td>195</td>
<td>69</td>
<td>35.38%</td>
</tr>
</tbody>
</table>

**DISTRICT**

TOTAL

<table>
<thead>
<tr>
<th># Target</th>
<th># Passed</th>
<th>% Passed</th>
</tr>
</thead>
<tbody>
<tr>
<td>384</td>
<td>169</td>
<td>44.01%</td>
</tr>
</tbody>
</table>

ResearCh IniTiAves
ResearCh sTudy #2 (ConT.)
Surveys
Students and teachers were surveyed in May, 2004 to ascertain their opinions regarding Orchard use and to determine whether continued use and expansion of Orchard would be supported. Student and teacher responses were positive for continued and expanded use of Orchard.

The teacher survey consisted of 6 questions:
Q1 Orchard software has had a positive impact on student achievement.
Q2 Orchard helps my students with reading.
Q3 Orchard helps my students with writing.
Q4 Orchard helps my students with math.
Q5 I feel comfortable using Orchard in my classroom.
Q6 I would like to expand the use of Orchard in my classroom.

Respondents, consisting of grade 3 teachers, grade 4 teachers, and other teachers such as intervention specialists (Other), responded on a scale of one to five (lowest to highest). The results, along with comments, are below.

<table>
<thead>
<tr>
<th>GRADE 3</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Q5</th>
<th>Q6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree (5)</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Agree (4)</td>
<td>8</td>
<td>8</td>
<td>3</td>
<td>3</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Neither Agree nor Disagree (3)</td>
<td>5</td>
<td>5</td>
<td>9</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Disagree (2)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Strongly Disagree (1)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>9</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Average Score</strong></td>
<td><strong>3.94</strong></td>
<td><strong>3.94</strong></td>
<td><strong>3.38</strong></td>
<td><strong>4.12</strong></td>
<td><strong>4.25</strong></td>
<td><strong>3.71</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GRADE 4</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Q5</th>
<th>Q6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree (5)</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Agree (4)</td>
<td>7</td>
<td>8</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Neither Agree nor Disagree (3)</td>
<td>7</td>
<td>6</td>
<td>9</td>
<td>6</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Disagree (2)</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Strongly Disagree (1)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Average Score</strong></td>
<td><strong>3.76</strong></td>
<td><strong>3.82</strong></td>
<td><strong>3.00</strong></td>
<td><strong>3.67</strong></td>
<td><strong>4.06</strong></td>
<td><strong>3.76</strong></td>
</tr>
</tbody>
</table>
### Research Initiatives

#### Research Study #2 (cont.)

<table>
<thead>
<tr>
<th>OTHER</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Q5</th>
<th>Q6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree (5)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Agree (4)</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Neither Agree nor Disagree (3)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Disagree (2)</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Strongly Disagree (1)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Average Score</td>
<td>3.6</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4.2</td>
<td>4.6</td>
</tr>
</tbody>
</table>

#### Total Average Score

<table>
<thead>
<tr>
<th></th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Q5</th>
<th>Q6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.85</td>
<td>3.59</td>
<td>3.21</td>
<td>3.88</td>
<td>4.16</td>
<td>3.82</td>
</tr>
</tbody>
</table>

### Comments By Teachers

20 of 39 respondents wrote comments.

<table>
<thead>
<tr>
<th>Comment</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concern with time to use Orchard</td>
<td>7</td>
</tr>
<tr>
<td>Concern with &quot;bugs&quot;</td>
<td>5</td>
</tr>
<tr>
<td>Excellent program/ kids loved it</td>
<td>3</td>
</tr>
<tr>
<td>Need more computers</td>
<td>3</td>
</tr>
<tr>
<td>Great support</td>
<td>2</td>
</tr>
<tr>
<td>Start Orchard earlier in school year</td>
<td>2</td>
</tr>
<tr>
<td>Doesn’t fit my teaching philosophy</td>
<td>2</td>
</tr>
<tr>
<td>Difficult for Hispanic students</td>
<td>1</td>
</tr>
<tr>
<td>Doesn’t help struggling readers</td>
<td>1</td>
</tr>
<tr>
<td>Easy to use</td>
<td>1</td>
</tr>
<tr>
<td>Effective with whole group</td>
<td>1</td>
</tr>
<tr>
<td>Good data</td>
<td>1</td>
</tr>
<tr>
<td>Helped non-targeted more than targeted</td>
<td>1</td>
</tr>
<tr>
<td>No data</td>
<td>1</td>
</tr>
<tr>
<td>Not interactive</td>
<td>1</td>
</tr>
<tr>
<td>Want home access over summer</td>
<td>1</td>
</tr>
<tr>
<td>Would like training to learn more features</td>
<td>1</td>
</tr>
</tbody>
</table>
Student Surveys consisted of 6 questions. Respondents, consisting of all grade 3 and 4 students (targeted and non-targeted) who used Orchard, responded on a scale of one to five (lowest to highest) on questions one through four. Questions five and six were multiple-choice questions. The results are below.

Q1  I like using Orchard software.
Q2  Orchard helps me with reading.
Q3  Orchard helps me with writing.
Q4  Orchard helps me with math.

<table>
<thead>
<tr>
<th>GRADE 3</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Much (5)</td>
<td>174</td>
<td>117</td>
<td>69</td>
<td>112</td>
</tr>
<tr>
<td>A Little Bit (4)</td>
<td>50</td>
<td>92</td>
<td>70</td>
<td>40</td>
</tr>
<tr>
<td>Sometimes (3)</td>
<td>36</td>
<td>43</td>
<td>38</td>
<td>24</td>
</tr>
<tr>
<td>Not Really (2)</td>
<td>13</td>
<td>20</td>
<td>33</td>
<td>9</td>
</tr>
<tr>
<td>Not At All (1)</td>
<td>5</td>
<td>8</td>
<td>23</td>
<td>7</td>
</tr>
<tr>
<td><strong>Average Score</strong></td>
<td><strong>4.35</strong></td>
<td><strong>4.04</strong></td>
<td><strong>3.56</strong></td>
<td><strong>4.26</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GRADE 4</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Much (5)</td>
<td>130</td>
<td>98</td>
<td>68</td>
<td>98</td>
</tr>
<tr>
<td>A Little Bit (4)</td>
<td>88</td>
<td>103</td>
<td>86</td>
<td>56</td>
</tr>
<tr>
<td>Sometimes (3)</td>
<td>58</td>
<td>36</td>
<td>44</td>
<td>25</td>
</tr>
<tr>
<td>Not Really (2)</td>
<td>15</td>
<td>31</td>
<td>41</td>
<td>13</td>
</tr>
<tr>
<td>Not At All (1)</td>
<td>14</td>
<td>10</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td><strong>Average Score</strong></td>
<td><strong>4</strong></td>
<td><strong>3.89</strong></td>
<td><strong>3.57</strong></td>
<td><strong>3.98</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TOTAL AVERAGE SCORE</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>4.17</strong></td>
<td><strong>3.96</strong></td>
<td><strong>3.56</strong></td>
<td><strong>4.11</strong></td>
</tr>
</tbody>
</table>
### Research Initiatives

#### Research Study #2 (cont.)

<table>
<thead>
<tr>
<th>Q5</th>
<th>Orchard is</th>
<th>Q6</th>
<th>I think I should use Orchard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GRADE 3</strong></td>
<td>#</td>
<td>%</td>
<td><strong>GRADE 3</strong></td>
</tr>
<tr>
<td>Too Hard</td>
<td>3</td>
<td>1.07%</td>
<td></td>
</tr>
<tr>
<td>Kind of Hard</td>
<td>49</td>
<td>17.44%</td>
<td></td>
</tr>
<tr>
<td>Too Easy</td>
<td>32</td>
<td>11.39%</td>
<td></td>
</tr>
<tr>
<td>Kind of Easy</td>
<td>35</td>
<td>12.46%</td>
<td></td>
</tr>
<tr>
<td>Just Right for Me</td>
<td>162</td>
<td>57.65%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>281</td>
<td>100.00%</td>
<td></td>
</tr>
<tr>
<td><strong>GRADE 4</strong></td>
<td>#</td>
<td>%</td>
<td><strong>GRADE 4</strong></td>
</tr>
<tr>
<td>Too Hard</td>
<td>5</td>
<td>1.71%</td>
<td></td>
</tr>
<tr>
<td>Kind of Hard</td>
<td>78</td>
<td>26.71%</td>
<td></td>
</tr>
<tr>
<td>Too Easy</td>
<td>39</td>
<td>13.36%</td>
<td></td>
</tr>
<tr>
<td>Kind of Easy</td>
<td>46</td>
<td>15.75%</td>
<td></td>
</tr>
<tr>
<td>Just Right for Me</td>
<td>124</td>
<td>42.47%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>292</td>
<td>100.00%</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>#</td>
<td>%</td>
<td><strong>TOTAL</strong></td>
</tr>
<tr>
<td>Too Hard</td>
<td>8</td>
<td>1.40%</td>
<td></td>
</tr>
<tr>
<td>Kind of Hard</td>
<td>127</td>
<td>22.16%</td>
<td></td>
</tr>
<tr>
<td>Too Easy</td>
<td>71</td>
<td>12.39%</td>
<td></td>
</tr>
<tr>
<td>Kind of Easy</td>
<td>81</td>
<td>14.14%</td>
<td></td>
</tr>
<tr>
<td>Just Right for Me</td>
<td>286</td>
<td>49.91%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>573</td>
<td>100.00%</td>
<td></td>
</tr>
</tbody>
</table>

### Conclusion/Recommendations

Based on the data presented in this report, it is concluded that use of Orchard software had a positive impact on student learning, as evaluated by student performance on the Ohio Reading Proficiency tests for grades 3-4. After using Orchard software for three months, the total of targeted third- and fourth-grade students who failed in the fall and passed in the spring was 169 of 84 (44.01%). The Orchard Software reading Intervention Project was a success in great part due to the level of district support, and to the implementation plan, which included ongoing support and a reporting system to identify and resolve issues as they arose.

It is recommended that the District continue its support through the full-time personnel from Ohio Learning Systems, and that implementation features such as weekly reports and monthly meetings be continued. Furthermore, it is recommended that use of Orchard be formally extended to other grades, such as five and six, and to math. It is recommended that “extended” professional development to Orchard-using teachers be provided to enable teachers to use more features within the program so that even better results can be achieved for the 2004-2005 school year.
Integrating Curriculum-Based Software

Simcoe County District School Board
Peterborough Victoria, Northumberland, and Clarington Catholic District School Board
Ottawa Carleton Catholic School Board

Summary of Final Report

Dr. Pier Junor at the Ontario Institute for Studies in Education, as well as Sandie Bender, Vic D’Amico, and Chris Chapman of the NECTAR Foundation, conducted a study on the stand-alone versions of Language Concepts 3-4 (i.e., Reading, Research, and Language Skills and Writing and Media Literacy) and Math Concepts 4-6 (Data Management and Probability, Patterning and Algebra, Number Sense and Numeration, Measurement, and Geometry), released by the NECTAR Foundation as Language Trek and Math Trek.* Data collection included classroom observations, focus-group interviews with teachers, student and teacher questionnaires, and achievement results on the EQAO, a standardized test developed by the Education Quality and Accountability Office.

Six hundred students in 25 classes at nine schools participated in the research. All nine schools used Language Concepts with their third-grade students, and five schools used Math Concepts with their sixth-grade students.

At the beginning of the study, teachers involved in the project attended a training session that focused on the features of the software, strategies for integrating the software into the curriculum, and techniques for using the software in the classroom. Teachers were each given planning materials and a manual for the specific software program. The software was loaded on school computers and copies were made available for students to load on their home computers. Students used the software in school and at home from November 2002 through May 2003.

Data Collection

Classroom observations throughout the study period focused on first-hand observation of students using the software in the classrooms. Observers noted the sections of the software being used, student engagement in the use of the software, and the effect on student learning.

Student surveys in May 2003 attempted to determine the influence of the software on learning and attitudes toward software use. Teacher surveys, also in May 2003, were intended to determine implementation strategies, effects on teaching, and views on how the software affected student achievement.

Focus groups, which met in April 2003, gathered teachers together to review their experiences and provide more intensive discussion of their software integration techniques.

Students had the opportunity to use Language Concepts and Math Concepts for about four months prior to being tested. Scores for both sets of students (i.e., third graders and sixth graders) were higher than scores of students in the previous year.

* The programs will be referred to by their Orchard names (i.e., Language Concepts and Math Concepts) throughout this summary.
ResearCh IniTIaTIves

ResearCh sTudy #3 (Cont.)

Language Concepts

The Language Concepts software was used predominantly for practice and reinforcement of skills. The software was used primarily as support and not as a teaching tool. Teachers considered Language Concepts to be in alignment with the curriculum. After exploring the software and referring to the manual, teachers found selected parts of the program that fit into their regular classroom programs.

Teachers said that the software offered students a focus for their learning during activities. The immediate feedback provided by the software was motivating to the students, and teachers found that the program itself provided motivation. They liked the way students practiced without frustration. Teachers suggested that more frequent use might increase students’ language and computer skills since students were intensely engaged with Language Concepts. The use of the software was an innovative way to reinforce skills. Teachers remarked that the program instructions were very clear. The teacher’s role was that of a facilitator and coach, which allowed the teacher to attend to students who needed individual help. Teachers reported that students were comfortable with the pacing of the program. Teachers reported that the software was effective and easy to use. Teachers were able to use higher-level activities in the software for enrichment purposes.

Students were positive and on-task, and their engagement was high when they used Language Concepts—students asked to use the program, and they shared their results with each other. Students liked the sounds and characters, and considered the software to be engaging, making language arts more interesting. The students preferred Language Concepts to the regular teaching in the classroom. The Recreation Center activities made drill and practice and language development more interesting. Students reported that the part of the program that helped them the most was the Recreation Center.

The software was relevant and closely tied to the curriculum, which made it a convenient, complementary, and reliable resource.

Math Concepts

Teachers reviewed the manual, incorporated the software gradually into lesson plans, and assigned relevant materials to students. Teachers found Math Concepts to be in alignment with the current curriculum. They used Math Concepts to match what was being taught in the curriculum and they used the assessment function as part of their grading. Some teachers recognized that the use of the software had freed up some of their time, enabling them to identify students’ weaknesses and assist those who needed it.

Although teachers reviewed the manual and incorporated the software gradually into their lesson plans, implementation strategies differed somewhat by classroom for the sixth-grade students. One teacher had the computer educational resource teacher instruct students on how to use the software and noted that students became independent learners. Other teachers did a classroom demonstration and then observed that students were able to use the software independently.

The software was used for reinforcement, but not for introducing a given topic. Many students indicated that they were interested in using the computer program, so opportunities for access were provided, including before and after school for students needing help, as well as an early-bird math club at 8:30 a.m. for enrichment of skills. Students liked the program and did not need to be encouraged to use it; some students were able to demonstrate the use of the software to their peers. Some students used the program as a way to prepare for the EQAO exam.
Incentives within the program were the immediate feedback and high-quality graphics. Students were engrossed in the activities in Math Concepts and worked quietly. After working on a particular strand or section, most students visited the test section. Students obtained high scores on tests, indicating that they were doing well with the program. The software was reported to be user-friendly and students were able to be self-directed in the lab.

**Outcomes**

Students had the opportunity to use Language Concepts and Math Concepts for about four months prior to being tested. Third-grade students tested in language arts in 2003 scored 4.7% higher than students tested in 2002. Sixth-grade students tested in math in 2003 scored 3% higher than students in 2002.

Classroom observations indicated the engagement and motivation of the programs: students were engrossed with the programs and worked very quietly and intensely with the software. Students easily accessed the programs and had no difficulty navigating the sections. They were very much at ease with the programs. There were no discipline problems or incidents of off-task behavior.

**Implementation**

Several factors were found to influence the successful implementation of the software. One of the schools was used as a case study, and the following factors had a positive effect on use of the software in that school:

- Principal Leadership—The principal was very supportive of the use of technology and was experienced and competent with curriculum and innovation.
- Teacher Training—All teachers attended the training in which the software was introduced and strategies for integrating the software with the curriculum were described and planned.
- Teacher Support—The teachers had the support of the principal and the site administrator. Software was loaded on the school network and the school’s computer person handled all technical issues.
- School Planning—A high degree of planning led to a very positive teamwork approach. Scheduling of classes for the computer lab for the whole year was done at the beginning of the study.
- Introduction of Software to the Students—Students were introduced to the software in a large-group setting prior to working with it individually. They enjoyed using the programs, looked forward to their computer sessions, and were very enthusiastic and positive about using the technology. They used the computers confidently and efficiently. They had no problems accessing the various parts of the software, and they were quietly engaged in their learning.
- Access to Computers—Students had considerable access to the software, averaging one to two hours per week using the technology.
- Teacher Experience and Comfort with Computers and Software—Although the teachers had limited experience with computers and software, they were very comfortable with the technology. This is attributed to the leadership of the principal, the support of the site administrator, and the team approach to curriculum implementation in the school.
**Research Initiatives**

**Research Study #3 (cont.)**

- **Use of Software at Home by Students**—There was a high degree of use of the software at home by students. This is attributed to the support and enthusiasm of the principal and teachers in getting the software to parents.

- **Traditional Teaching Integrated with Time on Computers**—Technology as a teaching strategy was integrated with traditional teaching methods. All time on the computers was directly related to the curriculum being taught. Teachers matched the learning expectations in the software with the local curriculum. Students were serious about the use of the software and did not view computer time as a reward but as a normal part of learning.

- **Use of All Parts of the Software Directly Linked to the Regular Curriculum**—The software used in the study was organized on a strand basis with the strands matching the school’s curriculum. Teachers were able to use the manuals to easily match sections of the software with their curriculum units.
Avalon Independent School District
Avalon, TX

District Profile:
Ethnicity of Students: African-American 1%, Hispanic 44%, Native American 1%, Caucasian 54%
College Bound: 50%
Students At or Below Poverty Level: 61%

Profile

Evaluation Period
2003-2004

Target Population
3rd through 11th Grade

Orchard Bundle
K-3 Language Arts and Math
4-6 Language Arts and Math
7-9 Language Arts and Math
10-12 Language Arts and Math

Findings
Scores on the Texas Assessment of Knowledge and Skills showed significant gains after students were exposed to Orchard software for one year.

Implementation Strategy
All district students worked on customized Orchard learning plans for two hours per week. Teachers used Orchard for additional benchmarking information to periodically evaluate students’ areas of weakness, and supplemented skill instruction to ensure student success.

Student Performance Results
After implementing Orchard software into their curriculum, scores on the Texas Assessment of Knowledge and Skills Test for the Avalon Independent School District rose dramatically. In the area of English Language Arts, students increased from a level of 73% proficiency to a level of 90% proficiency. In mathematics, scores rose from 50% proficiency to 76% proficiency. This increase in scores for all subgroups brought the district from a status of Low Performing to an eligibility status of Recognized.

![Texas Assessment of Knowledge and Skills Test](chart.png)
Case Study #2

Bethel Junior High School
Spanaway, Washington

Bethel District Profile:
Ethnicity of Students: Asian 2%, African-American 49%, Caucasian 48%
Students At or Below Poverty Level: 30%

Profile

Evaluation Period
1999-2001

Target Population
7th – 8th Grade

Orchard Bundle
Math 4-6, Math 7-9

Skill Trees
Algebra; Basic Operations & Order of Operations;
Fractions; Geometry & Spatial Sense; Measurement

Findings

Eighty-eight percent of students who used Orchard in the 2000-2001 school year increased their Iowa Test of Basic Skills (ITBS) Normal Curve Equivalency (NCE) scores from the 1999-2000 school year.

Twenty-nine percent of students who used Orchard in the 2000-2001 school year increased their ITBS NCE scores from the 1999-2000 school year by 50 percent or more.

The average NCE score for the LAP Math students in the 1999-2001 school year was 56 percent. The average NCE score in the 2000-01 school year (when Orchard was implemented) was 73 percent, representing a 17 percent gain.

Challenges/Goals of the Program
Bethel Junior High School’s mathematics Learning Assistance Program (LAP Math) was designed for seventh- and eighth-grade students struggling with their basic math skills. The students assigned to LAP Math were determined through an eligibility pool that was based on the results of a sixth-grade district test chosen by district officials, sixth-grade ITBS scores, and teacher ratings. Orchard was chosen to be a part of the individualized LAP Math curriculum because of its ability to provide a customized learning assignment for each student.

Implementation Strategy
In the 2000-2001 school year, a total of 49 boys and 28 girls were served in the LAP Math class. These classes were held in 50-minute sessions five times a week. Each student received Orchard instruction once a week for at least 20 minutes per session. (Over the course of the 2000-2001 school year, students received an average of 15 hours of Orchard instruction.)

Student Performance Results
In the spring of 2000 the students in the LAP Math group was administered the Iowa Test of Basic Skills (ITBS). The same group of students was administered the ITBS again in the fall of 2001. Students’ Normal Curve Equivalent (NCE) scores showed significant improvement.

NCE Score Gains

[Graph showing NCE score gains before and after Orchard]

Before Orchard
After Orchard

0%
20%
40%
60%
80%
Bonlee Elementary School  
Pittsboro, North Carolina

Chatham County District Profile:  
Ethnicity of Students: African-American 2%, Hispanic 9%, Caucasian 64%  
College Bound Students: 82%  
Students At or Below Poverty Level: 11%

**Profile**

<table>
<thead>
<tr>
<th>Evaluation Period</th>
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<table>
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<table>
<thead>
<tr>
<th>Orchard Bundle</th>
<th>K-3 Language Arts</th>
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**Findings**

State end-of-grade (EOG) tests show that after using Orchard software, half of the “At Risk” students progressed to the “Proficient” level.

**Challenges/Goals of the Program**

North Carolina’s End-of-Grade (EOG) tests were created based upon North Carolina curriculum objectives. Those students who score a Level 1 or 2 on the EOG tests are not working at grade level and are deemed to be “At Risk.” These students need to participate in some type of remediation program. Because they could purchase Skill Trees specific to areas of student weakness, Bonlee Elementary School chose Orchard Software to be an integral part of their remediation program.

**Implementation Strategy**

Twenty “At Risk” students took part in an after-school tutorial program for reading, beginning in the fall of 2000 and ending in May 2001. Students stayed after school one afternoon a week for reading remediation. The students worked in a computer lab setting with a teacher overseeing their work with the Orchard programs. They also used the programs in their classrooms during the day as an extension of their regular classroom activities.

**Student Performance Results**

The EOG test data indicate that Orchard software positively impacted student achievement. In August 2000, twenty students were administered the North Carolina EOG test and were deemed to be “At Risk” (Level 1 or 2) in the area of Reading. In May 2001, after using Orchard software as an integral part of their remediation program, these same students were administered the EOG test. Approximately half of the “At Risk” students progressed from Level 1 or 2 to Level 3, and were considered to be performing at the “Proficient” level.

![EOG Test Results](image-url)
**Research Initiatives**

**Case Study #4**

**Cartersville Primary School**
**Cartersville, Georgia**

**Cartersville District Profile:**
Ethnicity of Students: Asian 2%, African-American 49%, Caucasian 48%
College Bound Students: 86%
Students At or Below Poverty Level: 30%

**Profile**

**Evaluation Period**
2000-2001

**Target Population**
Kindergarten - 2nd Grade

**Orchard Bundle**
K-3 Language Arts

**Findings**
Significant overall gains in performance were observed using the following test instruments: Developing Skills Checklist (DSC), Bloomer Learning Test (BLT), and the Iowa Test of Basic Skills (ITBS).

**Implementation Strategy**
Cartersville Primary used Orchard Software with a group of 38 at-risk students who were in the lower 10 percent of the school population. Students in the treatment group were given 40 minutes of Orchard instruction daily from November through February, in addition to their normal instruction during the school day.

**Student Performance Results**
In fall 2000, students were administered pretests using the following test instruments: Developing Skills Checklist (DSC), Bloomer Learning Test (BLT) and Iowa Test of Basic Skills (ITBS). In the Spring of 2001, students were administered posttests using the same test instruments (DSC, BLT, and ITBS).

Overall gains in performance were observed for all three tests.

- **DSC gains:** The treatment group scored an average of 35.8 in fall 2000, and 90.8 in spring 2001, representing a 61% gain.
- **BLT gains:** The treatment group scored an average of 15.4 in fall 2000, and 47.8 in spring 2001, representing a 68% gain.
- **ITBS Normal Curve Equivalency (NCE) gains:** The treatment group’s average ITBS Reading NCE total in fall 2000 was 30.1. In spring 2001, the average ITBS Reading NCE total was 34.77, representing a 13% gain.

![Score Chart](image-url)
South Edmonson Elementary School
Smith Grove, Kentucky

Edmonson County District Profile:
Ethnicity of Students: African-American 1%, American Indian <1%, Asian <1%, Hispanic <1%, Caucasian 98%
Students At or Below Poverty Level: 84%

Profile
Evaluation Period
2003-2004

Target Population
Kindergarten-5th Grade

Orchard Bundle
K-3 Math
4-6 Math

Findings
After using Orchard Math Software for one year, a significant gain in math scores on the Kentucky Core Content Tests (KCCT) was observed.

Implementation Strategy
As part of a plan to improve math scores on the Kentucky Core Content Tests (KCCT), all students at South Edmonson Elementary School in Smith Grove, Kentucky used Orchard Math Software daily (totaling an average of 2.5 to 3.5 hours per week) during the 2003-2004 school year.

Student Performance Results
In the Spring of 2003, students were administered the Kentucky Core Content Tests. Students received an average math score of 63. In the Spring of 2004, after using Orchard Math Software for one year, students were again administered the Kentucky Core Content Tests, receiving an average math score of 75 - representing a 16% gain.
**Mehlville District Profile:**
Ethnicity of Students: African-American 15%, Caucasian 84%
Students At or Below Poverty Level: 3%

**Profile**
- **Evaluation Period**
  2002
- **Target Population**
  5th Grade
- **Orchard Bundle**
  4-6 Language Arts

**Findings**
After only eight weeks of Orchard instruction, students who used Orchard had a larger average increase in reading scores than students who did not use Orchard.

**Implementation Strategy**
Two groups of students took part in Hagemann Elementary School’s eight-week summer school program. One group (the treatment group) used Orchard’s Language Arts software as part of their curriculum. The other group (the control group) received regular class instruction.

**Student Performance Results**
Both the treatment and control groups were administered an informal reading pretest. Both groups were then administered the same test again at the end of the summer school session. After only eight weeks of Orchard instruction (an average total of two hours and forty-five minutes), the treatment group had a larger average increase in scores than the control group.
Lang Ranch Elementary  
Thousand Oaks, CA

**District Profile:**
Ethnicity of Students: African-American 1%, Hispanic 4%, Caucasian 86%  
Students At or Below Poverty Level: 5%

**Profile**
- **Evaluation Period**
  2001-2002
- **Target Population**
  2nd Grade
- **Orchard Bundle**
  K-3 Math

**Findings**
Second-grade Stanford Achievement Test – Ninth Edition (SAT-9) math scores showed significant gains after a one-year exposure to Orchard software.

**Implementation Strategy**
Students at Lang Ranch Elementary used Orchard Software as a curriculum supplement and remediation tool, and also as an after-school intervention. Second-grade students were exposed to the software between 30 and 60 minutes a week for the 2001-2002 school year.

**Student Performance Results**
Second-grade Stanford Achievement Test – Ninth Edition (SAT-9) math scores showed significant gains after a one-year exposure to Orchard software. The average second-grade national percentile score in math for 2001 (before Orchard) was 80. The average second-grade national percentile score in language for 2002 (after Orchard) was 88, representing a 10% gain.

![SAT-9 Test Results](image-url)
**Research Initiatives**

**Case Study #8**

**Milan Elementary School**
Milan, Tennessee

**Milan District Profile:**
Ethnicity of Students: African-American 24%, Hispanic 1%, Caucasian 76%
College Bound Students: 60%
Students At or Below Poverty Level: 26%

### Profile
- **Evaluation Period**
  2001-2002
- **Target Population**
  3rd Grade
- **Orchard Bundle**
  K-3 Language Arts

### Findings
Students’ Terra Nova/Tennessee Comprehensive Assessment Plan (TCAP) median national percentile ranking increased by 15% in reading.

### Challenges/Goals of the Program
Educators at Milan Elementary School hoped to see a decrease in the number of students who scored below the fortieth percentile in each subject area on the Terra Nova/Tennessee Comprehensive Assessment Plan (TCAP) test.

### Implementation Strategy
The treatment group of 137 third graders from Milan Elementary went to the lab once a week for 60 minutes, using Orchard Software 90 percent of the time. The comparison group, a third-grade class from Trenton Elementary School (a similar school in a nearby district) did not receive any exposure to Orchard software.

### Student Performance Results
- **Treatment group:** 2001 Terra Nova/TCAP Reading median national percentile rank - 52
  2002 Terra Nova/TCAP Reading median national percentile rank - 61 **15% gain**
- **Comparison group:** 2001 Terra Nova/TCAP Reading median national percentile rank - 51
  2002 Terra Nova/TCAP Reading median national percentile rank - 51 **0% gain**

---

**Terra Nova TCAP Test Results**

<table>
<thead>
<tr>
<th>Subject</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milan</td>
<td>50</td>
<td>61</td>
</tr>
<tr>
<td>Trenton</td>
<td>50</td>
<td>51</td>
</tr>
</tbody>
</table>
**Piedmont Elementary**
Dandridge, TN

**Jefferson County District Profile:**
Ethnicity of Students: Caucasian 100%
Students At or Below Poverty Level: 18%

**Profile**

**Evaluation Period**
2001-2002

**Target Population**
4th Grade

**Orchard Bundle**
K-3 Language Arts
4-6 Language Arts

**Findings**

The treatment group’s Terra Nova/Tennessee Comprehensive Assessment Plan (TCAP) median national percentile rankings were 19% higher than the comparison group in the area of Language.

**Implementation Strategy**

The treatment group of 22 fourth-grade students used Orchard between 30 and 60 minutes per week for the 2001-2002 school year. Orchard software was used for remediation, for placement, to introduce new material, to challenge students, and as a reward center. The comparison group of 19 fourth-grade students had the same teacher the previous school year, but did not have any exposure to Orchard. Both groups had four special-education students.

**Student Performance Results**

Students in the comparison group were administered the Terra Nova/TCAP achievement test in the spring of 2001. Students in the treatment group were administered the same test in the spring of 2002, after a year of Orchard instruction. The treatment group’s Terra Nova/Tennessee Comprehensive Assessment Plan (TCAP) median national percentile rankings were 19 percent higher than the comparison group in the area of Language.

Comparison group: 2001 Terra Nova/TCAP Median National Percentile Score in Language: 55

Treatment group: 2002 Terra Nova/TCAP Median National Percentile Score in Language: 68

*19% difference*

**TCAP Achievement Test Results**

![TCAP Achievement Test Results graph]

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Case Study #10

Wilson's Mills Elementary
Wilson's Mills, NC

Johnston County District Profile:
Ethnicity of Students: African-American 24%, Hispanic 4%, Caucasian 72%
Students At or Below Poverty Level: 16%

Profile
Evaluation Period
2001-2002

Target Population
3rd Grade

Orchard Bundle
K-3 Math
4-6 Math

Findings
State end-of-grade (EOG) tests showed that students who used Orchard Software had higher average test scores than those who did not.

Implementation Strategy
The treatment group of 21 third-grade students used Orchard between 30 and 60 minutes per week for the 2001-2002 school year. Orchard was used as a core part of the curriculum. In addition, it was also used as a curriculum supplement and a remediation tool. The comparison group of 20 third-grade students at the same school did not have any exposure to Orchard.

Student Performance Results
North Carolina’s End-of-Grade (EOG) tests were created based upon North Carolina curriculum objectives. Students in both the comparison and treatment groups were administered the North Carolina EOG test in the spring of 2002. The average score for the treatment group was 23% higher than the average score in the comparison group.

Comparison group: 2001-2002 North Carolina End of Grade Test Percentile average score - 49.7
Treatment group: 2001-2002 North Carolina End of Grade Test Percentile average score - 64.5

End-of-Grade Test Results
Westside District Profile:
Ethnicity of Students: Native American 65%, Caucasian 35%
Students At or Below Poverty Level: 56%

Profile

<table>
<thead>
<tr>
<th>Evaluation Period</th>
<th>Findings</th>
</tr>
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<tbody>
<tr>
<td>2004-2005</td>
<td>Seventy-four third-grade students increased their proficiencies by 14.6%, while 81 fourth-grade students increased by 5%. The composite increase in proficiency was 9.8%.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Target Population</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>3rd – 4th Grade</td>
<td>Regardless of their initial proficiencies, third-grade students in each of the five classes improved their proficiencies by at least 12%.</td>
</tr>
</tbody>
</table>

Orchard Bundles
Language Arts K-9
Mathematics K-9

Implementation Strategy
More than 150 third- and fourth-graders took grade-level pretests in November, followed by six months of Orchard instruction prescribed to address each student’s specific remediation needs.

Student Performance Results
By the May posttest, students in both grades showed significant improvement. Westside’s third-graders showed the most significant gains by improving their proficiencies by 14.6%. Perhaps the most impressive fact is that students’ improvement was remarkably consistent regardless of initial skill level. Whether students began at high or low mastery levels, all showed similar gains indicating that Orchard Software not only effectively remediates low-performing students, but also enriches high-performing students.

Orchard Test Scores (Percentages)

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Change</th>
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<tbody>
<tr>
<td>Grade 3</td>
<td>74</td>
<td>57.8</td>
<td>71.4</td>
<td>+14.6</td>
</tr>
<tr>
<td>Grade 4</td>
<td>81</td>
<td>68.0</td>
<td>73.0</td>
<td>+5.0</td>
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<tr>
<td>Composite</td>
<td>155</td>
<td>62.9</td>
<td>72.2</td>
<td>+9.8</td>
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</tbody>
</table>

Third-Grade Test Scores (Percentages)

<table>
<thead>
<tr>
<th></th>
<th>Pretest</th>
<th>Posttest</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher A</td>
<td>71.0</td>
<td>83.0</td>
<td>+12.0</td>
</tr>
<tr>
<td>Teacher B</td>
<td>62.0</td>
<td>74.0</td>
<td>+12.0</td>
</tr>
<tr>
<td>Teacher C</td>
<td>62.0</td>
<td>79.0</td>
<td>+17.0</td>
</tr>
<tr>
<td>Teacher D</td>
<td>53.0</td>
<td>68.0</td>
<td>+15.0</td>
</tr>
<tr>
<td>Teacher E</td>
<td>41.0</td>
<td>53.0</td>
<td>+12.0</td>
</tr>
</tbody>
</table>
Deer Park District Profile:
Ethnicity of Students: Caucasian 92%, Hispanic American 3%, Asian American 3%, Native American 2%
Students At or Below Poverty Level: 54%

Profile

Evaluation Period
2004-2005

Target Population
7th Grade

Orchard Bundles
Language Arts 4-6
Mathematics 4-6

Findings

Orchard Software’s assessment program can show how students might fare on state tests. In Deer Park, WA, independent research shows that low scores on Orchard 7th-grade assessments can indicate which students are in danger of failing the WASL 7th-grade tests.

Challenges/Goals of the Program
Students in the state of Washington must pass the WASL (Washington Assessment of Student Learning) in order to graduate with a high school diploma. The test is administered in elementary, middle, and high school. Administrators at Deer Park Middle School want to know if Orchard Software will show a relationship between its assessments and the WASL results.

Implementation Strategy
Utilizing Orchard’s formative assessment capabilities, students were targeted for remediation until scores met Orchard/WASL standards. Once students met these standards they were taken out of remediation classes and placed back into core curriculum classes.

Student Performance Results
Orchard assessments showed a statistically significant relationship to WASL assessments, providing Deer Park educators with invaluable information. Based on the Orchard assessments, educators were able to provide intensified remediation for these students. The research also surmised that the Orchard 7th-grade assessments feature a moderate to high reliability (as measured by the Cronback’s alpha statistic – reading: 0.846; math: 0.763).
Hamilton Elementary School
Memphis, Tennessee

Westside District Profile:
Ethnicity of Students: African-American 87%, Caucasian 9%, Hispanic American 3%, Asian 1%
Students At or Below Poverty Level: 75%

Profile

Evaluation Period
2003-2004

Target Population
K – 5th Grade

Orchard Bundles
Language Arts K-6
Mathematics K-6

Findings

Scores on the Terra Nova/TCAP achievement test showed significant gains after students were exposed to Orchard Software for one year.

Challenges/Goals of the Program
Students at Hamilton Elementary School were performing well below district proficiency levels in mathematics and reading, which placed the school on Tennessee’s “low-performing” list. Administrators hoped to implement supplemental software with targeted instruction and formative assessments to increase learning and raise test scores.

Implementation Strategy
The treatment group of 654 students, grades kindergarten through fifth grade, used Orchard Software between 30 and 45 minutes per week for the 2003-2004 school year. Orchard was used for remediation, for placement, to introduce new material, to challenge students, and as a reward center.

Student Performance Results
Students were administered the Terra Nova/TCAP achievement test in the spring of 2003. Students were administered the same test in the spring of 2004, after one year of Orchard instruction. In the area of mathematics, students increase from a level of 57.4% proficiency to a level of 78% proficiency. In reading/language plus writing, scores rose from 69.6% proficiency to 88% proficiency. This increase in scores for all subgroups brought the school from a status of low-performing to an eligibility status of good standing.

TCAP (Tennessee Comprehensive Assessment Program) Scores

<table>
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<tr>
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<th>Pre-Orchard</th>
<th>Post-Orchard</th>
<th>Increase</th>
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<tbody>
<tr>
<td>Mathematics</td>
<td>57.4%</td>
<td>78.0%</td>
<td>+20.6%</td>
</tr>
<tr>
<td>Reading, Language &amp; Writing</td>
<td>69.6%</td>
<td>88.0%</td>
<td>+18.4%</td>
</tr>
</tbody>
</table>
Evidence of Effectiveness
Mississippi Department of Education
State Endorsed List for K-3 Scientifically-Based Supplemental Reading Programs
359 North West Street
P.O. Box 771
Jackson, MS 39205-0771
Sonja Truesdell
Phone: (601) 359-3778

Illinois Department of Education
Approved Supplemental Reading Program
100 North First Street #C-215
Springfield, Illinois 62777-0001
Phone: (217) 557-7323

Louisiana Department of Education
Approved Supplemental Reading Program
1201 North Third Street
P.O. Box 94064
Baton Rouge, LA 70804-9064
(225) 342-3513
1201 North 3rd Street
Baton Rouge, LA 70802
Mickey Pounders
Phone: (225) 219-4507

Nevada Department of Education
Nevada Education Reform Act (NERA): List of Effective Remedial Programs
Legislative Bureau of Educational Accountability and Program Evaluation
700 East Fifth Street
Carson City, Nevada 89701

New York City Board of Education
Office of Purchasing Management
Contract for Approved Educational Software Purchases
46-36 Vernon Blvd., Room 609A
Long Island City, NY 11101
Phone: (718) 361-3832

New Mexico State Text Book Adoption
State of New Mexico
Department of Education
Instructional Materials Bureau
120 South Federal Place, Room 206
Santa Fe, NM 87501-2786
Phone: (505) 827-1801

California Learning Resource Network
Approval Listing
1100 H Street
Modesto, CA 95354
Phone: (209) 525-4832

North Carolina Media Evaluation Center
Approved Educational Software List
301 N. Wilmington Street
Raleigh, NC 27601
Gerry Solomon
Phone: (919) 807-3286

Charlotte Mecklenburg School District
Large District Approval and Purchase
701 East Second Street
Charlotte, NC 28202
Technology Integration - Karen Ganzert
Phone: (704) 343-5410
Instructional Integration - Muffet Garber
Phone: (704) 343-3998

Clemson University
South Carolina Center of Excellence for Instructional Technology Training
Approved Educational Software List
200 Tillman Hall
Clemson, SC 29634
Katherine Smith
Phone: (864) 656-5093

Houston ISD
Accelerated Reading Intervention and General Approval Listing
3830 Richmond Avenue
Houston, TX 77027
Gabrielle Coleman
Phone: (713) 892-7214
EVIDENCE OF EFFECTIVENESS

STORIES OF SUCCESS

“Overall, an excellent tool for using technology in the curriculum.”
– Amy Stanley, Technology Facilitator, Wilson’s Mills Elementary School, Wilson’s Mills, NC

“All of our teachers are absolutely thrilled with this program. We cannot ‘sing its praises’ enough! This program is perfect for our school.”
– Pam Heath, Administrator/Lead Teacher, Kennedy Home, Kinston, NC

“My students love working with Orchard. Orchard provides such great variety of teaching concepts and techniques that cater to my student’s individual needs. Students love working on the lessons and playing the challenging reward games that immediately follow. Orchard challenges the advanced students while providing reinforcement skills for those who need reinforcement.”
– Tammy Russell, Central Elementary School, Idabel, OK

“Orchard software is a great addition to my classroom. The practice format helps to pinpoint the needs of the student and to reinforce skills taught in the classroom.”
– Kathryn Sisco, 4th grade teacher, John Hay Elementary, Morristown, TN

“Our students, parents, and teachers love all of the trees we have purchased and eagerly want to purchase more. The students do not think of Orchard as work, but as an exciting program that challenges them intellectually…. Teachers value Orchard because it is truly academic in nature, but presents itself in a very child-friendly way. The management system and various levels make Orchard a great tool to assist teachers with meeting the individual needs of all students.”
– Kristin Seay, E.L. Wright Middle School, Columbia, SC

“I truly believe that these programs helped to raise our test scores….The programs are interactive, engaging and educational all at the same time.”
– Janet Butler, Technology Specialist, Bryan County Elementary School, Pembroke, GA

“Excellent correlations to standards, objectives, etc.”
– Dora Higgins, Marie Riviere Elementary School, Metairie, LA

“Teachers found the management system to be user-friendly and eagerly jumped into making individual assignments for their students. The print-outs, giving student scores and mastery levels, were used to encourage students and show student progress to parents.”
– Ellen F. Andrews, Principal, Clay Elementary School, Clay, AL

“Orchard allows me to provide modified enrichment for each student in my class.”
– Tabetha Esposito, Windmill Point Elementary School, Port St. Lucie, FL

“Orchard is easy to use and the children love it….The program is fantastic. Don’t change anything!”
– Scott Garner, YMCA of Greensboro, Greensboro, NC
“The programs are wonderful and add extra excitement to learning.”
– Vicki White, Cold Water Elementary School, St. Louis, MO

“I think this program is a real asset to my classroom curriculum and teaching. I use it for remediation, placement, to introduce new material, challenge brighter students, and as a reward center.... I just wish I had more computers in my classroom so I could keep students working with Orchard all during the day.”
– Terry Sams, 4th Grade Teacher, Piedmont Elementary, Dandridge, TN

“The program provides both students and teachers an abundance of valuable ‘fruits’ to be harvested.”
– Carolyn Weaver, Threadgill Primary School, Sheffield, AL

“As we move into the fourth quarter of the school year and approach the Standards of Learning tests, I continue to hear nothing but positive reactions from teachers using Orchard software. For the first time, many teachers feel they have found a resource that allows them to tailor the skill practice in such a way to support remediation and review. The students are challenged and motivated by the program, and enthusiastic about the learning games. The variety of activities allows the software to be valuable in the classroom with one computer as well as in a computer lab.

“The ease of use is probably the most repeated comment. Teachers have found the instructional management system supportive of student assessment. Most valued is the ability to customize the programs to meet classroom and student needs. With accountability and the impact of state standards testing looming over instruction, integration of instructional software is of heightened importance. With Orchard, we definitely found a software program that is affordable, reliable, and supportive of instruction. The teaching component that explains correct responses makes Orchard unique among a variety of software currently available for integration into the classroom.”
– Rose Marie Dillon, Language Arts Curriculum Specialist, Fairfax County Public Schools, Fairfax, VA

“We are excited about the quality of networkable software that your company has provided us at such reasonable prices. Having purchased from other distributors in the past, we are amazed at the range and versatility of the programs at a fraction of what we have invested for comparable programs. Both students and teachers are thrilled with the investment.”
– Martha Howell, Principal, Eastside Elementary, Sallisaw, OK

“We are quite satisfied using this program in our district for the following reasons:
- Orchard is aligned with the MS Curriculum Frameworks. It is critical that supporting instructional materials ‘mirror’ the state curriculum and state assessments.
- Orchard is a valuable tool in instructional interventions. Our teachers report that Orchard is an effective and efficient resource in developing and implementing individualized instructional interventions.
- Orchard is teacher friendly. Minimal training is required for complete utilization of Orchard.
- Orchard comes with excellent support at the state and corporate levels.”
– Carol R. Stigler, Senstobia Municipal School District, Senstobia, MS

“Since the addition of Orchard software to our computer lab, I have seen a new level of excitement and participation by students at all levels of the school. I am confident that this will translate into improved scores in the areas of reading and math.”
– Vic Stewart, Principal, North Jackson Elementary School, Jackson County, GA
EVIDENCE OF EFFECTIVENESS

STORIES OF SUCCESS

“While at a Library and Media Specialists get-together, I picked up a demo CD and information on Orchard. I immediately liked the component ‘Orchard for Your State’ because it contained state-specific assessment and accountability....The pretest determined the standards the students were struggling with and showed specifically where remediation was needed. When we found out that the computer would even assign what was needed to help our students master those standards and improve their performance, we said, ‘This is EXACTLY what we need!’…I think the best endorsement for this program is one child exclaimed as he went into the lab, ‘Please, let’s do Orchard today!’ He didn’t choose any other program we had to offer, but the one program which actually diagnoses, gives skills practice, and re-evaluates.”
– Brenda S. Robinson, Principal, Thomas Street Elementary School, Tupelo, MS

“I am very impressed with the software.... It allows us to keep the computer as a learning tool. It encourages the students to progress. The activities are fun for students while they meet the goals necessary for their education. The control and reports it offers teachers are invaluable.”
– Jean Kennedy, Technology Coordinator, St. Aloysius School, Springfield, IL

“We have found the software to be encouraging for students with motivation skills that have kept the students interested over a long period of time and have enhanced academic skills tremendously.”
- Deb Hulsey, Computer Teacher, Oakcrest Elementary, Ocala, FL

“This is the third year we have used Orchard at West Armory Elementary. It is one of the most powerful software packages that we have ever used.... For the past two years we have seen a drastic increase in our test scores. The teachers attribute this increase to the use of Orchard. We use the program school wide and feel that has a great impact on student performance. There are not enough words to express how strongly we feel about the Orchard Software and the instructional rewards we are seeing from using it.”
– Nancy Sullivan, Principal, West Amory Elementary School, Amory, MS

“Thank you for your time and effort in making sure our students have the very latest in technology and software as we strive together to improve the academics of our children.”
– Charles F. McDaniel, Principal, Carver Middle School, Leesburg, FL

“I have been using the Orchard 7th & 8th grade language arts for one year. Several students were able to master the skills and were able to be listed on the honor roll for the first time in their school career after just four weeks. Many of the students liked the programs so well that they stay indoors during their recess to work on their skills. All students have achieved better marks in their regular classroom because they have worked on Orchard computer programs. I am pleased with the results.”
– Jeanette Anderson, Title I Teacher, Terry School, Terry, MT

“My classes that have been introduced to the Orchard programs have enjoyed them very much so far. I know there will be an improvement in their grades from working with these programs.”
– Bettye J. Sutton, College Park Elementary, Ocala, FL

“Students in my Learning Disability classroom used this program to reinforce direct instruction in reading. Seven out of eight students exhibited gains.”
– Jean Suttenfield, Brookville Middle School, Lynchburg, VA
There are orchards growing in elementary school computer labs across the county. Complete with dozens of skill trees – or activity levels – new educational software, called Orchard, was planted last fall in the county’s 12 elementary schools....

With Orchard, the lab instructor meets with teachers weekly to discuss what each class/grade is working on. Then, the lab instructor can assign specific “skill trees” to students. A skill tree is a program that teaches a specific concept, such as multiplication, vocabulary, probability or grammar. With over 130 skill trees that teach over 3000 key skills, there is plenty to choose from.

Michele Page, a first grade teaching assistant at Beach Elementary said, “It goes along with what they’re learning by using phonics....They enjoy it, I enjoy it....This day and age they really need computers,” Page said.

Lab time varies from school to school, but generally the students are at the computers twice a week for at least 20 minutes.

Calvert Elementary School’s principal, Jeff Walker, is impressed with the new system. “Things have gone really well, there’s lots of potential we are all tapping into,” said Walker. “I walk by and see teachers using it in the classroom a lot.”

New schools in the county are outfitted with at least five computers in each room, one for the teacher and four student stations. The software is such that it costs the same to the school regardless of how many computers are running it. Each station is networked to the lab so it can run the Orchard software. This “open site” licensing helped school officials choose this software over others....

As Assistant Superintendent for Instruction Carol Reid explained, in addition to costs, the small size of the company helped make the decision to use Orchard software. “They (Orchard technicians) have been very responsive to our needs in developing software for us,” Reid said....

The real customers, the students, seem to love the program. Every twenty minutes at Beach Elementary – as well as other schools throughout the county – 10 to 15 students file into the computer lab. They all quietly take their seats and begin typing their logins. Some questions do arise from the youngsters, but soon everyone is content and learning again through the computer teaching aid....

“It is another tool for teachers to use, just like books. (Orchard) is a dynamic, interactive and engaging way to provide lessons,” Reid said.

Reid believes that the school system has struck a nice balance between student and teacher social skills and computer learning.

She also hopes that all classrooms will be able to incorporate a three-part learning situation. Traditional whole group teaching would be supplemented with small groups of children working together in project groups and individuals working on computers.

The software, which incorporates a strong phonics program with literature based reading, computational math, practice and guided comprehension programs, is geared towards helping students achieve state standards in learning. This balance between classroom and computer learning will help the Calvert school system continue to function at the high level of excellence in education that it is known for.
Research-Based Background
How Orchard Software Implements Marzano’s Nine Effective Strategies

In the book, *Classroom Instruction that Works*, Research-Based Strategies for Increasing Student Achievement, authors Robert Marzano, Debra Pickering, and Jane Pollock identify nine effective teaching strategies for improving student achievement. Without a doubt, the No Child Left Behind Act is creating greater emphasis on student achievement and teacher accountability as measured by high-stakes tests. As a result of NCLB funding rules and ever-tightening budgets, school leaders rely on trustworthy research to aid in the decision-making process regarding software and hardware purchases.

Marzano’s nine effective strategies are based on a meta-analysis done by the Mid-Continent Research for Education and Learning [McRel]. McRel analyzed over 100 research studies on a variety of instructional strategies used by teachers in K-12 classrooms. He identified nine instructional strategies that have the most influence on student achievement.

This document summarizes how we feel Orchard Software Skill Trees reflect one or more of Marzano’s strategies or can be used as tools in conjunction with these strategies. We invite you to read this document and learn how Orchard Software can be used as tool to reinforce effective teaching.


**Similarities & Differences**

**Marzano Strategy**

The most effective method for improving student academic achievement is by having students identify similarities and differences using graphic organizers and Venn diagrams. Marzano’s research suggests students’ understanding and ability to apply knowledge increases when they use symbolic forms to represent similarities and differences.

**Orchard Application**

Many Orchard Skill Trees utilize graphic organizers and symbolic forms, including:

- Guided Comprehension
  - Reading & Writing Strategies
  - Writing Process Series
  - Data Management
  - Earth, Life, Physical, & General Science Concepts
- Geometry
- Measurement
- Number Sense
- Patterning & Algebra
- Math Strategies
- Cells & Tissues

**Summarizing & Note Taking**

**Marzano Strategy**

Many students enter high school without having formal instruction on summarizing and note taking. Yet, according to Marzano’s research, this is the second-most effective strategy in improving student achievement.

**Orchard Application**

Many Orchard Skill Trees focus on the development of summarization and note-taking skills, including:

- Book Maker
- Writing Assessment
- Guided Comprehension
- Reading and Writing Strategies
- Reading, Research, and Language Skills
- High School Reading and Writing Exit Skills
- Reading Comprehension and Critical Thinking
- Reading Comprehension
- Reading for Main Idea
- Writing Process Series

**Reinforcing Effort & Providing Recognition**

**Marzano Strategy**

People generally attribute success at any given task to one of the following four causes: ability, effort, other people, and luck. Students can see the connection between effort and achievement by periodically keeping track of their effort and its relationship to achievement. Abstract symbolic recognition is more effective than tangible rewards.

**Homework & Practice**

**Marzano Strategy**

Less homework should be assigned to younger students than to older students. Parent involvement in homework should be kept to a minimum. The purpose of homework should be identified and articulated. If homework is assigned, it should include teacher comments. Mastering a skill requires a fair amount of focused practice.
ReseaRch-based baCkground

Orchard Application

All Orchard Software Skill Trees reinforce effort by providing students with immediate feedback. In addition, teachers have the ability to create detailed student and class reports, which can be used as a tool for recognition.

Orchard Application

Orchard Software’s School-to-Home Licensing allows students to work at home on the same standards-based curriculum that is being taught at school. Utilizing educational software that motivates is a fun way for students to practice skills that are introduced at school.

Nonlinguistic Representation

Marzano Strategy

Students are able to recall information better when using nonlinguistic representation while learning. Strategies such as pictographs, mental images, physical models, time sequences, episodes, and generalizations reinforce this skill.

Orchard Application

Nonlinguistic representations are embedded throughout Orchard Skill Trees, such as:

- Data Management
- Geometry
- Measurement
- Money
- Number Sense
- Numeration
- Patterning & Algebra
- Geometry & Spatial Sense
- Graphing & Managing Data

Setting Objectives & Providing Feedback

Marzano Strategy

Setting Objectives: Instructional goals narrow the areas where students should concentrate. Students should be encouraged to participate with teachers in creating goals. Providing Feedback: Feedback should be “corrective,” explaining to students what they are doing correctly and incorrectly. Feedback should also be timely and specific.

Orchard Application

Orchard Software allows teachers to create individual student assignments with a mastery and skill level that can change from student to student. This allows students to concentrate only on the skills requiring remediation. Orchard Software also provides immediate feedback and tutorial skill activities.

Cooperative Learning

Marzano Strategy

Most classrooms do not have a one-to-one student-to-computer ratio. Getting computer access for all students without using a computer lab is sometimes tricky. The Reading, Research, and Language Skill Tree develops the skills outlined by Marzano. Flowcharts, graphic organizers, topic maps, 5W-H charts, and outlines are utilized in this Skill Tree, which can easily be assigned for individuals or small groups.

Orchard Application

The Reading, Research, and Language Skill Tree develops the skills outlined by Marzano. Flowcharts, graphic organizers, topic maps, 5W-H charts, and outlines are utilized in this Skill Tree, which can easily be assigned for individuals and small groups.
Cues, Questions, & Advance Organizers

*Marzano Strategy*

Cues and questions should focus on what is important rather than what is unusual. Higher level questioning – an effective tool when incorporated prior to a learning experience – promotes deeper thinking.

**Orchard Application**

Several Orchard Skill Trees incorporate this type of questioning:

- Writing Process Series
- Reading and Writing Strategies
- Reading, Research, and Language Skills
- Guided Comprehension
- Data Management

Generating & Testing Hypotheses

*Marzano Strategy*

Generating and testing hypotheses are powerful instructional strategies because they involve the application of knowledge.

**Orchard Application**

Students develop the skills necessary to generate and test hypotheses in the following Orchard Skill Trees:

- Geometry and Spatial Sense
- Math Word Problems
- Measurements
- Math Strategies
- Life Science Concepts
- General Science Concepts
- Biology Exit Skills
- Biology Concepts
- Green Plants
Teaching young students to read is one of the most important tasks facing today’s educators. In an attempt to identify the critical components essential to early reading education, the National Reading Panel (NRP) conducted a thorough analysis of existing scientific research on early reading instruction. Upon review of over 100,000 studies on how students learn to read, the NRP concluded that effective early reading instruction includes five key components: phonemic awareness, phonics, fluency, vocabulary, and comprehension. The Reading First initiative, enacted as part of the No Child Left Behind Act of 2001, promotes the use of scientifically based research to provide high-quality reading instruction for grades K-3 and builds upon the NRP’s findings regarding these key components of early reading. In accordance with the findings of the NRP and the guidance set forth by Reading First, six series of programs in Orchard’s Language Arts K-3 Bundle provide systematic and explicit instruction in the essential components of early reading instruction. See the following pages for more details or refer to Appendix A (“The IDEA Consumer’s Guide to Evaluating a Core Reading Program Grades K-3: A Critical Elements Analysis” by Simmons & Kame’enui).

**Reading First**
- The five key components of early reading should be taught systematically and explicitly. They include:
  1. Phonemic Awareness
  2. Phonics
  3. Fluency
  4. Vocabulary
  5. Comprehension

- A high-quality reading program must include instructional content integrated into a coherent instructional design.

- Standards and accountability are the foundations of the Reading First classroom.

**Orchard**
- Orchard’s Language Arts K-3 Bundle offers systematic and explicit instruction in the five key components of early reading through the following six series.
  1. Phonemic Awareness
  2. Phonics Sequences
  3. Reading Links
  4. Vocabulary Builder
  5. Guided Comprehension
  6. Reading Realities

- Orchard’s coherent instructional design consists of:
  1. Explicit, individualized instruction
  2. Coordinated instructional sequences
  3. Ample practice opportunities
  4. Aligned student materials
  5. Pretests to diagnose student needs
  6. Posttests to measure progress
  7. Professional Development resources

- The content of Orchard’s language arts programs directly correlates to common national objectives and state content standards. In addition, each series includes a powerful management system, which actually monitors students’ progress toward mastering state content standards.
Upon analysis of 52 scientifically based reading research studies, the NRP concluded that phonemic awareness is an essential component of reading instruction.

NRP Definition: The ability to hear, identify, and manipulate the individual sounds, or phonemes, in spoken words.

**NRP Finding**

- Instructing children explicitly and systematically to manipulate phonemes is highly effective in improving reading ability. Teaching just one or two types of phoneme manipulation is likely to produce the greatest benefit to young students.

- Phonemic awareness instruction is most effective when children are taught to manipulate phonemes by using the letters of the alphabet.

- Instruction must be suited to the student’s level of development.

- Single sessions averaging 25 minutes can be effective.

**Phonemic Awareness Series**

- Through multiple exposures, repetition, and a mastery-based approach, the Phonemic Awareness series of programs systematically teaches the important strategies of phoneme identity and phoneme isolation.

- The alphabetic system (including letter shapes, names, and sounds) is reinforced throughout the Phonemic Awareness series.

- A pretest determines which phonemes need instruction and places a student at the appropriate instructional level. Teachers may set parameters for individualized instruction.

- Students can exit the program at any time. The program will bookmark where the students left off and begin there for the next session.

**Program description**

Phonemic Awareness, a three-level series, grew out of a 10-year research and development effort by educators in Gainesville, Florida. Students are able to hear, identify, and repeat over 100 phonemes in spoken words. The program demonstrates to students how the sounds of spoken language work together to make words. Students must demonstrate 100 percent mastery of sounds to letters, sounds to pictures, and sounds to words. This 100 percent mastery requirement, with continual evaluation and review, ensures not only mastery of each phoneme, but retention as well.
Upon analysis of 38 scientifically based reading research studies, the NRP concluded that phonics is an essential component of reading instruction.

NRP Definition: The understanding that there is a predictable relationship between the sounds of spoken language (phonemes) and the letters of written language (graphemes).

NRP Finding

- Systematic phonics instruction produces significant benefits for elementary students and for children having difficulty learning to read. Some benefits of systematic phonics instruction are improved decoding, spelling, comprehension, and oral reading skills.

- Effective phonics programs provide ample opportunities for application of learning about letters and sounds to reading of words, sentences, and stories.

- Systematic phonics programs should be implemented as early as kindergarten and first grade.

- Teachers need to be flexible in their phonics instruction in order to adapt it to individual student needs.

- A phonics program (techniques and activities) should be relevant and motivating.

Phonics Sequences Series

- The Phonics Sequences series systematically teaches students how to form words phonetically and use these words immediately in sentences and stories. Systematic progression leads to acquisition of word recognition, decoding, spelling, comprehension, and oral reading skills.

- Phonics Sequences activities give students multiple opportunities to practice and apply what they have learned. Sentences and short stories present opportunities for students to move from decoding to sight word recognition.

- The Phonics Sequences series is available for grades K-2.

- A pretest determines skills that need remediation and places students at the appropriate instructional level within the series. Teachers may then set parameters for individualized instruction.

- Constructive feedback and a variety of activities reflect a positive approach to reading instruction.

Program description

Phonics Sequences, a series of four systematic phonics instruction programs, empowers early and emergent readers to increase decoding and word recognition skills. Students do this by recognizing how letters and sounds are connected and then applying this knowledge to meaningful text. Using a sequential approach, students are introduced to letters, learn key sounds and blends, and then transfer their learning to read sight words, sentences, and paragraphs.
Upon analysis of 47 scientifically based reading research studies, the NRP concluded that **fluency** is an essential component of reading instruction.

**NRP Definition:** The ability to read text accurately and quickly.

### NRP Finding
- Fluency requires high-speed word recognition practiced in a meaningful context.
- Students can become more fluent readers if provided with models of fluent reading.
- Repeated oral reading practice has a positive impact on word recognition, fluency, and comprehension.
- Students must be able to divide text into meaningful chunks, including phrases and clauses, in order to read with expression.

### Reading Links Series
- Students see and hear focus words they will encounter in the story and subsequent activities. Teachers are able to evaluate a reader’s accuracy, speed, and expression.
- Several Reading Links activities give students the opportunity to reread text by following along with a narrator who models appropriate reading techniques. Students are also given the opportunity to reread the passage orally themselves with a recording feature.
- Students engage in repeated oral reading to improve fluency and word recognition. Comprehension skills are reinforced throughout the program through various reading, spelling, and writing activities.
- Fluent reading is modeled in story reading, including phrase reading.

**Program Description**
The Reading Links series consists of five grade-specific programs (covering pre-primer through third grade) that teach the basic components of reading and writing. Eleven sequential activities are designed to build skills from basic word recognition and fluency to comprehension and evaluation. Teachers can change the order of the activities if necessary. The activities emulate auditory and visual approaches often used in successful early education and primary reading programs. Books on tape, read-alouds, shared reading, sentence strips, guided question-and-answer sessions, modeling, reviewing texts to locate answers, and using conventions of print are examples of such practices.
Upon analysis of 50 scientifically based reading research studies, the NRP concluded that vocabulary development is an essential component of reading instruction.

NRP Definition: Development of stored information about the meanings and pronunciation of words necessary for communication. There are four types of vocabulary: listening, speaking, reading, and writing.

NRP Finding

• Vocabulary instruction leads to gains in comprehension.
• The larger the reader’s vocabulary (either oral or print), the easier it is to make sense of the text.
• The use of computers in vocabulary instruction can be more effective than some traditional methods.
• Repetition and multiple exposures to vocabulary items are important.
• Vocabulary instruction should actively engage the student.

Vocabulary Builder Series

• The Vocabulary Builder series offers opportunities to identify key sight words in a sentence. Students spend less time decoding, which impacts fluency and leads to gains in comprehension.
• The Vocabulary Builder series provides exposure to over 600 grade-level words that are found in basal reading series.
• The Vocabulary Builder series provides bimodal (aural-visual) word presentation. Speaking rates can be adjusted to suit the individual learner.
• The repeated exposure technique is used to enhance vocabulary development and to speed lexical retrieval through the delivery of vocabulary and spelling instruction.
• Constructive feedback and a variety of activities reflect a positive approach to reading instruction.

Program Description

The Vocabulary Builder series is designed to improve aural and visual word recognition, enhance fluency, and speed lexical retrieval through the delivery of vocabulary and spelling instruction. New vocabulary words are introduced in meaningful sentence contexts. Students automatically decode the most common words of English while drawing on background knowledge to construct meanings for texts. This effective series of programs, developed by a Title I teacher, helps learners progress more efficiently from their initial guesses about new words to the automatic processing needed for fluent reading. The Vocabulary Builder series cultivates an essential ingredient for lifelong literacy—vocabulary—by tailoring the content to students’ developing needs in reading and other curricular areas.
Upon analysis of 205 scientifically based reading research studies, the NRP concluded that **comprehension** is an essential component of reading instruction.

**NRP Definition:** Strategies for understanding, remembering, and communicating with others about what has been read.

**NRP Finding**
- Vocabulary development and instruction play a major role in understanding what has been read.
- Comprehension is an active process requiring interaction between the reader and the text.
- Comprehension is most effectively improved when a combination of specific cognitive strategies or techniques is used, such as:
  1. Comprehension monitoring
  2. Story maps or other graphic organizers
  3. Question answering
  4. Story structure
  5. Summarization

**Guided Comprehension Series**
- This series presents key vocabulary terms and definitions before each story. A motivating quiz show allows for practice.
- Writing activities are provided throughout the program to encourage students to interact with the concepts in the text.
- This series incorporates multiple comprehension strategies and techniques such as:
  1. Highlighted text for answer help provides guidance and encourages students to monitor their comprehension.
  2. Story maps help students organize story elements.
  3. Students answer comprehension questions and receive immediate feedback.
  4. Interactive concept maps and visual clues reinforce the story structure.
  5. Students summarize by retelling and paraphrasing.

**Program Description**
Using intriguing themes, the Guided Comprehension series offers students the chance to explore different reading environments (such as narrative, informative, persuasive, and work texts) while strengthening their comprehension, creativity, and higher-order thinking skills. Emphasis is placed on mastering comprehension and literary skills rather than decoding. Forty-two literal, inferential, critical, and visual reading skills are emphasized throughout the Instruction, Practice, and Application phases of the programs. Students are encouraged to make predictions about what they will read, learn new vocabulary words, develop literacy skills, and reflect upon progress.
Upon analysis of 205 scientifically based reading research studies, the NRP concluded that **comprehension** is an essential component of reading instruction.

**NRP Definition:** Strategies for understanding, remembering, and communicating with others about what has been read.

<table>
<thead>
<tr>
<th>NRP Finding</th>
<th>Reading Realities Series</th>
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<tbody>
<tr>
<td>Vocabulary development and instruction play a major role in understanding what has been read.</td>
<td>Key vocabulary words are presented before each story and students can retrieve key word meanings throughout the text.</td>
</tr>
<tr>
<td>Comprehension is an active process requiring interaction between the reader and the text.</td>
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</tr>
<tr>
<td>Comprehension is an active process requiring interaction between the reader and the text.</td>
<td>Students interact with the text by sharing their opinions and thoughts through writing activities.</td>
</tr>
<tr>
<td>Instruction of comprehension strategies such as comprehension monitoring, question answering, and summarization should be explicit.</td>
<td>This series, which is based on the Directed Reading-Thinking Approach, models effective comprehension strategies, which students can then practice and apply.</td>
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</table>

**Program Description**

The Reading Realities series, based on the well-researched Directed Reading-Thinking Approach (DRTA), consists of five modules (covering first through sixth grade) and 45 relevant stories that students can relate to on a daily basis. Students are motivated to interact with meaningful text through reading, writing, speaking, and listening activities. With this series, students have the opportunity to engage in “real reading” as they deal with real-life issues.

Series Description
Students compete against Buzz the Bee in these interactive spelling bee activities. In Spelling Bee, points are earned for correct spellings, and the player with the highest score after ten words is the winner. Do you want the contest to be easy, a little hard, or a real challenge? In an easy game, Buzz will be slow on his buzzer; for a real challenge, Buzz will be quick to buzz in. The two-player game allows students to compete against their fellow classmates.

The teacher may use the generic lessons in the product or may input her own words. The 10 words in each lesson share a letter or sound pattern, or (in about 15% of the words in levels 3-6) relate to a subject area (e.g., science words). The patterns for the lessons were selected by SLG language arts consultants after checking commonly used language arts textbooks. These findings demonstrate for students that a) there are common letter patterns that apply to the sounds in the English language, but b) the patterns have more than a few exceptions, and one sound can be represented by a variety of letter combinations.

About 70% of the words were taken from the reading basal products of publishers such as Houghton-Mifflin, Macmillan, Scott-Foresman, and SRA. Many of the context sentences for these words were also taken from the basal readers. For words for which no such sentence was available, the sentences were written by SLG language arts staff and consultants. Words from the Dolce list that are three letters or longer were also included.

Research Background
Over the past 50 years, spelling in the curriculum has swung between two extremes: the notion that memorizing word spellings will make you a good speller (i.e., spelling is a drill), and you will pick up the spelling of words simply by reading and writing a lot. Current thinking in the language arts field takes a different stance: In addition to its use in reading and writing, a focus on spelling should emphasize the relationship of letters to sounds and give students the opportunity to learn about and practice spellings through a variety of methods. Following are some expert views.
Research Shows

  We learn best by active involvement and practice with the task at hand, which allow us to see word and letter patterns for ourselves. Research suggests that the brain is a pattern detector, rather than an applier of rules (Cunningham, 2000).

  Students in the primary grades learn to recognize and decode printed words, developing the skills that are the foundations for independent reading. They discover the alphabetic principle (sound-symbol match) and learn to use it in figuring out new words. They build a stock of sight words that helps them to read quickly and accurately with comprehension.

  “. . . since the 1970s, a whole generation of children in America may have been disfranchised from spelling instruction because authorities told teachers that children learn to spell by reading; consequently, many children grew up without spelling instruction” (p. 2). “Teachers must match the student with the word and patterns that are just right and select appropriate methods and materials to meet the individual’s needs. Instruction is then provided to increase the student’s word-specific knowledge” (p. 42).

Spelling Buzz Series

- The application of “word study” provides students an opportunity to manipulate words (and parts of words) in meaningful and enjoyable activities and games. Reading ability can develop dramatically as word study lessons help develop experience with:
  - letters and their corresponding sounds;
  - components of words such as roots, prefixes, and suffixes; and
  - patterns of how words are spelled, such as word families.

- Readers integrate word meanings (semantics), sentence structure (syntax), and sound-symbol relationships or visual (graphophonic) cues to receive information.

- General teaching principles:
  - Teach spelling explicitly.
  - Don’t use “one size fits all” methods.
  - Students progress through the maturity of their spelling skills at different rates.
  - Progress students through words for spelling practice that are developmentally appropriate for the grade level.
  - Focus on words that students are likely to use in their reading and writing (pp. 52-54).
Skill Trees: Writing Process Series (WPS) consists of the Persuasive Writing, Expository Writing, and Narrative Writing Skill Trees. These categories meet the needs of a large number of schools, based on surveys of state standards:

“State writing standards covered a diverse range of genres. The most frequently stated genres or writing forms were personal narrative (42 states), letter (37), report (36), persuasive or opinion essay (34) and imaginative narrative (32)” (Isaacson, 2004, p. 41).

Series Description
This comprehensive and thorough program provides instruction in all phases of the writing process. It guides students through readiness, brainstorming, prewriting, drafting, revising, editing, and proofreading exercises as they compose more convincing writing assignments and essays. This research-based program is designed to turn reluctant writers into motivated and fluent writers.

Research Background
At the core of Writing Process Series is the concept that students need to receive instruction about the various writing genres in a systematic way. That is, particular forms of writing have conventions that can be taught: “…researchers have developed a consensus on the most effective approach to writing instruction. Best known as process writing, this approach emerged from researchers’ study of the steps that accomplished writers engage in as they write: planning and organizing ideas, translating ideas into text, and reviewing and revising the result…”

Research Shows:
- The National Assessment of Educational Progress (NAEP) found that students who reported that their teachers placed greater emphasis on the following writing practices (listed below) had higher average writing scores (National Center for Education Statistics, 1996).
  - Planning the writing
  - Making a formal outline before drafting
  - Defining the purpose and audience
  - Using resources other than the textbook
  - Writing more than one draft of a paper

Writing Process Series
- Throughout the Writing Process Series programs:
  - Students are composing preparation notes, organizational tools, or drafts.
  - Students save their work and let other students review it.
  - The teacher may view all the drafts, peer comments, and the final papers.
  - Each program includes Prewriting, Brainstorming, Organizing, Drafting, Peer Reviewing, Revising, and Finalizing
In addition to a focus on writing development, students need instruction in specific genres of writing (Dickson, DeGraff, & Foard, 2002; Fearn & Farnan, 2001).

The National Writing Project (NWP) states that “Learning to write requires frequent, supporting practice…Effective writing instruction pays attention to both the product and processes of writing….Students face ongoing challenges in their writing development and need practice with diverse writing tasks to improve” (National Writing Project, 2003).

“Peer assessment helps students reflect on their writing, recognize dissonances, and create solutions. In addition, exposure to feedback helps students learn to consider another person’s perspective on the content and quality of their writing…Finally, peer assessment may provide valuable insight into the role that an audience and critic can have in revising and improving a writer’s piece” (Sadler & Andrae, 2004, p. 51).

The use of visualizations of the writing process on the computer screen should provide “procedural facilitation, including support structures or ‘scaffolding’ that students learn and follow steps known to lead to successful performance” (Rowley, K., & Meyer, N., 2003). The effect of a computer tutor for writers on student writing achievement can be found in the Journal of Educational Computing Research, 29(2), 169-187.

Each program provides students with information about genres and their critical features and examples of good writing in each genre.

These programs provide demonstrations of the key stages of writing, and opportunities for frequently practice and sharing writing through the Peer Editing features.

During Peer Editing, students are guided through a checklist of evaluative questions that lead them to assess the writing at numerous levels and provide thoughtful feedback to the writer. Students who use WPS are encouraged to give comments, as well as receive them, which may lead them to insights they can apply to their own writing.

Writing Process Series supplements writing with scaffolded lessons in the steps that have proven to be successful in planning, drafting, reviewing and revising a paper.
~Reading Comprehension and Critical Thinking~

Skill Trees: Reading Comprehension and Critical Thinking (RCCT) 1, grades 4-6, Reading Comprehension and Critical Thinking 2, grades 7-9. Each story includes 8-10 corresponding comprehension questions and 3-4 critical-thinking exercises. Inference is required in 30% to 60% of the comprehension questions, depending upon level. Stories range from 430-575 words in RCCT 1 and are approximately 750 words long in RCCT 2.

Program Description

In Reading Comprehension and Critical Thinking, students are engaged by a variety of stories and video clips. Pre-reading, during-reading, and after-reading strategies appear alongside stories to aid in students’ comprehension. Coaching is available for each reading comprehension question.

Research Shows

- Multiple researchers have concluded that good reading comprehension occurs when students engage the text using multiple strategies before, during, and after reading (Duke & Pearson; Pearson & Fielding; Pressley, 2002; Pressley, 1998; Pressley et. al., 1989; Biancarosa, G., & Snow, C.E.).

- Research indicates that good readers require flexibility in their approach to reading and processing strategies. Sometimes they skim text, jump around in the text, locate important information using highlighting or by taking notes, and think about how they will use the information found in the text.

- Explicit attempts to get students to engage in prediction behaviors have proven successful in increasing interest in and memory for stories (Anderson, Wilkinson, Mason & Shirley, 1987).

- The Question-Answer Relationship strategy teaches children where to seek answers to questions in text. In some cases, the answer is explicit, while at other times the answer requires thinking and making an inference. This strategy is supported by research (Raphael, 1982, 1983, 1985, 1986).

Reading Comprehension and Critical Thinking

- In RCCT, students are encouraged to participate in pre-reading, during reading, and after-reading strategies to improve reading comprehension.

- In RCCT, the students may access various sections of the program at any time. They also may free-write using an electronic note pad or copy and paste text into it. The pre-writing questions, critical thinking exercises, and comprehension questions are available at all times, giving students the flexibility good readers need.

- Each story in RCCT begins with a video clip that engages students. A prewriting exercise asks them to predict what will happen in the story after viewing the clip.

- Students may use the Hint button to receive a hint about the answer in a story; the answer or information needed for inference is highlighted.
Considerable research has established that a reader’s comprehension is greatly influenced by his/her available background experiences (Pearson & Johnson, 1978; Pearson & Spiro, 1980; Taylor, 1979; Wilson & Hammill, 1982).

“By giving learners greater control over various aspects of instruction, such as pacing and sequencing, they can tailor the instruction to their own style of learning, thereby enhancing the efficacy and efficiency of learning. Furthermore, this greater freedom should motivate students, thus enhancing learning even more” (Borsook and Higginbotham-Wheat, p. 13). Multiple researchers agree.

RCCT’s prewriting and critical thinking exercises ask students to call upon their own similar experiences to answer questions and complete exercises.

The flexible design of RCCT gives the student control over story choice, pacing, whether or not to hear the story read aloud, and choice of which pre-reading, during reading, and after-reading strategies to use, as well as when to use them.
A Note About Overlap & Additional Orchard Programs

Skill Overlap

The programs previously mentioned emphasize one of the five key components of early reading through teaching, or instruction. These key components are also practiced and applied in multiple programs. The table below demonstrates the overlap of key components among programs, addressed in either an explicit or implicit manner.

<table>
<thead>
<tr>
<th></th>
<th>Phonemic Awareness</th>
<th>Phonics</th>
<th>Fluency</th>
<th>Vocabulary</th>
<th>Comprehension</th>
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<tbody>
<tr>
<td>Phonemic Awareness</td>
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<tr>
<td>Phonics Sequences</td>
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<tr>
<td>Reading Links</td>
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<tr>
<td>Vocabulary Builders</td>
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<tr>
<td>Guided Comprehension</td>
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<tr>
<td>Reading Realities</td>
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</tbody>
</table>

Additional Language Arts K-3 Orchard Programs

The inclusion of two learning games plus reading and writing programs from Orchard allows students to further practice and apply the five key components of early reading.

<table>
<thead>
<tr>
<th></th>
<th>Phonemic Awareness</th>
<th>Phonics</th>
<th>Fluency</th>
<th>Vocabulary</th>
<th>Comprehension</th>
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<tbody>
<tr>
<td>Language Arts Concepts K-2</td>
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<tr>
<td>Reading for Comprehension</td>
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<tr>
<td>Reading for Main Idea</td>
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</tbody>
</table>

Program Descriptions

Language Arts Concepts K-2

Students work through a progression of key reading and writing concepts in this series of five programs. The series includes Letters, Sounds and Words; Prewriting; Parts of Speech and Sentences; Punctuation; and Writing and Editing.

Reading for Comprehension & Reading for Main Idea

These Learning Games programs were designed to provide basic skills reinforcement and practice while engaging students in a graphics-rich environment.
**Research-based Background**

**Language Arts**

Orchard’s Language Arts Skill Trees are not only correlated to the research findings of the National Reading Panel, but are also based on current scientific research regarding effective reading and writing instruction as detailed in the chart below.

### Research

- **Using a word processor, which provides efficient and easy manipulation of text, can significantly improve students’ writing.** 
  
  Cochran-Smith, Paris & Kahn (1991); Dunn (2000); Moore (1988); Owston, Murphy, & Weidman (1992); Parr (1994-95); Robinson-Staveley & Cooper (1990); Silvren (1988); Takayoshi (1996); Williamson & Pence (1989)

- **The use of a process-oriented approach and software that emphasizes the use of editorial strategies improves the quality of students’ writing.** 
  

- **Feedback is an essential component of the instructional process and an effective means of motivating students’ academic performance.** 
  
  Clare, Valdes, & Patthey-Chavez (2000); Dunn (2000); Sales (1998)

- **Through guided modeling, understanding of clear assessment criteria, and practice in editing and revision, students’ writing develops in both style and structure.** 
  
  Buhrke, Henkels, Klene, & Pfister (2002); Corden (2002); Kowalewski, Murphy, & Starn (2002); Graham & George (1992); Sims (2001)

- **Computer-assisted instruction that incorporates modeling, explanations, and guided practice has a positive impact on student achievement.** 
  
  Soe, Koki, & Chang (2000)

- **Knowledge of text structure enhances reader recall of ideas from text.** 
  
  Slaton (2001)

- **Programs that train in phonological awareness increase not only phonological awareness, but also decoding and word recognition.** 
  
  MacArthur, Ferretti, Okolo, & Cavalier (2001)

- **Computer-assisted spelling practice is more effective than paper-pencil practice in increasing retention.** 
  
  MacArthur, Ferretti, Okolo, & Cavalier (2001)

### Orchard

- **Reading Comprehension and Critical Thinking** provides an easy-to-use, versatile word processing tool students can use to publish their written responses to critical thinking exercises and other strategies designed to improve comprehension.

- **In Writing Process Series, students utilize a user-friendly word-processing tool to progress through various stages of the writing process.**

- **Writing Process Series Skill Trees use a step-by-step process-oriented approach, which emphasizes content and organization. Students are prompted to complete pre-writing activities and to improve their writing through peer review, rearranging, adding, removing, or editing as necessary.**

- **Critical Concepts Skill Trees** provide students with multiple practice opportunities for key reading and writing skills and provide immediate feedback to students.

- **The three Writing Process Series Skill Trees provide a variety of editing and revision opportunities for students. Answers can be evaluated by peers and the teacher, and modeling of correct responses is provided.**

- **SkillBuilder Skill Trees** provide direct instruction with modeling, explanation, guided practice, and assessment of correct language usage.

- **In the Guided Comprehension Skill Trees, students practice creating story maps based on information in the readings. The Process Writing Skill Trees help students write and organize paragraphs for different purposes.**

- **Phonics Sequences and Phonemic Awareness help students link letters to sounds.**

- **Vocabulary Builders activities provide students numerous ways to practice spelling target words.**

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* Critical Concepts Skill Trees: Guided Comprehension; Writing Process Series; Reading Concepts; Reading Comprehension and Critical Thinking; Reading, Research, & Language Skills; Reading Links; Vocabulary Builders; Writing & Media Literacy

** SkillBuilder Skill Trees: Grammar; Parts of Speech; Phonemic Awareness; Phonics Sequences; Spelling Buzz; Reading & Writing Strategies
Program Credits

**Guided Comprehension** Authors: Glen Coats; Dr. June Coultas (Ph.D. Curriculum and Evaluation – University of Sarasota); Dr. James Swalm (Ph.D. Reading and Curriculum Development – Rutgers University)

**Language Arts Critical Concepts** Author: Gail Williams (B.S. Education – Valley City State University)

**Language Concepts** Author: Sandie Bender; Dale Henderson (B.A. & M.A. – University of Attawa)

**Language Arts Skill Builders:** Author: Gail Williams (B.S. Education – Valley City State University)

**Learning Arts Games:** Authors: Diana Hestwood (B.S. Elementary Education – University of Minnesota, M.A. Mathematics Education – University of Maryland); Judith Rickey (B.S. Education – Ohio State University)

**Phonemic Awareness** Developer: Odyssey Learning Center in Gainesville, Florida

**Phonics Sequences** Author: Pollyann O’Brien (B.A. – Western Washington College of Education, M.A. – San Jose State University)

**Reading for Comprehension & Reading for Main Idea** Authors: Diana Hestwood (B.S. Elementary Education – University of Minnesota, M.A. Mathematics Education – University of Maryland); Judith Rickey (B.S. Education – Ohio State University)

**Reading Links** Contributors: Mike Artell, Kristina Davis-Rake (B.A. English/History – Georgian Court College); Amy DeGuire (B.S. Elementary Education – Quincy University, M.A. Educational Processes – Maryville University); Rusty Fischer (B.A. English/B.S. English Education – University of Central Florida); Erin FitzWilliam (B.S. Elementary Education – Indiana University, M.A. Professional Studies in Education – George Mason University); Vicky Newsome (B.S. Education – Gadsden State University); Lisa Shulmna (B.A. Liberal Studies – University of Pacific)

**Reading Realities** Contributors

**Vocabulary Builders** Author: Lynn Domenech (B.A. Elementary Education/M.A. Reading Education – University of Florida)

Contributors: Erin Davis (B.S. Management Information Systems and Communications – Babson College, Ed.M. Educational Media and Technology – Boston University); Amy DeGuire (B.S. Elementary Education – Quincy University, M.A. Educational Processes – Maryville University); Erin FitzWilliam (B.S. Elementary Education – Indiana University, M.A. Professional Studies in Education – George Mason University); Alison Trachet

**Writing Process Series** was originally developed by educators Barbara Hombs and Priscilla A. Hamilton. It contained four modules: Persuasive Writing; Report of Information/Observation; Autobiographical Incident; and Evaluation. These programs contained instructional steps, checklists, and a text editor. Neil Holman, Ph.D.
Research-Based Background

Math

Orchard’s Math Skill Trees help answer the instructional challenge of helping every child develop a solid mathematical foundation. Skill Trees in these bundles are based on current research supporting the best practices outlined in the National Council of Teachers of Mathematics (NCTM) Principles and Standards for School Mathematics. Before compiling these Standards, the NCTM Research Advisory Committee commissioned a set of “white papers” summarizing the current state of education research in the areas of mathematics teaching and learning to serve as background for the Writing Group. These papers, published in the book A Research Companion to the NCTM Standards, provide the research basis for the development of the NCTM Standards.

Skill Trees in the Math bundles are organized into three different instructional approaches: Math Concepts, SkillBuilders and Learning Games. The Math Concepts Skill Trees include highly interactive and graphic tutorials and age-appropriate activities to help students understand key concepts stressed in the NCTM Standards. SkillBuilders Skill Trees provide direct step-by-step instruction with helpful tutorials and motivating reward games when mastery is achieved. Finally, Learning Games Skill Trees help students practice key skills in a highly graphic environment.

Benefits of computer-assisted instruction for elementary students includes increased engagement and lower math anxiety. According to the findings of the research review Effects of Using Instructional Technology in Elementary and Secondary Schools: What Controlled Evaluation Studies Say, released in May 2003, students’ math achievement improves with the use of software programs that combine drill-and-practice questions with tutorial lessons, require students to respond frequently, provide students with immediate feedback on their answers, and keep detailed records on student performance. As seen in the chart below, the combination of Math Concepts, SkillBuilders, and Learning Games Skill Trees clearly has the essential components of a successful mathematics software program.

Research Shows

Students benefit from mathematical software programs that have the following components (Kulik, 2003):

- Drill and practice questions
- Tutorial lessons
- Require students to respond frequently
- Provide students with immediate feedback
- Keep detailed records on student performance
- Train to automaticity
- Mastery learning

Orchard Math

The combination of Math Concepts, SkillBuilders, and Learning Games Skill Trees have the essential components of a successful mathematics software program.

- Learning Games Skill Trees provide students multiple practice opportunities for key skills.
- Both Math Concepts and SkillBuilders Skill Trees provide tutorials and step-by-step instruction in key concepts.
- The Math Skill Trees are robust programs which provide multiple opportunities to practice key concepts.
- All Math Skill Trees provide immediate feedback to students. In addition, most Skill Trees also provide instruction when students answer questions incorrectly.
- All Orchard programs work under the same simple, yet powerful, universal management system, which provides educators an easy way to obtain a variety of reports such as time on task, raw scores, and percentage scores by student and by class.
- Math Learning Games facilitate development of automaticity in number facts by allowing teachers to set a time limit for student practice and encouraging students to respond quickly in order to “win” the game.
- SkillBuilders present students with selected skills until students demonstrate mastery.

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~Math Concepts Series~

**Skill Trees:** Algebra; Algebra/Patterning/Logic; Basic Operations/Order of Operations; Data Management & Probability; Fraction Concepts; Geometry; Geometry/Spatial Sense; Graphing/Managing Data; Integers; Measurement; Number Sense; Numeration; Patterning & Algebra; Percent; Probability

**Series Description**
This series identifies and addresses specific skills using an approach that integrates tutorials, practice, exploratory activities, and assessment. Experienced educators developed the Math Concepts Series as a comprehensive mathematics instructional program that applies current educational research in mathematics instruction, supporting the best practices outlined in the National Council of Teachers of Mathematics (NCTM) *Principles and Standards for School Mathematics* as detailed below.

### Research Supporting NCTM Standards

- Students must learn mathematics with understanding, actively building new knowledge from experience and prior knowledge, *i.e.*, iterative learning. *Bransford, Brown, & Cocking (1999)*

- Instructional programs should enable students to communicate their mathematical thinking coherently and clearly to peers, teachers, and others. *Koirala (2002); Sitomer (1999)*

- The contexts for the development of mathematical skills and knowledge should relate to other disciplines. *Masanja (2002); Salyer & Thyfault (2003)*

- Variety in teaching strategies that address multiple intelligences and different learning styles are critical for mathematical thinking. *Adams (2000-2001); Willis & Johnson (2001)*

- Assessment should support the learning of important mathematics and furnish useful information to both teachers and students. *Black & Wiliam (1998)*

- Calculators can enhance students’ learning in mathematics. *Sparrow & Swan (2001); Pennington (1998)*

### Math Concepts Series

- The Math Concepts Series promotes iterative learning through active engagement in problem solving and real world connections, both within a mathematical context and linkages to careers in mathematics.

- The Math Journal tool available in many Math Concepts Skill Trees nurtures written communication of mathematical ideas.

- The Math Concepts Series provides a range of connections to language, social studies, business, physical education, and the arts. Segments involving careers in mathematics and using mathematics in the world of work are incorporated throughout the programs.

- The Math Concepts Series provides audio support and interactive manipulations.

- The Math Concepts Series provides ongoing assessment and feedback. Information is available on activities completed, time-on-task, and achievement results.

- The Math Concepts Series includes a calculator as a learning tool in the solving of problems and arithmetic calculations. Students in later grades use dynamic geometry explorers within the Skill Trees.
Research-Based Background

Math

~Math SkillBuilders~

Skill Trees: Decimals; Fractions: Advanced; Fractions: Beginning; Perimeter/Area/Volume; Whole Numbers: Advanced; Whole Numbers: Beginning

Series Description

SkillBuilders Skill Trees provide direct step-by-step instruction with helpful tutorials and motivating reward games when mastery is achieved. Current textbooks by major publishers form the content basis of the SkillBuilder Skill Trees. Authors chose common topics that are addressed in several major textbooks used in classrooms across the country. The Math SkillBuilders Series is a comprehensive mathematics instructional program that applies current educational research in mathematics instruction supporting the best practices outlined in the National Council of Teachers of Mathematics (NCTM) Principles and Standards for School Mathematics as detailed below.

Research Supporting NCTM Standards

- Instructional programs should teach students to compute fluently. *Witman, Marcinkiewicz, & Hamodey-Douglas (1998)*

- Research and experience have clearly demonstrated the potential of calculators to enhance students’ learning in mathematics. *Sparrow & Swan (2001); Pennington (1998)*

- Some students may require additional assistance to meet high math expectations. *Gentile & Lalley (2003), Hubschman & Schpilberg (2003)*

- Assessment should support the learning of important mathematics skills and furnish useful information to both teachers and students. *Black & Wiliam (1998); Gentile & Lalley (2003)*

Math SkillBuilder Series

- Math SkillBuilder Skill Trees teach students to compute fluently through step-by-step, tutorial explanation and practice modes of instruction.

- Teachers can choose to give students access to an online calculator for even more assistance when necessary.

- Programs in the SkillBuilder series diagnose each step the student takes by providing tutorial feedback and prompts, rather than just letting the student answer the question incorrectly and progress to the next question and lesson.

- Constructive feedback is provided for incorrect answers, and students can print their scores at the end of their session to further enhance progress and confidence.
~Math Learning Games~

Skill Trees: Money; Number Facts: Advanced; Number Facts: Beginning; Number Facts: Mixed Practice; Time

Description
Math Learning Games improve skill fluency and are intended for students who need extra motivation and reinforcement, not tutorials. These fast-paced learning games strengthen students’ accuracy and speed as they work toward quick recall of basic math facts. These games provide practice and assessment beyond the textbook. The two-player games, perfect for learning centers, provide students with a wide variety of carefully leveled activities where correct answers lead to progress in a motivating game. The Math SkillBuilders Series is a comprehensive mathematics instructional program that applies current educational research in mathematics instruction supporting the best practices outlined in the National Council of Teachers of Mathematics (NCTM) Principles and Standards for School Mathematics as detailed below.

Research Supporting NCTM Standards
- Meaningful practice is necessary to develop computational fluency. Haught, Kunce, Pratt, Werneske, & Zemel (2002)
- Some students may need increased time to complete assignments. Gentile & Lalley (2003)
- Assessment should support the learning of important mathematics skills and furnish useful information to both teachers and students. Black & Wiliam (1998)

Math Learning Games Series
- Learning Games provide unlimited practice opportunities for students to develop computational fluency in a variety of areas.
- Teachers can adjust difficulty levels, speed, and time limits to meet individual students’ needs.
- Students see correct answers to missed problems. Students’ progress on each factor attempted or completed is tracked within the programs.

Program Credits

Math Concepts Authors Larry Brown, Don Burke, Mary Ann Cowan, Jim Dale, Dale Henderson (B.A. & M.A. – University of Ottawa); John Lalonde; Colleen MacDonald; Carol Parent; Michelle Pitre; Linda Sloan (B.A. – Carleton University)

Skill Builders Author Gail Williams (B.S. Education – Valley City State University)

Learning Games: Authors Diana Hestwood (B.S. Elementary Education– University of Minnesota, M.A. Mathematics Education– University of Maryland); Judith Rickey (B.S. Education – Ohio State University)
Orchard’s Science Bundle’s grade-appropriate content can be incorporated into the regular science curriculum in order to promote meaningful learning and preparation for more advanced science courses. The programs in this bundle are based on current research supporting the best practices outlined in National Science Education Standards. In addition, these programs also incorporate research supporting the philosophies and standards of the National Council of Teachers of Science (NCTS), the National Foundation of Science, and the Pan-Canadian Common Framework of Science Learning Outcomes. For example, the research shows that students build their scientific understanding and investigative skills through active inquiry, connecting their previous knowledge with new ideas and evidence. Orchard’s Science Bundle helps students develop “science process skills” by engaging them in an interactive experience that allows them to discover how to use science to make decisions and to think critically. Students are active note-takers, problem-solvers, and scientists as they complete exciting inquiry activities that challenge them to hypothesize, analyze data, and draw conclusions.

Orchard’s Science Bundle is comprised of four series: Biology Concepts, Life Science, Scientific Thinking, and Earth Science/Life Science/Physical Science Concepts.

The Biology Concepts series is characterized by its significant use of video-based instruction, increasing the opportunities for discovery. Complex content is presented in a simple way through the use of sophisticated video and simulations. Students are challenged to become problem-solvers by designing investigations, analyzing data, making observations, taking notes, gathering evidence, and drawing conclusions.

The Life Science Skill Trees deal with common life science topics and are characterized by interactive tutorials. Each lesson allows students to branch into reading the content or playing the animation, reviewing the glossary, and then finally answering the vocabulary and comprehension questions through quick quizzes.

Scientific Thinking Skill Trees promote higher-level thinking skills many students otherwise find very difficult. Students are engaged in making scientific decisions using their critical-thinking and analytical skills. Students can apply what they have learned through the use of productivity tools such as spreadsheets, databases, and word processors that are integrated into the program.

Earth Science, Life Science, and the Physical Science Concepts series are comprehensive, curriculum-based programs, perfect as a supplement to traditional and progressive science instruction. The multimedia features, including sound, animation, video, and graphics, make an exciting environment for learning science. In addition, there is a journal feature that encourages students to write about science.
According to the findings of a meta-analysis exploring the effectiveness of computer-aided instruction (CAI) in science by Sule Bayraktar (2001-2002) and a review of the effects of information technology on science learning by James Kulik, CAI has a positive effect on students’ achievement. Students who use CAI also show fewer misconceptions and have better attitudes toward science and technology. Significantly, these improvements held true for all levels of students—elementary, secondary, and college.

The following factors are associated with enhanced student learning in science: tutorials and simulations (as opposed to drill and practice), individualized instruction, and use of the computers to supplement rather than replace instruction. The chart below shows how Orchard science Skill Trees support each of these factors.

### Research Shows
Students benefit from science software programs that have the following characteristics:

- Access to simulations or tutorials Adonri & Gittman (1998); Weller (1995); Kelly (1998); Yalcinalp, Geban, & Ozkan (1995)
- Individualized content Bayraktar (2001-2002)
- Ability to complement traditional instruction Bayraktar (2001-2002)

### Orchard Science
The science Skill Trees have the essential components of a successful science software program.

- Skill Trees include both simulations and tutorials
- Lesson assignments are individualized to each student’s needs, based on either their pretest scores or on the teacher’s assignments. Students work at their own pace through the activities, reviewing information as needed and accessing other resources (e.g., online glossaries) as needed to facilitate understanding.
- Teachers can assign specific lessons to students in their classes to complement lectures and labs.

### Program Credits

**Science Concepts Authors** Ken Kurs; Amy Heide; Don Burke
References
The following pages include a listing of the scientific research studies which were the basis for the National Reading Panel (NRP) findings on successful early reading instruction in the areas of phonemic awareness, phonics, fluency, vocabulary, and text comprehension.
~Scientific Studies Included in the NRP Phonemic Awareness Meta-Analysis~


~Scientific Studies Included in the NRP Fluency Meta-Analysis~


~Scientific Studies Included in the NRP Fluency Meta-Analysis (Cont.)~


~Scientific Studies Included in the NRP Vocabulary Meta-Analysis (Cont.)~


Comprehension Monitoring


Cooperative Learning References


~Scientific Studies Included in the NRP Comprehension Meta-Analysis (cont.)~


Curriculum Plus Strategies References


Graphic Organizer References


References

~Scientific Studies Included in the NRP Comprehension Meta-Analysis (cont.)~

Listening References


Mental Imagery References


Mnemonics References


Multiple Strategies References

Reciprocal Teaching Studies (Reviewed by Rosenshine & Meister, 1994)


REFERENCES

~SCIENTIFIC STUDIES INCLUDED IN THE NRP COMPREHENSION META-ANALYSIS (CONT.)~


Other Reciprocal Teaching Studies (not reviewed by Rosenshine & Meister 1994)


Other Multiple Strategy Treatments


References


Prior Knowledge


Psycholinguistic


Question Generation (Reviewed by Rosenshine, Meister, & Chapman, 1996)

Signal Word Prompts


~SCIENTIFIC STUDIES INCLUDED IN THE NRP COMPREHENSION META-ANALYSIS (CONT.)~

Question Type Prompts


Smith, N.J. (1977). The effects of training teachers to teach students at different reading ability levels to formulate three types of questions on reading comprehension and question generation ability. Unpublished doctoral dissertation, University of Georgia.

Story Grammar Prompts


No Prompts


Other Question Generation Studies (Not Reviewed by Rosenshine et al.,1996)


Question Answering


REFERENCES

~Scientific Studies Included in the NRP Comprehension Meta-Analysis (Cont.)~


Summarization


**Teacher Training**


**Vocabulary Comprehension Relationship**


~References for Language Arts Skill Trees~


Kowalewski, E., Murphy, J., & Stams, M. (2002). Improving student writing in the elementary classroom. (ERIC Document Reproduction Service No. ED467516)


~References for Math Skill Trees~


~REFERENCES FOR SCIENCE SKILL TREES~


The following pages contain Orchard’s response to the commonly used
Institute for the Development of Educational Achievement College of Education (IDEA)
Consumer’s Guide to Evaluating a Core Reading Program Grades K-3 by Simmons & Kame’enui.
The selection and adoption of an effective, research-based core reading program in the primary grades is a critical step in the development of an effective schoolwide reading initiative. The investment in identifying a core program that aligns with research and fits the needs of learners in your school will reap long-term benefits for children's reading acquisition and development.

A critical review of reading programs requires objective and in-depth analysis. For these reasons, we offer the following recommendations and procedures for analyzing critical elements of programs. First, we address questions regarding the importance and process of a core program. Following, we specify the criteria for program evaluation organized by grade level and reading dimensions. Further, we offer guidelines regarding instructional time, differentiated instruction, and assessment. We trust you will find these guidelines useful and usable in this significant professional process.

1. What is a core reading program?

A core reading program is the primary instructional tool that teachers use to teach children to learn to read and ensure they reach reading levels that meet or exceed grade-level standards. A core program should address the instructional needs of the majority of students in a respective school or district.

Historically, core-reading programs have been referred to as basal reading programs in that they serve as the "base" for reading instruction. Adoption of a core does not imply that other materials and strategies are not used to provide a rich, comprehensive program of instruction. The core program, however, should serve as the primary reading program for the school and the expectation is that all teachers within and between the primary grades will use the core program as the base of reading instruction. Such programs may or may not be commercial textbook series.

2. Why adopt a core reading program?

In a recent document entitled "Teaching Reading is Rocket Science," Louisa Moats (1999) revealed and articulated the complexities of carefully designed and implemented reading instruction. Teaching reading is far more complex than most professionals and laypersons realize. The demands of the phonologic, alphabetic, semantic, and syntactic systems of written
language require a careful schedule and sequence of prioritized objectives, explicit strategies, and scaffolds that support students’ initial learning and transfer of knowledge and skills to other contexts. The requirements of curriculum construction and instructional design that effectively move children through the "learning to read" stage to the "reading to learn" stage are simply too important to leave to the judgment of individuals. The better the core addresses instructional priorities, the less teachers will need to supplement and modify instruction for the majority of learners.

3. What process should be used to select a core reading program?

Ideally, every teacher involved in reading instruction would be involved in the review and selection of the core reading program. Realistically, a grade-level representative may be responsible for the initial review and reduce the "possible" options to a reasonable number. At minimum, we recommend that grade-level representatives use the criteria that follow and then share those findings with grade-level teams.

Schools often ask whether the adoption should be K-6 or whether a K-3/4-6 adoption is advisable. Ideally, there would be consensus across grades K-6; however, it is imperative to give priority to how children are taught to learn to read. Therefore, kindergarten and first grades are critical grades and should be weighted heavily in adoption decisions. This may entail a different adoption for grades 4-6.

4. What criteria should be used to select a core reading program?

A converging body of scientific evidence is available and accessible to guide the development of primary-grade reading programs. We know from research the critical skills and strategies that children must acquire in order to become successful readers by grade 3 (National Reading Panel, 2000, National Research Council, 1998; NICHD, 1996, Simmons & Kameenui, 1998). Following, we specify criteria for reviewing critical elements of reading organized by grade.
Stage I: Is There Trustworthy Evidence of Program Efficacy?

Prior scientific studies of program efficacy should be a first-level criterion to identify the pool of possible core programs. Your review of programs should answer the following questions:

Yes 1. Does the program have evidence of efficacy established through carefully designed experimental studies?

Yes 2. Does the program reflect current and confirmed research in reading?

Yes 3. Does the program provide explicit, systematic instruction in the primary grades (K-3) in the following dimensions:
   - phonemic awareness (grades K-1)
   - phonics/decoding
   - vocabulary
   - comprehension (listening and reading)

Yes 4. Was the program tested in schools and classrooms with similar demographic and learner profiles as your school?

If the answers to questions 1-4 are yes, you have evidence to indicate that if adopted and implemented faithfully, there is high probability the program will be effective.

If you can narrow your selection to programs with trustworthy evidence, proceed to Stage II for more comprehensive analysis.

Your review of programs may yield those that lack prior evidence of efficacy but that have components based on research. A lack of program efficacy should not exclude a program from consideration. Your analysis of critical elements, however, assumes greater importance.

A new generation of reading programs is currently finding its way into the market place; a generation of programs that holds great promise yet lack evidence of efficacy. New programs often do not have adequate levels of evidence because large-scale, longitudinal evidence is costly and difficult to obtain. If programs lack established program efficacy, evaluate the program carefully and thoroughly according to following elements described in this guide.
Stage II: A Consumer's Guide to Selecting a Core Program:
A Critical Elements Analysis

A key assumption of a core program is that it will (a) address all grade-level standards and (b) ensure that high priority standards are taught in sufficient depth, breadth, and quality that all learners will achieve or exceed expected levels of proficiency. All standards are not equally important. Our critical elements analysis focuses on those skills and strategies essential for early reading.

General Review Process

1. Scope of Review and Prioritization of Items
   Review each critical element for each grade. Items within each critical element have been prioritized as either High Priority or Discretionary. High Priority items are considered essential to the review. Discretionary items should be reviewed but do not carry as much weight in the overall analysis.

2. Type of Review and Sampling Procedure
   To gain a representative sample of the program, we recommend the following strategies:
   (a) Within lesson procedure (W) involves identifying the first day (lesson) in which a critical skill (e.g., letter sound correspondence, word reading) is introduced and following that skill over a sequence of 2-3 days. Then, repeating the process to document evidence at two other points in time (e.g., middle/end of program).
   (b) Scope and sequence procedure (SS) involves using the scope and sequence to identify the initial instruction on a skill and analyze how instruction progresses over time. Document progression in the evidence columns.
   (c) Skills trace procedure (ST) will be used for selected skills. (See attached description of the procedure.)

3. Documenting Evidence
   On the review forms there is space to document specific information. Example information may include lesson number, particular skill STRATEGY introduced, etc.

4. Calculating Scores and Summarizing Findings
   Criteria are calculated at the Critical Element level by grade and across Critical Elements by grade level. At the end of each critical element, tally the number of consistently, partially, and does not satisfy criterion scores. At the end of the analysis, summarize your tallies by High Priority and Discretionary items.

5. Grade Level Design Features Analysis
   At the end of each grade, there are 4-6 overarching items to assess the design, coherence, and systematic nature of instruction across lessons in the program. These items are intended to provide a big picture analysis.

Use the following criteria for each critical element:
When evaluating individual elements, slash (/) the respective circle that represents your rating (e.g., ● / ).

Type of Review

1. (w) = Within a sequence of lessons. A specified element is best analyzed by reviewing a particular lesson or a series of 2-3 successive lessons.

2. (ss) = Scope and sequence. A specified element is best analyzed by reviewing the program’s scope and sequence.

3. (st) = Skills trace. A specified element is best analyzed by completing a skills trace over a series of 10 consecutive lessons.
Program Name: Orchard K-3 Reading Program
Publisher: Siboney Learning Group

1. The program meets the following criteria for a comprehensive/core program and will be evaluated using the Consumer’s Guide.

- Includes comprehensive materials for grades K-3.
- Provides instruction in each of the critical elements:
  - phonemic awareness
  - phonics
  - fluency
  - vocabulary
  - comprehension

2. The program does not meet the following criteria for a comprehensive/core program and will be evaluated using the Consumer’s Guide (select all that apply).

- Includes comprehensive materials for grades K-3.

3. The program meets criteria for a supplemental or intervention program and will be reviewed for that purpose.

- Provides targeted instruction on specific skill (select all that apply):
  - phonemic awareness
  - phonics
  - fluency
  - vocabulary
  - comprehension

K-3 Specify for which Grade/Age the program is appropriate.
Phonemic Awareness is the ability to hear and manipulate the sound structure of language. It is a strong predictor of reading success. Phonemic awareness is an auditory skill and consists of multiple components.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Progresses from the easier phonemic awareness activities to the more difficult (e.g., isolation, blending, segmentation, and manipulation). <em>(ss)</em></td>
<td>Each Phonemic Awareness Skill Tree includes a pretest that assigns content to strengthen weak skill areas. Based on the student’s test results, the program begins with instruction on key phonemes. Errorless practice and review activities further develop identification and use of key phonemes.</td>
</tr>
<tr>
<td></td>
<td>2. Teaches skills explicitly and systematically <em>(w).</em></td>
<td>Each Phonemic Awareness Skill Tree includes a pretest that assigns content to strengthen weak skill areas. Based on the student’s pretest results, the program follows a progression of instruction, errorless practice and review activities on key phonemes. Focus of instruction progresses from consonants, short/long vowels, and phoneme word families, to difficult consonants.</td>
</tr>
<tr>
<td></td>
<td>3. Models phonemic awareness tasks and responses orally and follows with students' production of the task. <em>(w)</em></td>
<td>Each Phonemic Awareness Skill Tree includes a pretest that assigns content to strengthen weak skill areas. Based on the student’s pretest results, the program follows a progression of instruction, errorless practice and review activities on key phonemes. The program continually models oral production of sound and allows students to progress only when mastery level is achieved.</td>
</tr>
<tr>
<td></td>
<td>4. Integrates letter-sound correspondence instruction to phonological awareness. <em>(w)</em> [NRP, pg. 2-41]</td>
<td>Each Phonemic Awareness Skill Tree includes a pretest that assigns content to strengthen weak skill areas. Based on the student’s pretest results, the program follows a progression of instruction, errorless practice and review activities on key phonemes. As appropriate for the instruction level, the program integrates sound-to-picture, then sound-to-letter and later sound-to-word correspondences.</td>
</tr>
<tr>
<td></td>
<td>5. Focuses on segmentation or the combination of blending and segmenting for greatest transfer. <em>(ss)</em> [NRP, pg. 2-41]</td>
<td>The Phonemic Awareness program includes a pretest that assigns content to strengthen weak skill areas. Based on the student’s pretest results, the program begins with instruction on blending and segmentation skills. Errorless practice and review activities further develop blending and segmentation skills.</td>
</tr>
</tbody>
</table>

Kindergarten Phonemic Awareness Instruction — High Priority

Tally the number of elements with each rating.

4 ● 1 ○ 0 ○
### Discretionary Items — Phonemic Awareness Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>⬤ ⬤ ⬤</td>
<td>1. Focuses beginning instruction on the phonemic level of phonological units with short words (two to three phonemes; e.g., <em>at, mud, run</em>).</td>
</tr>
<tr>
<td>⬤ ⬤ ⬤</td>
<td>2. Makes students' cognitive manipulations of sounds overt by using auditory cues or manipulatives that signal the movement of one sound to the next.</td>
</tr>
<tr>
<td>⬤ ⬤ ⬤</td>
<td>3. Focuses first on the initial sound (<em>sat</em>), then on the final sound (<em>sat</em>), and lastly on the medial sound (<em>sat</em>) in words.</td>
</tr>
<tr>
<td>⬤ ⬤ ⬤</td>
<td>4. Provides brief instructional sessions. (Significant gains in phonemic awareness are often made in 15 to 20 minutes of daily instruction and practice over a period of 9 to 12 weeks.) [NRP 5-15 hrs total, pg. 2-41]</td>
</tr>
</tbody>
</table>

Kindergarten Phonemic Awareness Instruction — Discretionary

Tally the number of elements with each rating.  

3 ⬤ 0 ⬤ 1 ⬤
**Phonics** is the ability to recognize words accurately, fluently, and independently is fundamental to reading in an alphabetic writing system. For kindergarten students, critical skills include learning to associate sounds with letters, using those associations to decode and read simple words, and learning to recognize important nondecodable words. [NRP, pg. 2-41; pg. 2-93]

### High Priority Items — Letter-Sound Association Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="https://img.shields.io/badge/Score-3-orange" alt="Score" /></td>
<td>1. Introduces high-utility letter sound instruction early in the sequence (e.g., /m/, /s/, /a/, /r/, /t/) instead of low-utility letter sounds (e.g., /x/, /y/, /z/). (ss)</td>
<td>Each Phonics Sequences Skill Tree systematically progresses through carefully sequenced modules. In addition, the teacher may customize the order of the activities based on student needs.</td>
</tr>
<tr>
<td><img src="https://img.shields.io/badge/Score-0-orange" alt="Score" /></td>
<td>2. Explicitly models the sound of letter prior to student practice and assessment. (w)</td>
<td>Each Phonics Sequences Skill Tree provides extensive auditory modeling before each activity. Each Phonics Sequences Skill Tree provides extensive auditory modeling during each practice activity. Each Phonics Sequences Skill Tree continues to provide extensive auditory modeling after instructional activities through review games.</td>
</tr>
<tr>
<td><img src="https://img.shields.io/badge/Score-0-orange" alt="Score" /></td>
<td>3. Incorporates frequent and cumulative review of taught letter sounds to automaticity. (st)</td>
<td>Through letter slides and sound-to-picture or sound-to-letter correspondence activities, students participate in errorless practice. Students then complete the same activities with responses being evaluated for speed and accuracy. If students do not achieve 100% mastery, they are returned to the instruction and errorless practice phases.</td>
</tr>
</tbody>
</table>

Kindergarten Letter-Sound Association Instruction — High Priority

Tally the number of elements with each rating.

![Score](https://img.shields.io/badge/Score-3-orange) ![Score](https://img.shields.io/badge/Score-0-orange) ![Score](https://img.shields.io/badge/Score-0-orange)
## Discretionary Items — Letter-Sound Association Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ ☐ ☐</td>
<td>1. Sequences the introduction of letter sounds in ways that minimize confusion (e.g., sequence /p/, /b/, /v/; /e/, /i/).</td>
</tr>
<tr>
<td>☰ ☰ ☰</td>
<td>2. Includes a few short vowels early in the sequence so that students can use letter-sound knowledge to segment and blend words.</td>
</tr>
</tbody>
</table>

Kindergarten Letter-Sound Association Instruction — Discretionary

Tally the number of elements with each rating.  

[ ] 1 ☰  
[ ] 1 ☰  
[ ] 0 ☰
<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 ⭕️</td>
<td>1. Provides explicit strategy for blending words. <em>(w)</em> [NRP, pg. 2-96]</td>
<td>The Phonics Sequences Skill Trees provide modeling of visual and auditory phonetic slides throughout the program. After modeling, students then participate in and errorless practice session with phonetic slides. Students then complete phonetic slide activities with responses being evaluated for speed and accuracy. If students do not achieve 100% mastery, they are returned to the instruction and errorless practice phases.</td>
</tr>
<tr>
<td>4 ⭕️</td>
<td>2. Provides multiple opportunities within lessons for students to blend and read words. <em>(w)</em></td>
<td>Phonics Sequences Skill Trees integrate progressively difficult visual and auditory phonetic slides throughout the program.</td>
</tr>
<tr>
<td>4 ⭕️</td>
<td>3. Provides sufficient guided practice in decodable word lists and short, controlled connected text. <em>(w)</em> and <em>(ss)</em></td>
<td>Vocabulary Builders Skill Trees provide aural and visual introduction of basal-specific or high frequency weekly word lists. Reading Links Skill Trees provide guided practice with focus words in multiple, sequenced, and spiraled activities beyond initial word identification and preview activities. Vocabulary Builders Skill Trees integrate repeated use of words in context in a series of aural and visual activities.</td>
</tr>
<tr>
<td>4 ⭕️</td>
<td>4. Introduces regular word types (CV or CVC) first in the sequence. <em>(ss)</em></td>
<td>In Phonics Sequences A (the first Skill Tree in the series) students have the opportunity to learn and practice the shapes (upper and lower case), names, and sounds of the letters of the alphabet. As students move through each Skill Tree, they sequentially progress from mere letter-sound recognition to the ability to recognize those sounds in words. Finally, students continue to master identifying sounds in words and begin to transfer their learning to reading sight words, sentences, and paragraphs.</td>
</tr>
<tr>
<td>✗ ⭕️</td>
<td>5. Introduces regular words for which students know all letter sounds. <em>(ss)</em></td>
<td></td>
</tr>
</tbody>
</table>

Kindergarten Decoding Instruction — High Priority
Tally the number of elements with each rating.

4 ⭕️ 0 ⭕️ 1 ⭕️
### High Priority Items — Irregular Words Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>🟢 〇 〇</td>
<td>1. Introduces words of high utility (e.g., I, have, etc.) with ample practice for automaticity. <em>(w)</em> and <em>(st)</em></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Instruction</td>
</tr>
<tr>
<td>Week _______</td>
</tr>
<tr>
<td>Week _______</td>
</tr>
</tbody>
</table>

The Reading Links Skill Trees introduces and uses key Dolch and high frequency words in context. The program integrates models and multiple practice opportunities for fluency – a key component of automaticity. Students can also review vocabulary while revisiting the story an unlimited number of times.

Kindergarten Irregular Words Instruction — High Priority

Tally the number of elements with each rating.  
1️⃣ 0️⃣ 0️⃣ 0️⃣

### Discretionary Items — Irregular Words Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>🟢 〇 〇</td>
<td>1. Limits # of words introduced within a lesson.</td>
</tr>
<tr>
<td>〇 〇 〇</td>
<td>2. Separates highly similar words (e.g., was/saw).</td>
</tr>
</tbody>
</table>

Kindergarten Irregular Words Instruction — Discretionary

Tally the number of elements with each rating.  
1️⃣ 1️⃣ 0️⃣ 0️⃣
Vocabulary refers to the words we must know to communicate effectively. In general, vocabulary can be described as oral vocabulary or reading vocabulary. Oral vocabulary refers to words that we use in speaking or recognize in listening. Reading vocabulary refers to words we recognize or use in print.

### High Priority Items — Vocabulary Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>● ● ○</td>
<td>1. Provides direct instruction of specific concepts and vocabulary. <em>(w)</em></td>
</tr>
<tr>
<td>● ● ○</td>
<td>2. Provides repeated and multiple exposures to critical vocabulary. <em>(w)</em> and <em>(st)</em></td>
</tr>
<tr>
<td>● ● ○</td>
<td>3. Integrates words into sentences and asks students to tell the meaning of the word in the sentence and to use it in a variety of contexts. <em>(w)</em></td>
</tr>
</tbody>
</table>

**Evidence**

- **Initial Instruction**
  - Vocabulary Builders Skill Trees provide aural and visual introduction of basal-specific or high frequency weekly word lists.
  - The Vocabulary Builders Skill Trees begin by introducing critical vocabulary words that are basal specific.
  - Vocabulary Builders Skill Trees provide multiple opportunities to see and hear words in sentences to determine meaning.

- **Week ________**
  - Vocabulary Builders Skill Trees integrate repeated use of words in context in a series of aural and visual activities.
  - Through a variety of activities, students are provided repeated exposure to critical vocabulary words (presented in isolation and in context), and are given multiple opportunities to practice aural and visual word recognition skills.
  - Students are evaluated on their knowledge of vocabulary words through spelling and speed tests.

Kindergarten Vocabulary Instruction — High Priority

Tally the number of elements with each rating.

1 ● 2 ○ 0 ○

### Discretionary Items — Vocabulary Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>● ○ ○</td>
<td>1. Reviews previously introduced words cumulatively.</td>
</tr>
<tr>
<td>● ○ ○</td>
<td>2. Provides opportunity for daily listening, speaking, and language experience.</td>
</tr>
<tr>
<td>● ○ ○</td>
<td>3. Incorporates exposure to a broad and diverse vocabulary through listening to a wide range of stories and informational texts.</td>
</tr>
</tbody>
</table>

Kindergarten Vocabulary Instruction — Discretionary

Tally the number of elements with each rating.

3 ● 0 ○ 0 ○ 0 ○
**Listening Comprehension:** The ability to listen to stories, answer questions, sequence events, learn new vocabulary, and retell information heard are the foundation of reading comprehension. Because many kindergarten children cannot yet read stories, it is imperative that they have frequent and rich opportunities to listen to and discuss stories and informational text that will extend their current understandings and vocabulary knowledge. [NRP, pg. 2-97]

### High Priority Items — Listening Comprehension

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Evidence</th>
</tr>
</thead>
</table>
|        | 1. Models and systematically reviews critical comprehension strategies. *(st)* [NRP, pg. 4-126; pp 4-100]  
  - Literal comprehension  
  - Retelling                                                                 | The Reading Links Skill Trees introduces and uses key Dolch and high frequency words in context.  
  The program integrates models and multiple practice opportunities for fluency – a prerequisite for comprehension.  
  Students can also review the story an unlimited number of times. |
| ●●○   | 2. Models and guides the students through story structure (e.g., setting __________), thinking out loud as the elements are being identified. *(w)* [NRP, pg. 4-100] |                                                                                                             |
| ●○ ø   | 3. Strategically selects and reinforces critical vocabulary during story reading (connects with background knowledge and examples). *(w)* and *(ss)* | The Reading Links Skill Trees begin by introducing key Dolch and high frequency words.  
  Students are provided with multiple exposures to this critical vocabulary through a variety of activities, which highlight the focus words.  
  Students can also review vocabulary while revisiting the story an unlimited number of times. |
| ●○ ø   | 4. Provides plentiful opportunities to listen to and explore narrative and expository text forms and to engage in interactive discussion of the messages and meanings of the text. *(ss)* [NRP, pp 4-109] | The Reading Links Skill Trees provide multiple opportunities for students to interact with a variety of texts.  
  The culminating activities provide students with the opportunity to reflect back on the story and share their thoughts with other students. |

Kindergarten Listening Comprehension — High Priority
Tally the number of elements with each rating.  

2 ● 1 ○ 1 ○
### Discretionary Items — Listening Comprehension

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>● ○ ○</td>
<td>1. Focuses on only a few important elements and introduces additional elements when the students can reliably identify those previously taught. [NRP, pg. 4-100]</td>
</tr>
<tr>
<td>● ○ ○</td>
<td>2. Models multiple examples and provides extensive guided practice in listening-comprehension strategies. [NRP, pg. 4-107]</td>
</tr>
<tr>
<td>● ○ ○</td>
<td>3. Inserts questions at strategic intervals to reduce the memory load for learners when introducing strategies in stories. (For example, have students retell the important events after each page rather than wait for the end of the story.) [NRP, pg. 4-110; pg. 4-111]</td>
</tr>
</tbody>
</table>

Kindergarten Listening Comprehension — Discretionary

Tally the number of elements with each rating.

0 ●  2 ○  1 ○

### Summary of Kindergarten Ratings

#### High Priority Items

<table>
<thead>
<tr>
<th>Instruction Type</th>
<th>Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phonemic Awareness Instruction (5)</td>
<td>4 ● 1 ○ 0 ○</td>
</tr>
<tr>
<td>Letter-Sound Association Instruction (3)</td>
<td>3 ● 0 ○ 0 ○</td>
</tr>
<tr>
<td>Decoding Instruction (5)</td>
<td>4 ● 0 ○ 1 ○</td>
</tr>
<tr>
<td>Irregular Words Instruction (1)</td>
<td>1 ● 0 ○ 0 ○</td>
</tr>
<tr>
<td>Vocabulary Instruction (3)</td>
<td>1 ● 2 ○ 0 ○</td>
</tr>
<tr>
<td>Listening Comprehension Instruction (4)</td>
<td>2 ● 1 ○ 1 ○</td>
</tr>
</tbody>
</table>

**Kindergarten High Priority Totals**

15 ● 4 ○ 2 ○

#### Discretionary Items

<table>
<thead>
<tr>
<th>Instruction Type</th>
<th>Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phonemic Awareness Instruction (4)</td>
<td>3 ● 0 ○ 1 ○</td>
</tr>
<tr>
<td>Letter-Sound Association Instruction (2)</td>
<td>1 ● 1 ○ 0 ○</td>
</tr>
<tr>
<td>Decoding Instruction (0) N/A</td>
<td>0 ● 0 ○ 0 ○</td>
</tr>
<tr>
<td>Irregular Words Instruction (2)</td>
<td>1 ● 1 ○ 0 ○</td>
</tr>
<tr>
<td>Vocabulary Instruction (3)</td>
<td>3 ● 0 ○ 0 ○</td>
</tr>
<tr>
<td>Listening Comprehension Instruction (3)</td>
<td>0 ● 2 ○ 1 ○</td>
</tr>
</tbody>
</table>

**Kindergarten Discretionary Totals**

8 ● 4 ○ 2 ○
### Kindergarten Design Features

<p>| | | | | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td>1. Coordinates and integrates <strong>phonemic awareness</strong> and <strong>phonics</strong> instruction and student materials.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>2. Provides ample practice on high-priority skills.</td>
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<tr>
<td></td>
<td>3. Provides explicit and systematic instruction.</td>
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<tr>
<td></td>
<td>4. Includes systematic and cumulative review of high priority skills.</td>
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<tr>
<td></td>
<td>5. Demonstrates and builds relationships between fundamental skills leading to higher order skills.</td>
<td></td>
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</tr>
</tbody>
</table>

### SUMMARY

#### Evidence of Sufficient Instructional Quality (specify elements)

<table>
<thead>
<tr>
<th></th>
<th>Evidence of Insufficient Instructional Quality (specify elements)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phonemic Awareness Skill Trees</strong></td>
<td><strong>Vocabulary Builder Skill Trees</strong></td>
</tr>
<tr>
<td>Pretest helps identify which specific phonemes students are struggling with.</td>
<td>Provides varied, meaningful, and interactive encounters with new words to facilitate spelling and word recognition improvement.</td>
</tr>
<tr>
<td>Provides developmentally appropriate, voice-based phoneme instruction.</td>
<td>Affords students unlimited remediation and practice opportunities while working at their own pace.</td>
</tr>
<tr>
<td>Uses a mastery-based learning approach proven to increase learning and retention.</td>
<td>Students can work with a generic word list, or one of many available basal lists.</td>
</tr>
<tr>
<td>A customized list of phonemes can be created so that students only work with those phonemes teachers deem necessary.</td>
<td><strong>Reading Links Skill Trees</strong></td>
</tr>
<tr>
<td>Provides instruction, errorless practice, and timed evaluation activities.</td>
<td>Contains sequential integrated language activities.</td>
</tr>
</tbody>
</table>

#### Phonics Sequences Skill Trees

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Uses a systematic and explicit approach to teach students to form words phonetically, and then use those words in sentences and paragraphs.</td>
<td>Students are provided with multiple exposures key vocabulary and models of fluent reading.</td>
</tr>
<tr>
<td>Uses a mastery-based learning approach to ensure learning and retention.</td>
<td></td>
</tr>
</tbody>
</table>
### Additional Comments

The Orchard K-3 Reading Program (which consist of five series of programs: Phonemic Awareness, Phonics Sequences, Vocabulary Builders, Reading Links, and Guided Comprehension plus the Reading and Writing Strategies 1-3 Skill Tree) also includes state-specific assessment. Using pretest results, students are placed in the appropriate Skill Trees at the appropriate level.
**Phonemic Awareness** is the ability to hear and manipulate the sound structure of language. It is a strong predictor of reading success. Phonemic awareness is an auditory skill and consists of multiple components.

### High Priority Items — Phonemic Awareness Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>¥ ¥ ¥</td>
<td>1. Allocates appropriate amount of daily time to blending, segmenting, and manipulating tasks until proficient. <em>(w)</em> [NRP, pg. 2-41]</td>
<td>Each Phonemic Awareness Skill Tree allows time-on-task to be determined by the educator. Students focus on one skill group until mastery is achieved.</td>
</tr>
<tr>
<td>¥ ¥ ¥</td>
<td>2. Incorporates letters into phonemic awareness activities. <em>(w)</em> [NRP, pg. 2-41]</td>
<td>Each Phonemic Awareness Skill Tree includes a pretest that assigns content to strengthen weak skill areas. In Phonics Sequences A (the first Skill Tree in the series) students have the opportunity to learn and practice the shapes (upper and lower case), names, and sounds of the letters of the alphabet. Based on the student’s Phonemic Awareness pretest results, the program follows a progression of instruction, errorless practice and review activities on key phonemes. As appropriate for the instruction level, the Phonemic Awareness program integrates sound-to-picture, then sound-to-letter and later sound-to-word correspondences.</td>
</tr>
</tbody>
</table>

First Grade Phonemic Awareness Instruction — High Priority

Tally the number of elements with each rating.

| 2 ¥ | 0 ¥ | 0 ¥ |
First Grade Phonemic Awareness Instruction — Discretionary

Tally the number of elements with each rating.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ ☐ ☐</td>
<td>1. Analyzes words at the phoneme level (i.e., working with individual sounds within words).</td>
</tr>
<tr>
<td>☐ ☐ ☐</td>
<td>2. Works with phonemes in all position in words (initial, final, medial).</td>
</tr>
<tr>
<td>☐ ☐ ☐</td>
<td>3. Progresses from identifying or distinguishing the positions of sounds in words to producing the sound and adding, deleting, and changing selected sounds.</td>
</tr>
<tr>
<td>☐ ☐ ☐</td>
<td>4. Works with increasingly longer words (three to four phonemes).</td>
</tr>
<tr>
<td>☐ ☐ ☐</td>
<td>5. Expands beyond consonant-vowel-consonant words (e.g., <em>sun</em>) to more complex phonemic structures (consonant blends).</td>
</tr>
</tbody>
</table>

3 ☐ 2 ☐ 0 ☐
## High Priority Items — Phonics Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>⬤ ⬤ ⬤</td>
<td>1. Progresses <strong>systematically</strong> from simple word types (e.g., consonant-vowel-consonant) and word lengths (e.g., number of phonemes) and word complexity (e.g., phonemes in the word, position of blends, stop sounds) to more complex words. <em>(ss)</em> [NRP, pg. 2-132]</td>
<td>Phonics Sequences Skill Trees systematically progress through carefully sequenced skills and activities. In addition, the teacher may customize the order of the activities based on student needs.</td>
</tr>
<tr>
<td>⬤ ⬤ ⬤</td>
<td>2. Models instruction at each of the fundamental stages (e.g., letter-sound correspondences, blending, reading whole words). <em>(w)</em> and <em>(ss)</em></td>
<td>Each Phonics Sequences Skill Tree provides extensive auditory modeling before each activity. Each Phonics Sequences Skill Tree provides extensive auditory modeling during each practice activity. Each Phonics Sequences Skill Tree continues to provide auditory modeling after instructional activities through review games.</td>
</tr>
<tr>
<td>⬤ ⬤ ⬤</td>
<td>3. Provides teacher-guided practice in controlled word lists and connected text in which students can apply their newly learned skills successfully. <em>(w)</em></td>
<td>Vocabulary Builder Skill Trees allow teachers to choose from basal-specific and high frequency word lists. Reading Links Skill Trees allow teachers to prioritize and reorder skills and stories to suit individual or class needs.</td>
</tr>
<tr>
<td>⬤ ⬤ ⬤</td>
<td>4. Includes repeated opportunities to read words in contexts in which students can apply their knowledge of letter-sound correspondences. <em>(w)</em> and <em>(ss)</em> [NRP, pg. 3-28]</td>
<td>In Phonics Sequences A (the first Skill Tree in the series) students have the opportunity to learn and practice the shapes (upper and lower case), names, and sounds of the letters of the alphabet. As students move through each Skill Tree, they sequentially progress from mere letter-sound recognition to the ability to recognize those sounds in words. Finally, students continue to master identifying sounds in words and begin to transfer their learning to reading sight words, sentences, and paragraphs.</td>
</tr>
</tbody>
</table>
### High Priority Items — Phonics Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚫ ⚫ ⚫</td>
<td>5. Uses decodable text based on specific phonics lessons in the early part of the first grade as an intervening step between explicit skill acquisition and the students' ability to read quality trade books. Decodable texts should contain the phonics elements and sight words that students have been taught. <em>(w)</em> and <em>(ss)</em></td>
<td>Phonics Sequences Skill Trees use a sequential approach in which students learn key sounds, learn to read sight words, and then transfer learning to read sentences and paragraphs.</td>
</tr>
</tbody>
</table>

First Grade Phonics Instruction — High Priority

Tally the number of elements with each rating.

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td></td>
<td>5 ⬤</td>
<td>0 ⬤</td>
<td>0 ⬤</td>
<td></td>
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</tr>
</tbody>
</table>

### Discretionary Items — Phonics Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>⚫ ⚫ ⚫</td>
<td>1. Provides integrated proactive instruction and practice in words that students first read, spell, and write.</td>
<td></td>
</tr>
<tr>
<td>⚫ ⚫ ⚫</td>
<td>2. Sequences words strategically to incorporate known letters or letter-sound combinations. [NRP, pg. 2-132]</td>
<td></td>
</tr>
<tr>
<td>⚫ ⚫ ⚫</td>
<td>3. Begins instruction in word families and word patterns (i.e., reading orthographic units of text, such as <em>at, sat, fat, rat</em>) after students have learned the letter-sound correspondences in the unit. [NRP, pg. 2-132]</td>
<td></td>
</tr>
<tr>
<td>⬤ ⬤ ⬤</td>
<td>4. Teaches students to process larger, highly represented patterns to increase fluency in word recognition.</td>
<td></td>
</tr>
</tbody>
</table>

First Grade Phonics Instruction — Discretionary

Tally the number of elements with each rating.

<p>| | | | | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td>3 ⬤</td>
<td>1 ⬤</td>
<td>0 ⬤</td>
<td></td>
</tr>
</tbody>
</table>
## High Priority Items — Irregular Words Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Selects words of high utility with ample practice for automaticity. <em>(st)</em></td>
<td>The Vocabulary Builders Skill Trees begin by introducing critical high utility and basal-specific vocabulary words. Students are evaluated on their knowledge of vocabulary words through spelling and speed tests.</td>
</tr>
<tr>
<td></td>
<td>2. Controls the number of irregular words introduced at one time. <em>(w)</em></td>
<td>The Vocabulary Builders Skill Trees use basal-specific vocabulary word list and therefore control the number of irregular words introduced at one time.</td>
</tr>
</tbody>
</table>

First Grade Irregular Words Instruction — High Priority

Tally the number of elements with each rating.

```
2️⃣ 0️⃣ 0️⃣ 0️⃣ 0️⃣
```

## Discretionary Items — Irregular Words Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Strategically separates high-frequency words (e.g., <em>was, saw; them, they, there</em>), that are often confused by students.</td>
</tr>
<tr>
<td></td>
<td>2. Points out irregularities while focusing student attention on all letters in the word.</td>
</tr>
</tbody>
</table>

First Grade Irregular Words Instruction — Discretionary

Tally the number of elements with each rating.

```
1️⃣ 1️⃣ 0️⃣ 0️⃣ 0️⃣
```
## FIRST GRADE

### Critical Elements Analysis

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>High Priority Items — Connected Text and Fluency Instruction</strong></td>
<td><strong>Initial Instruction</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Week ______</td>
</tr>
<tr>
<td><img src="https://example.com" alt="Circle" /> <img src="https://example.com" alt="Circle" /> <img src="https://example.com" alt="Circle" /></td>
<td>1. Introduces passage reading soon after students can read a sufficient number of words accurately. <em>(w)</em></td>
<td>Phonics Sequences Skill Trees use a sequential approach in which students learn key sounds, learn to read sight words, and then transfer learning to read sentences and paragraphs.</td>
</tr>
<tr>
<td><img src="https://example.com" alt="Circle" /> <img src="https://example.com" alt="Circle" /> <img src="https://example.com" alt="Circle" /></td>
<td>2. Contains regular words comprised of letter-sounds and words types that have been taught. <em>(w)</em> and <em>(ss)</em></td>
<td>Phonics Sequences Skill Trees use a sequential approach in which students learn key sounds, learn to read sight words, and then transfer learning to read sentences and paragraphs.</td>
</tr>
<tr>
<td><img src="https://example.com" alt="Circle" /> <img src="https://example.com" alt="Circle" /> <img src="https://example.com" alt="Circle" /></td>
<td>3. Contains only high-frequency irregular words that have been previously taught. <em>(ss)</em></td>
<td>Phonics Sequences Skill Trees use a sequential approach in which students learn key sounds, learn to read sight words, and then transfer learning to read sentences and paragraphs.</td>
</tr>
<tr>
<td><img src="https://example.com" alt="Circle" /> <img src="https://example.com" alt="Circle" /> <img src="https://example.com" alt="Circle" /></td>
<td>4. Uses initial stories/passages composed of a high percentage of regular words (minimum of 75-80% decodable words). <em>(w)</em></td>
<td>Phonics Sequences Skill Trees use a sequential approach in which students learn key sounds, learn to read sight words, and then transfer learning to read sentences and paragraphs. The Reading Links Skill Trees use a high percentage of high frequency, regular word within text passages.</td>
</tr>
<tr>
<td><img src="https://example.com" alt="Circle" /> <img src="https://example.com" alt="Circle" /> <img src="https://example.com" alt="Circle" /></td>
<td>5. Builds toward a 60 word per minute fluency goal by end of grade. <em>(ss)</em> [NRP, pg. 3-4]</td>
<td>The Reading Links Skill Trees include a timed reading feature for student to work toward the speed necessary for fluent reading.</td>
</tr>
</tbody>
</table>
### High Priority Items — Connected Text and Fluency Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6. Includes sufficient independent practice materials of appropriate difficulty for students to develop fluency. ((w)) and ((ss)) [NRP, pg. 3-28]</td>
<td>Initial Instruction&lt;br&gt;Week ______&lt;br&gt;Week ______&lt;br&gt;The Vocabulary Builder Skill Trees provide repeated exposure to critical vocabulary words (presented in isolation and in context) and multiple opportunities for students to practice aural and visual word recognition skills.&lt;br&gt;The Reading Links Skill Trees provide multiple opportunities for students to interact with a variety of texts.</td>
</tr>
</tbody>
</table>

First Grade Connected Text & Fluency Instruction — High Priority<br>Tally the number of elements with each rating.  

| 6 | 0 | 0 |

### Discretionary Items — Connected Text and Fluency Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Teaches explicit strategy to move from reading words in lists to reading words in sentences and passages.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Introduces fluency practice (e.g., repeated reading) after students read words in passages accurately. [NRP, pg. 3-28; pg. 3-15]</td>
<td></td>
</tr>
</tbody>
</table>

First Grade Connected Text & Fluency Instruction — Discretionary<br>Tally the number of elements with each rating.  

| 2 | 0 | 0 |
## High Priority Items — Vocabulary Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Provides direct instruction of specific concepts and vocabulary. (<em>w</em>)</td>
<td>Vocabulary Builders Skill Trees provide aural and visual introduction of basal-specific or high frequency weekly word lists.</td>
</tr>
<tr>
<td></td>
<td>2. Provides repeated and multiple exposures to critical vocabulary. (<em>w</em>) and (<em>st</em>)</td>
<td>The Vocabulary Builders Skill Trees begin by introducing critical vocabulary words that are basal specific. In the Guided Comprehension Skill Trees, students review vocabulary prior to reading the story.</td>
</tr>
<tr>
<td></td>
<td>3. Integrates words into sentences and asks students to tell the meaning of the word in the sentence and to use it in a variety of contexts. (<em>w</em>)</td>
<td>Vocabulary Builders Skill Trees provide multiple opportunities to see and hear words in sentences to determine meaning.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Instruction</td>
</tr>
<tr>
<td>Vocabulary Builders Skill Trees provide aural and visual introduction of basal-specific or high frequency weekly word lists.</td>
</tr>
<tr>
<td>The Vocabulary Builders Skill Trees begin by introducing critical vocabulary words that are basal specific. In the Guided Comprehension Skill Trees, students review vocabulary prior to reading the story.</td>
</tr>
<tr>
<td>Vocabulary Builders Skill Trees provide multiple opportunities to see and hear words in sentences to determine meaning.</td>
</tr>
</tbody>
</table>

First Grade Vocabulary Instruction— High Priority
Tally the number of elements with each rating.

2 ● 1 ○ 0 ○

## Discretionary Items — Vocabulary Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Reviews previously introduced words cumulatively.</td>
</tr>
<tr>
<td></td>
<td>2. Provides opportunity for daily listening, speaking, and language experience.</td>
</tr>
<tr>
<td></td>
<td>3. Incorporates exposure to a broad and diverse vocabulary through listening to a wide range of stories and informational texts.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>First Grade Vocabulary Instruction— Discretionary</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 ● 0 ○ 0 ○</td>
</tr>
</tbody>
</table>
Tally the number of elements with each rating.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Evidence</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Guides students through sample text in which teachers think out loud as they identify the components of story structure. <em>(w)</em> [NRP, pg. 4-122]</td>
<td>Graphic organizers and story maps are integrated throughout the Guided Comprehension Skill Trees.</td>
<td>Week _____</td>
</tr>
<tr>
<td></td>
<td>2. Provides plentiful opportunities to listen to and explore narrative and expository text forms and to engage in interactive discussion of the messages and meanings of the text. <em>(ss)</em> [NRP, pg. 4-109]</td>
<td>The Guided Comprehension Skill Trees exposes students to both narrative and expository text forms. The Reading Links Skill Trees provide multiple opportunities for students to interact with a variety of texts.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Explicitly teaches critical comprehension strategy (e.g., main idea, literal, inferential, retell, prediction). <em>(w)</em> and <em>(ss)</em></td>
<td>In the instruction phase, Guided Comprehension Skill Trees guide students through the process of answering a variety of comprehension questions, such as main idea, literal, inferential, and prediction. In the application phase, students are provided with multiple opportunities to practice critical comprehension strategies.</td>
<td></td>
</tr>
</tbody>
</table>

First Grade Reading Comprehension Instruction — Discretionary
Tally the number of elements with each rating.  

```
 3 ● 0 ○ 0 ○
```
## Discretionary Items — Reading Comprehension Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Tally</th>
</tr>
</thead>
</table>
| ● ○ ○  | 1. The text for initial instruction in comprehension:  
- begins with text units appropriate for the learner  
- uses familiar vocabulary  
- activates prior knowledge [NRP, pg. 4-108]  
- uses simple sentences  
- begins with short passages to reduce the memory load for learners                                                                                     | 2     |
| ○ ○ ○  | 2. Introduces text where the structure of text is explicit (beginning, middle, and end being obvious). [NRP, pg. 4-112]                                                                                   | 1     |
| ○ ○ ○  | 3. Has students discuss the story structure orally and make comparisons with other stories. [NRP, pg. 4-100]                                                                                          | 0     |

**First Grade Reading Comprehension Instruction — Discretionary**

Tally the number of elements with each rating.  

```
2 ● 1 ○ 0 ○
```

### Summary of First Grade Ratings

#### High Priority Items

<table>
<thead>
<tr>
<th>Item</th>
<th>Tally</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phonemic Awareness Instruction (2)</td>
<td>2 ● 0 ○ 0 ○</td>
</tr>
<tr>
<td>Phonics Instruction (5)</td>
<td>5 ● 0 ○ 0 ○</td>
</tr>
<tr>
<td>Irregular Words Instruction (2)</td>
<td>2 ● 0 ○ 0 ○</td>
</tr>
<tr>
<td>Connected Text and Fluency Instruction (6)</td>
<td>6 ● 0 ○ 0 ○</td>
</tr>
<tr>
<td>Vocabulary Development (3)</td>
<td>2 ● 1 ○ 0 ○</td>
</tr>
<tr>
<td>Reading Comprehension Instruction (3)</td>
<td>3 ● 0 ○ 0 ○</td>
</tr>
</tbody>
</table>

**First Grade High Priority Totals**

```
20 ● 1 ○ 0 ○
```

#### Discretionary Items

<table>
<thead>
<tr>
<th>Item</th>
<th>Tally</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phonemic Awareness Instruction (5)</td>
<td>3 ● 2 ○ 0 ○</td>
</tr>
<tr>
<td>Phonics Instruction (4)</td>
<td>3 ● 1 ○ 0 ○</td>
</tr>
<tr>
<td>Irregular Words Instruction (2)</td>
<td>1 ● 1 ○ 0 ○</td>
</tr>
<tr>
<td>Connected Text and Fluency Instruction (2)</td>
<td>2 ● 0 ○ 0 ○</td>
</tr>
<tr>
<td>Vocabulary Development (3)</td>
<td>3 ● 0 ○ 0 ○</td>
</tr>
<tr>
<td>Reading Comprehension Instruction (3)</td>
<td>3 ● 0 ○ 0 ○</td>
</tr>
</tbody>
</table>

**First Grade Discretionary Totals**

```
15 ● 4 ○ 0 ○
```
### First Grade Design Features

| 1. | 1. Aligns and coordinates the words used in phonics/word recognition activities with those used in fluency building. |
| 2. | 2. Provides ample practice on high-priority skills. |
| 3. | 3. Provides explicit and systematic instruction. |
| 4. | 4. Includes systematic and cumulative review of high priority skills. |
| 5. | 5. Demonstrates and builds relationships between fundamental skills leading to higher order skills. |

### SUMMARY

<table>
<thead>
<tr>
<th>Evidence of Sufficient Instructional Quality (specify elements)</th>
<th>Evidence of Insufficient Instructional Quality (specify elements)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phonemic Awareness Skill Trees</strong></td>
<td><strong>Vocabulary Builder Skill Trees</strong></td>
</tr>
<tr>
<td>Pretest helps identify which specific phonemes students are struggling with.</td>
<td>Provides varied, meaningful, and interactive encounters with new words to facilitate spelling and word recognition improvement.</td>
</tr>
<tr>
<td>Provides developmentally appropriate, voice-based phoneme instruction.</td>
<td>Affords students unlimited remediation and practice opportunities while working at their own pace.</td>
</tr>
<tr>
<td>Uses a mastery-based learning approach proven to increase learning and retention.</td>
<td>Students can work with a generic word list, or one of many available basal lists.</td>
</tr>
<tr>
<td>A customized list of phonemes can be created so that students only work with those phonemes teachers deem necessary.</td>
<td><strong>Reading Links Skill Trees</strong></td>
</tr>
<tr>
<td>Provides instruction, errorless practice, and timed evaluation activities.</td>
<td>Contains sequential integrated language activities.</td>
</tr>
<tr>
<td><strong>Phonics Sequences Skill Trees</strong></td>
<td><strong>Guided Comprehension Skill Trees</strong></td>
</tr>
<tr>
<td>Uses a systematic and explicit approach to teach students to form words phonetically, and then use those words in sentences and paragraphs.</td>
<td>Students are provided with multiple exposures key vocabulary and models of fluent reading.</td>
</tr>
<tr>
<td>Uses a mastery-based learning approach to ensure learning and retention.</td>
<td>Models Guided Reading strategy.</td>
</tr>
<tr>
<td><strong>Grade-specific (Flesh-Kincaid readability) passages cover a wide range of topics and are written in a variety of text formats (narrative, informational, persuasive, and work).</strong></td>
<td>Includes five instructional levels: Pretest, Instruction, Practice, Application, and Posttest.</td>
</tr>
</tbody>
</table>
The Orchard K-3 Reading Program (which consist of five series of programs: Phonemic Awareness, Phonics Sequences, Vocabulary Builders, Reading Links, and Guided Comprehension plus the Reading and Writing Strategies 1-3 Skill Tree) also includes state-specific assessment. Using pretest results, students are placed in the appropriate Skill Trees at the appropriate level.
**Phonics** is the ability to recognize words accurately, fluently, and independently is fundamental to reading in an alphabetic writing system. For kindergarten students, critical skills include learning to associate sounds with letters, using those associations to decode and read simple words, and learning to recognize important nondecodable words. [NRP, pg. 2-41; pg. 2-93]

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Evidence</th>
<th>Initial Instruction</th>
<th>Week _____</th>
<th>Week _____</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Teaches advanced phonic-analysis skills explicitly, first in isolation, then in words and connected text and applies to other program materials (e.g., trade books, anthologies) when students are proficient. <em>(w)</em> and <em>(ss)</em> [NRP pg. 2-13]</td>
<td>Phonics Sequences Skill Trees systematically progress through carefully sequenced skills and activities. In addition, the teacher may customize the order of the activities based on student needs.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reading Links and Guided Comprehension Skill Trees provide students multiple exposures to high utility words in connected text.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Provides teacher guided practice in word lists and controlled contexts in which students can apply newly learned skills successfully. <em>(w)</em></td>
<td>Vocabulary Builder Skill Trees allow teachers to choose from basal-specific and high frequency word lists. Reading Links Skill Trees allow teachers to prioritize and reorder skills and stories to suit individual or class needs.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Teaches explicit strategy to read multisyllabic words by using prefixes, suffixes, and known word parts. <em>(w)</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Second Grade Phonics Instruction — High Priority
Tally the number of elements with each rating.

2 ● 0 ○ 1 ○
## Critical Elements Analysis

### Second Grade Phonics Instruction — Discretionary

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>⬜️ ⬜️ ⬜️</td>
<td>1. Avoids assuming that learners will automatically transfer skills from one word type to another. When introducing a new letter combination, prefix, or word ending, models each of the fundamental stages of blending the word and then reading the whole word.</td>
</tr>
<tr>
<td>⬜️ ⬜️ ⬜️</td>
<td>2. Separates auditorily and visually similar letter combinations in the instructional sequence (e.g., does not introduce both sounds for <em>oo</em> simultaneously; separates <em>ai, au</em>).</td>
</tr>
<tr>
<td>⬜️ ⬜️ ⬜️</td>
<td>3. Ensures that students know the sounds of the individual letters prior to introducing larger orthographic units (e.g., <em>ill, ap, ing</em>).</td>
</tr>
<tr>
<td>⬜️ ⬜️ ⬜️</td>
<td>4. Offers repeated opportunities for students to read words in contexts where they can apply their advanced phonics skills with a high level of success. [NRP, pg. 3-28; 3-15]</td>
</tr>
<tr>
<td>⬜️ ⬜️ ⬜️</td>
<td>5. Incorporates spelling to reinforce word analysis. After students can read words, provides explicit instruction in spelling, showing students how to map the sounds of letters onto print.</td>
</tr>
<tr>
<td>⬜️ ⬜️ ⬜️</td>
<td>6. Makes clear the connections between decoding (symbol to sound) and spelling (sound to symbol).</td>
</tr>
</tbody>
</table>

Second Grade Phonics Instruction — Discretionary

Tally the number of elements with each rating.  

-6 ⬜️  

0 ⬜️  

0 ⬜️
### High Priority Items — Irregular Words Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="." alt="1" />/2</td>
<td>1. Selects words that have high utility; that is, words that are used frequently in grade-appropriate literature and informational text. (ss)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Instruction</td>
</tr>
<tr>
<td>Week ______</td>
</tr>
<tr>
<td>Week ______</td>
</tr>
</tbody>
</table>

Vocabulary Builders Skill Trees provide aural and visual introduction of basal-specific or high frequency weekly word lists. Reading Links Skill Trees provide guided practice with focus words in multiple, sequenced, and spiraled activities beyond initial word identification and preview activities.

Vocabulary Builders Skill Trees integrate repeated use of words in context in a series of aural and visual activities.

---

Second Grade Irregular Words Instruction — High Priority

Tally the number of elements with each rating.  

1 ![1](.)  
0 ![0](.)  
0 ![0](.)

### Discretionary Items — Irregular Words Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="." alt="1" />/2</td>
<td>1. Sequences high-frequency irregular words to avoid potential confusion. For example, high-frequency words that are often confused by students should be strategically separated for initial instruction.</td>
</tr>
</tbody>
</table>

| ![1](.)/2 | 2. Limits the number of sight words introduced at one time. |

| ![1](.)/2 | 3. Preteaches the sight words prior to reading connected text. |

| ![1](.)/2 | 4. Provides a cumulative review of important high-frequency sight words as part of daily reading instruction. |

Second Grade Irregular Words Instruction — Discretionary

Tally the number of elements with each rating.  

3 ![3](.)  
1 ![1](.)  
0 ![0](.)
<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Provides direct instruction of specific concepts and vocabulary essential to understanding text. <em>(w)</em> [NRP, pg. 4-4]</td>
<td>Vocabulary Builders Skill Trees provide aural and visual introduction of basal-specific or high frequency weekly word lists.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vocabulary Builders Skill Trees integrate repeated use of words in context in a series of aural and visual activities.</td>
</tr>
<tr>
<td></td>
<td>2. Provides repeated and multiple exposures to critical vocabulary. <em>(w)</em> and <em>(st)</em> [NRP, pg. 4-4]</td>
<td>The Vocabulary Builders Skill Trees begin by introducing critical vocabulary words that are basal specific. In the Guided Comprehension Skill Trees, students review vocabulary prior to reading the story.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>In Vocabulary Builders Skill Trees, students use auditory and visual repetition to review vocabulary words.</td>
</tr>
</tbody>
</table>

Second Grade Vocabulary Instruction — High Priority
Tally the number of elements with each rating.

2 ✰ 0 ○ 0 ○

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Variety of methods [NRP, pg. 4-4]</td>
</tr>
<tr>
<td></td>
<td>2. Incorporates exposure to a broad and diverse vocabulary through listening to an reading stories and informational texts. [NRP, pg. 4-4]</td>
</tr>
<tr>
<td></td>
<td>3. Integrates words into sentences and asks students to tell the meaning of the word in the sentence and to use it in a variety of contexts. [NRP, pg. 4-4]</td>
</tr>
<tr>
<td></td>
<td>4. Reviews previously introduced words cumulatively. [NRP, pg. 4-4]</td>
</tr>
<tr>
<td></td>
<td>5. Teaches strategy for word meanings based on meaning of prefixes and suffixes.</td>
</tr>
<tr>
<td></td>
<td>6. Introduces the prefix or suffix in isolation, indicating its meaning and then connecting it in words.</td>
</tr>
</tbody>
</table>
### Critical Elements Analysis

#### Second Grade Vocabulary Instruction — Discretionary Items

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚫ ⚫ ✘</td>
<td>7. Illustrates the prefix or suffix with multiple examples.</td>
</tr>
<tr>
<td>✘ ⚫ ⚫</td>
<td>8. Restructuring of vocabulary tasks for at-risk, low achieving students.</td>
</tr>
<tr>
<td>⚫ ⚫ ✘</td>
<td>9. Uses examples when the roots are familiar to students (e.g., <em>remake</em> and <em>replay</em> as opposed to <em>record</em> and <em>recode</em>.)</td>
</tr>
<tr>
<td>⚫ ⚫ ✘</td>
<td>10. Separates prefixes that appear similar in initial instructional sequences (e.g., <em>pre, pro</em>).</td>
</tr>
</tbody>
</table>

Second Grade Vocabulary Instruction — Discretionary

Tally the number of elements with each rating.  

3 ● 1 ○ 5 ○
## High Priority Items — Passage Reading - Fluency Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="" alt=" " /> <img src="" alt=" " /> <img src="" alt=" " /></td>
<td>1. Contains regular words comprised of phonic elements and word types that have been introduced. <em>(ss)</em></td>
<td>Phonics Sequences Skill Trees use a sequential approach in which students learn key sounds, learn to read sight words, and then transfer learning to read sentences and paragraphs.</td>
</tr>
<tr>
<td><img src="" alt=" " /> <img src="" alt=" " /> <img src="" alt=" " /></td>
<td>2. Selects majority of high frequency irregular words from list of commonly used words in English. <em>(ss)</em></td>
<td>Phonics Sequences Skill Trees use a sequential approach in which students learn key sounds, learn to read sight words, and then transfer learning to read sentences and paragraphs. The Vocabulary Builders and Reading Links Skill Trees use a high percentage of high frequency, regular words within text passages.</td>
</tr>
<tr>
<td><img src="" alt=" " /> <img src="" alt=" " /> <img src="" alt=" " /></td>
<td>3. Builds toward a 90 word-per-minute fluency goal by end of grade 2. Assesses fluency regularly. <em>(ss)</em> [NRP, pg. 3-4]</td>
<td>The Reading Links Skill Trees include a timed reading feature for student to work toward the speed necessary for fluent reading.</td>
</tr>
</tbody>
</table>

Second Grade Passage Reading - Fluency Instruction — High Priority
Tally the number of elements with each rating.

3 ![ ]( ) 0 ![ ]( ) 0 ![ ]( )
<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>⬤ ⬤ ⬤</td>
<td>1. Contains only irregular words that have been previously taught.</td>
</tr>
<tr>
<td>⬤ ⬤ ⬤</td>
<td>2. Introduces repeated readings after students read words in passages accurately. [NRP, pg. 3-28; 3-15]</td>
</tr>
<tr>
<td>⬤ ⬤ ⬤</td>
<td>3. Includes sufficient independent practice materials of appropriate difficulty for students to develop fluency. [NRP, pg. 3-28]</td>
</tr>
</tbody>
</table>

Second Grade Passage Reading - Fluency Instruction — Discretionary
Tally the number of elements with each rating.  

___2___ ⬤ ⬤ ⬤   ___1___ ⬤ ⬤ ⬤   ___0___ ⬤ ⬤ ⬤
<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>![bullet] ![philosopher] ![philosopher] ![philosopher] ![philosopher]</td>
<td>1. Teaches conventions of informational text (e.g., titles, chapter headings) to locate important information. (w) and (ss)</td>
<td>The Reading and Writing Strategies 1-3 Skill Tree uses a multiple-choice format with immediate feedback to teach conventions of informational text.</td>
</tr>
<tr>
<td>![philosopher] ![philosopher] ![philosopher] ![philosopher] ![philosopher]</td>
<td>2. Teaches explicit strategy to interpret information from graphs, diagrams, and charts. (w) and (ss)</td>
<td>The Guided Comprehension Skill Trees include informative and work texts, which integrate multiple opportunities to guide students through the process of interpreting graphs, diagrams, and charts.</td>
</tr>
<tr>
<td>![philosopher] ![philosopher] ![philosopher] ![philosopher] ![philosopher]</td>
<td>3. Teaches or activates prior knowledge to increase a student's understanding of what is read. [NRP, pg. 4-108] (w)</td>
<td>The culminating activities in the Guided Comprehension and Reading Links Skill Trees provide students with the opportunity to reflect back on the story and share their thoughts with other students.</td>
</tr>
<tr>
<td>![philosopher] ![philosopher] ![philosopher] ![philosopher] ![philosopher]</td>
<td>4. Teaches skill or strategy (e.g., comprehension monitoring, summarizing) explicitly with the aid of carefully designed examples and practice. (w) and (ss) [NRP, pg. 4-108]</td>
<td>In the instruction phase, Guided Comprehension Skill Trees guide students through the process of using a variety of comprehension strategies, such as summarizing.</td>
</tr>
<tr>
<td>![philosopher] ![philosopher] ![philosopher] ![philosopher] ![philosopher]</td>
<td>5. Continues skill or strategy instruction across several instructional sessions to illustrate the applicability and utility of the skill or strategy. (st)</td>
<td>In the instruction phase, Guided Comprehension Skill Trees guide students through the process of using a variety of comprehension strategies.</td>
</tr>
<tr>
<td>![philosopher] ![philosopher] ![philosopher] ![philosopher] ![philosopher]</td>
<td></td>
<td>In the application phase, students are provided with multiple opportunities to practice critical comprehension strategies.</td>
</tr>
<tr>
<td>![philosopher] ![philosopher] ![philosopher] ![philosopher] ![philosopher]</td>
<td></td>
<td>In the assessment phase, students’ ability to use comprehension strategies is evaluated.</td>
</tr>
</tbody>
</table>
### High Priority Items — Reading Comprehension Instruction

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>6. Uses story grammar structure as a tool for prompting information to compare and contrast, organize information, and group related ideas to maintain a consistent focus. <em>(w)</em> [NRP, pg. 4-112]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Graphic organizers and story maps are integrated throughout the Guided Comprehension Skill Trees.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Students are guided through the process of completing the story maps.</td>
</tr>
</tbody>
</table>

Second Grade Reading Comprehension Instruction — Discretionary

Tally the number of elements with each rating.

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</tbody>
</table>

### Discretionary Items — Reading Comprehension Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>●</td>
<td>1. Teaches narrative and informational text.</td>
</tr>
<tr>
<td>●</td>
<td>2. Organizes instruction in a coherent structure.</td>
</tr>
<tr>
<td>●</td>
<td>3. Connects previously taught skills and strategies with new content and text. [NRP, 4-107]</td>
</tr>
<tr>
<td>●</td>
<td>4. Cumulatively builds a repertoire of skills and strategies that are introduced, applied, and integrated with appropriate texts and for authentic purposes over the course of the year. [NRP, 4-107]</td>
</tr>
<tr>
<td>●</td>
<td>5. Teaches analyzing elements of narrative text and comparing and contrasting elements within and among texts.</td>
</tr>
<tr>
<td>●</td>
<td>6. Uses graphic organizers on the content of passages.</td>
</tr>
</tbody>
</table>

Second Grade Reading Comprehension Instruction — Discretionary

Tally the number of elements with each rating.

<p>| | | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>6</td>
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<td>0</td>
</tr>
</tbody>
</table>
## Summary of Second Grade Ratings

<table>
<thead>
<tr>
<th>High Priority Items</th>
<th>Discretionary Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phonics Instruction (3)</td>
<td>Phonics Instruction (6)</td>
</tr>
<tr>
<td>2 ●</td>
<td>6 ●</td>
</tr>
<tr>
<td>Irregular Words Instruction (1)</td>
<td>Irregular Words Instruction (4)</td>
</tr>
<tr>
<td>1 ●</td>
<td>3 ●</td>
</tr>
<tr>
<td>Vocabulary Instruction (2)</td>
<td>Vocabulary Instruction (10)</td>
</tr>
<tr>
<td>2 ●</td>
<td>4 ●</td>
</tr>
<tr>
<td>Passage Reading - Fluency Instruction (3)</td>
<td>Passage Reading - Fluency Instruction (3)</td>
</tr>
<tr>
<td>3 ●</td>
<td>2 ●</td>
</tr>
<tr>
<td>Reading Comprehension Instruction (6)</td>
<td>Reading Comprehension Instruction (6)</td>
</tr>
<tr>
<td>4 ●</td>
<td>6 ●</td>
</tr>
</tbody>
</table>

**Second Grade High Priority Totals**: 12 ●

**Second Grade Discretionary Totals**: 21 ●

### Second Grade Design Features

1. Aligns and coordinates the words used in phonics/word recognition activities with those used in fluency building.
2. Provides ample practice on high-priority skills.
3. Provides explicit and systematic instruction.
4. Includes systematic and cumulative review of high priority skills.
5. Demonstrates and builds relationships between fundamental skills leading to higher order skills.
## SUMMARY

<table>
<thead>
<tr>
<th>Evidence of Sufficient Instructional Quality (specify elements)</th>
<th>Evidence of Insufficient Instructional Quality (specify elements)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phonemic Awareness Skill Trees</strong></td>
<td><strong>Vocabulary Builder Skill Trees</strong></td>
</tr>
<tr>
<td>Pretest helps identify which specific phonemes students are struggling with.</td>
<td>Provides varied, meaningful, and interactive encounters with new words to facilitate spelling and word recognition improvement.</td>
</tr>
<tr>
<td>Provides developmentally appropriate, voice-based phoneme instruction.</td>
<td>Affords students unlimited remediation and practice opportunities while working at their own pace.</td>
</tr>
<tr>
<td>Uses a mastery-based learning approach proven to increase learning and retention.</td>
<td>Students can work with a generic word list, or one of many available basal lists.</td>
</tr>
<tr>
<td>A customized list of phonemes can be created so that students only work with those phonemes teachers deem necessary.</td>
<td><strong>Reading Links Skill Trees</strong></td>
</tr>
<tr>
<td>Provides instruction, errorless practice, and timed evaluation activities.</td>
<td>Contains sequential integrated language activities.</td>
</tr>
<tr>
<td><strong>Phonics Sequences Skill Trees</strong></td>
<td></td>
</tr>
<tr>
<td>Uses a systematic and explicit approach to teach students to form words phonetically, and then use those words in sentences and paragraphs.</td>
<td>Students are provided with multiple exposures key vocabulary and models of fluent reading.</td>
</tr>
<tr>
<td>Uses a mastery-based learning approach to ensure learning and retention.</td>
<td><strong>Guided Comprehension Skill Trees</strong></td>
</tr>
<tr>
<td></td>
<td>Models Guided Reading strategy.</td>
</tr>
<tr>
<td></td>
<td>Includes five instructional levels: Pretest, Instruction, Practice, Application, and Posttest.</td>
</tr>
<tr>
<td></td>
<td>Grade-specific (Flesh-Kincaid readability) passages cover a wide range of topics and are written in a variety of text formats (narrative, informational, persuasive, and work).</td>
</tr>
</tbody>
</table>
## Additional Comments

The Orchard K-3 Reading Program (which consist of five series of programs: Phonemic Awareness, Phonics Sequences, Vocabulary Builders, Reading Links, and Guided Comprehension plus the Reading and Writing Strategies 1-3 Skill Tree) also includes state-specific assessment. Using pretest results, students are placed in the appropriate Skill Trees at the appropriate level.
### High Priority Items — Decoding and Word Recognition Instruction [Systematic NRP, pg. 2-132]

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Teaches strategies to decode multisyllabic words using the structural features of such word parts as affixes (e.g., <em>pre-, mis-, tion</em>) to aid in word recognition. <em>(w)</em></td>
<td>Initial Instruction</td>
</tr>
<tr>
<td></td>
<td>2. Emphasizes reading harder and bigger words (i.e., multisyllabic words) and reading all words more fluently. <em>(ss)</em></td>
<td>Reading Links Skill Trees provide guided practice with focus words in multiple, sequenced, and spiraled activities beyond initial word identification and preview activities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vocabulary Builders Skill Trees integrate repeated use of words in context in a series of aural and visual activities.</td>
</tr>
</tbody>
</table>

Third Grade Decoding and Word Recognition Instruction — High Priority

Tally the number of elements with each rating.  

<table>
<thead>
<tr>
<th>Rating</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
<td>1</td>
</tr>
<tr>
<td>☐</td>
<td>0</td>
</tr>
<tr>
<td>☐</td>
<td>1</td>
</tr>
</tbody>
</table>
### Discretionary Items — Decoding and Word Recognition Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>☒ ☐ ☐</td>
<td>1. Separates word parts that are highly similar (e.g., <em>ight</em> and <em>aigh</em>).</td>
</tr>
<tr>
<td>☒ ☐ ☐</td>
<td>2. Introduces word parts that occur with high frequency over those that occur in only a few words.</td>
</tr>
<tr>
<td>☒ ☐ ☐</td>
<td>3. Teaches the word parts first and then incorporates the words into sentences and connected text.</td>
</tr>
<tr>
<td>☒ ☐ ☐</td>
<td>4. Extends instruction to orthographically larger and more complex units (e.g., <em>ight, aught, own</em>).</td>
</tr>
<tr>
<td>☒ ☐ ☐</td>
<td>5. Provides explicit explanations, including modeling, &quot;Think-alouds,&quot; guided practice, and the gradual transfer of responsibility to students.</td>
</tr>
<tr>
<td>☒ ☐ ☐</td>
<td>6. Relies on examples more than abstract rules. (Begin with familiar words. Show &quot;nonexamples.&quot; Use word parts rather than have students search for little words within a word. <em>Examples</em>: depart, report.)</td>
</tr>
<tr>
<td>☒ ☐ ☐</td>
<td>7. Makes clear the limitations of structural analysis.</td>
</tr>
<tr>
<td>☒ ☐ ☑</td>
<td>8. Uses extended text in opportunities for application.</td>
</tr>
</tbody>
</table>

Third Grade Decoding and Word Recognition Instruction — Discretionary

Tally the number of elements with each rating.

4 ☒ 2 ☐ 2 ☑
### High Priority Items — Vocabulary Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Teaches strategies to use context to gain the meaning of an unfamiliar word. Context includes the words surrounding the unfamiliar word that provide information to its meaning. <em>(w)</em></td>
<td><strong>Initial Instruction</strong>&lt;br&gt;Vocabulary Builders Skill Trees provide multiple opportunities to see and hear words in sentences to determine meaning.</td>
</tr>
<tr>
<td></td>
<td>2. Repeated and multiple exposures to vocabulary. <em>(st)</em> [NRP, pg. 4-4]</td>
<td><strong>Initial Instruction</strong>&lt;br&gt;The Vocabulary Builders Skill Trees begin by introducing critical vocabulary words that are basal specific. In the Reading Links and Guided Comprehension Skill Trees, students review vocabulary prior to reading the story. <strong>Evidence</strong>&lt;br&gt;In Vocabulary Builders Skill Trees, students are provided with repeated exposure to critical vocabulary words and are given multiple opportunities to practice aural and visual word recognition skills. In Reading Links and Guided Comprehension Skill Trees, vocabulary words are highlighted throughout the story.</td>
</tr>
<tr>
<td></td>
<td>3. Emphasizes direct instruction in specific concepts and vocabulary essential to understanding text. <em>(w)</em></td>
<td><strong>Initial Instruction</strong>&lt;br&gt;In the Reading Links and Guided Comprehension Skill Trees, students review vocabulary prior to reading the story. <strong>Evidence</strong>&lt;br&gt;In Reading Links and Guided Comprehension Skill Trees, vocabulary words are highlighted throughout the story.</td>
</tr>
<tr>
<td></td>
<td>4. Provides exposure to a broad and diverse vocabulary through listening to and reading stories. <em>(ss)</em> [NRP, pg. 4-4]</td>
<td><strong>Initial Instruction</strong>&lt;br&gt;In the Reading Links and Guided Comprehension Skill Trees, students review vocabulary prior to reading the story. <strong>Evidence</strong>&lt;br&gt;In Reading Links Skill Trees, vocabulary words are highlighted throughout the story. In addition, aural modeling is provided upon student request.</td>
</tr>
<tr>
<td></td>
<td>5. Variety of methods; variety of contexts. <em>(ss)</em> [NRP, pg. 4-4]</td>
<td><strong>Initial Instruction</strong>&lt;br&gt;In Vocabulary Builders and Reading Links Skill Trees, students are provided with repeated exposure to critical vocabulary words and are given multiple opportunities to practice aural and visual word recognition skills. <strong>Evidence</strong>&lt;br&gt;In Vocabulary Builders and Reading Links Skill Trees, students are evaluated on their knowledge of vocabulary words through spelling and speed tests.</td>
</tr>
</tbody>
</table>

Third Grade Vocabulary Instruction — High Priority

Tally the number of elements with each rating.

5 ○ 0 ○ 0 ○
### Discretionary Items — Vocabulary Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>● ○ ○</td>
<td>1. Teaches dictionary usage explicitly with grade-appropriate dictionaries that allow students to access and understand the meaning of an unknown word. Uses words in context and that are encountered frequently.</td>
</tr>
<tr>
<td>● ○ ○</td>
<td>2. Restructuring of vocabulary tasks for at-risk, low achievers.</td>
</tr>
<tr>
<td>● ○ ○</td>
<td>3. Extends the understanding of concepts and vocabulary of the English language through (1) learning and using antonyms and synonyms; (2) using individual words in compound words to predict the meaning; (3) using prefixes and suffixes to assist in word meaning; and (4) learning simple multiple-meaning words.</td>
</tr>
</tbody>
</table>

Third Grade Vocabulary Instruction — Discretionary

Tally the number of elements with each rating.  

0 ●  2 ○  1 ○
### High Priority Items — Passage Reading - Fluency Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Evidence</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>● ● ●</td>
<td>1. Contains only words comprised of phonic elements and word types that have been introduced. (w) and (ss)</td>
<td>Phonics Sequences Skill Trees use a sequential approach in which students learn key sounds, learn to read sight words, and then transfer learning to read sentences and paragraphs.</td>
<td></td>
</tr>
<tr>
<td>● ● ●</td>
<td>2. Builds toward a 120 word-per-minute fluency goal by end of grade 3. Assess fluency regularly. (ss) [NRP, pg. 3-28]</td>
<td>The Reading Links Skill Trees include a timed reading feature for student to work toward the speed necessary for fluent reading.</td>
<td></td>
</tr>
<tr>
<td>● ● ●</td>
<td>3. Includes sufficient independent practice materials of appropriate difficulty for students to develop fluency. (w) [NRP, pg. 3-28]</td>
<td>The Reading Links and Guided Comprehension Skill Trees provide exposure to numerous texts in a variety of formats.</td>
<td></td>
</tr>
</tbody>
</table>

Third Grade Passage Reading - Fluency Instruction — High Priority

Tally the number of elements with each rating.  
2 ● 1 ○ 0 ○

### Discretionary Items — Passage Reading - Fluency Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>● ● ●</td>
<td>1. Contains only irregular words that have been previously taught.</td>
</tr>
<tr>
<td>● ● ●</td>
<td>2. Selects majority of high frequency irregular words from list of commonly used words in English.</td>
</tr>
<tr>
<td>● ● ●</td>
<td>3. Introduces repeated readings after students read words in passages accurately. [NRP, pg. 3-28; 3-15]</td>
</tr>
</tbody>
</table>

Third Grade Passage Reading - Fluency Instruction — Discretionary

Tally the number of elements with each rating.  
1 ● 2 ○ 0 ○
## High Priority Items — Reading Comprehension Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>● ● ○</td>
<td>1. Teaches background information and/or activates prior knowledge. <em>(w)</em> [NRP, pg. 4-108]</td>
<td>The culminating activities in the Guided Comprehension and Reading Links Skill Trees provide students with the opportunity to reflect back on the story and share their thoughts with other students.</td>
</tr>
<tr>
<td>● ● ○</td>
<td>2. Uses text in which the main idea or comprehension unit is explicitly stated, clear, and in which the ideas follow a logical order. <em>(w)</em></td>
<td></td>
</tr>
<tr>
<td>● ○ ○</td>
<td>3. Uses known or taught vocabulary and passages at appropriate readability levels for learners. <em>(w)</em></td>
<td>The Reading Links and Guided Comprehension Skill Trees introduce key story vocabulary before exposure to reading passages.</td>
</tr>
<tr>
<td>● ○ ○</td>
<td>4. Continues skill or strategy instruction across several instructional sessions to illustrate the applicability and utility of the skill or strategy. <em>(w)</em> and <em>(st)</em></td>
<td>In the instruction phase, Guided Comprehension Skill Trees guide students through the process of using a variety of comprehension strategies. In the application phase, students are provided with multiple opportunities to practice critical comprehension strategies. In the assessment phase, students’ ability to use comprehension strategies is evaluated.</td>
</tr>
<tr>
<td>● ○ ○</td>
<td>5. Connects previously taught skills and strategies with new content and text. <em>(w)</em> and <em>(ss)</em> [NRP, pg. 4-107]</td>
<td>The new stories in Reading Links Skill Trees include review words from previously read texts.</td>
</tr>
<tr>
<td>● ○ ○</td>
<td>6. Cumulatively builds a repertoire of multiple strategies that are introduced, applied, and integrated with appropriate texts and for authentic purposes over the course of the year. <em>(w)</em> and <em>(ss)</em> [NRP, pg. 4-107]</td>
<td>In the instruction phase, Guided Comprehension Skill Trees guide students through the process of using a variety of comprehension strategies. In the application phase, students are provided with multiple opportunities to practice critical comprehension strategies. In the assessment phase, students’ ability to use comprehension strategies is evaluated. (This series of phases is repeated for each story in the Skill Tree. There are between 18-36 stories in each Skill Tree.)</td>
</tr>
</tbody>
</table>
## High Priority Items — Reading Comprehension Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
<th>Evidence</th>
<th>Week ______</th>
<th>Week ______</th>
</tr>
</thead>
<tbody>
<tr>
<td>● ● ●</td>
<td>7. Explicitly teaches comprehension strategies with the aid of carefully designed examples and practice (e.g., comprehension monitoring, mental imagery, question generation, question answering, story structure, summarization). (w) [NRP. pg. 4-100 to 4-113]</td>
<td>In the instruction phase, Guided Comprehension Skill Trees guide students through the process of using a variety of comprehension strategies, such as summarizing or question answering.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>In the application phase, students are provided with multiple opportunities to practice critical comprehension strategies.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>In the assessment phase, students’ ability to use comprehension strategies is evaluated.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Third Grade Reading Comprehension Instruction — High Priority
Tally the number of elements with each rating.  

5 ● 2 ○ 0 ○

## Discretionary Items — Reading Comprehension Instruction

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>● ● ●</td>
<td>1. Provides cooperative learning activities that parallel requirements of instruction.</td>
</tr>
<tr>
<td>❌ ○ ○</td>
<td>2. Begins with linguistic units appropriate to the learner; for example, uses pictures and a set of individual sentences before presenting paragraph or passage-level text to help students learn the concept of main idea.</td>
</tr>
<tr>
<td>❌ ○ ○</td>
<td>3. Uses familiar, simple syntactical structures and sentence types.</td>
</tr>
<tr>
<td>❌ ○ ○</td>
<td>4. Progresses to more complex structures in which main ideas are not explicit and passages are longer.</td>
</tr>
</tbody>
</table>

Third Grade Reading Comprehension Instruction — Discretionary
Tally the number of elements with each rating.  

3 ● 0 ○ 1 ○
THIRD GRADE

Summary of Third Grade Ratings

<table>
<thead>
<tr>
<th>High Priority Items</th>
<th>Discretionary Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decoding and Word Recognition Instruction (1)</td>
<td>Decoding and Word Recognition Instruction (8)</td>
</tr>
<tr>
<td>1 ● 0 ○ 1 ○</td>
<td>4 ● 2 ○ 2 ○</td>
</tr>
<tr>
<td>Vocabulary Instruction (4)</td>
<td>Vocabulary Instruction (3)</td>
</tr>
<tr>
<td>5 ● 0 ○ 0 ○</td>
<td>0 ● 2 ○ 2 ○</td>
</tr>
<tr>
<td>Passage Reading - Fluency Instruction (3)</td>
<td>Passage Reading - Fluency Instruction (3)</td>
</tr>
<tr>
<td>2 ● 1 ○ 0 ○</td>
<td>1 ● 2 ○ 0 ○</td>
</tr>
<tr>
<td>Reading Comprehension Instruction (7)</td>
<td>Reading Comprehension Instruction (4)</td>
</tr>
<tr>
<td>5 ● 2 ○ 0 ○</td>
<td>3 ● 0 ○ 1 ○</td>
</tr>
</tbody>
</table>

Third Grade High Priority Totals | Third Grade Discretionary Totals
13 ● 3 ○ 1 ○                      | 8 ● 6 ○ 4 ○

Third Grade Design Features

1. Aligns and coordinates the words used in phonics/word recognition activities with those used in fluency building.
2. Provides ample practice on high-priority skills.
3. Provides explicit and systematic instruction.
4. Includes systematic and cumulative review of high priority skills.
5. Demonstrates and builds relationships between fundamental skills leading to higher order skills.

SUMMARY

<table>
<thead>
<tr>
<th>Evidence of Sufficient Instructional Quality (specify elements)</th>
<th>Evidence of Insufficient Instructional Quality (specify elements)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phonemic Awareness Skill Trees</td>
<td>Vocabulary Builder Skill Trees</td>
</tr>
<tr>
<td>Pretest helps identify which specific phonemes students are struggling with.</td>
<td>Provides varied, meaningful, and interactive encounters with new words to facilitate spelling and word recognition improvement.</td>
</tr>
<tr>
<td>Provides developmentally appropriate, voice-based phoneme instruction.</td>
<td>Affords students unlimited remediation and practice opportunities while working at their own pace.</td>
</tr>
<tr>
<td>Uses a mastery-based learning approach proven to increase learning and retention.</td>
<td>Students can work with a generic word list, or one of many available basal lists.</td>
</tr>
</tbody>
</table>
### SUMMARY

<table>
<thead>
<tr>
<th>Evidence of Sufficient Instructional Quality (specify elements)</th>
<th>Evidence of Insufficient Instructional Quality (specify elements)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A customized list of phonemes can be created so that students only work with those phonemes teachers deem necessary.</td>
<td></td>
</tr>
<tr>
<td>Provides instruction, errorless practice, and timed evaluation activities.</td>
<td>Contains sequential integrated language activities.</td>
</tr>
<tr>
<td><strong>Phonics Sequences Skill Trees</strong></td>
<td><strong>Guided Comprehension Skill Trees</strong></td>
</tr>
<tr>
<td>Uses a systematic and explicit approach to teach students to form words phonetically, and then use those words in sentences and paragraphs.</td>
<td>Students are provided with multiple exposures key vocabulary and models of fluent reading.</td>
</tr>
<tr>
<td>Uses a mastery-based learning approach to ensure learning and retention.</td>
<td>Models Guided Reading strategy.</td>
</tr>
<tr>
<td></td>
<td>Includes five instructional levels: Pretest, Instruction, Practice, Application, and Posttest.</td>
</tr>
<tr>
<td></td>
<td>Grade-specific (Flesh-Kincaid readability) passages cover a wide range of topics and are written in a variety of text formats (narrative, informational, persuasive, and work).</td>
</tr>
</tbody>
</table>

### Additional Comments

The Orchard K-3 Reading Program (which consist of five series of programs: Phonemic Awareness, Phonics Sequences, Vocabulary Builders, Reading Links, and Guided Comprehension plus the Reading and Writing Strategies 1-3 Skill Tree) also includes state-specific assessment. Using pretest results, students are placed in the appropriate Skill Trees at the appropriate level.
## Overall Assessment of Instructional Sufficiency by Critical Element and Grade

**PROGRAM NAME:** Orchard K-3 Reading

<table>
<thead>
<tr>
<th>Critical Element</th>
<th>Kindergarten</th>
<th>First Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High Priority Items</td>
<td>Discretionary Items</td>
</tr>
<tr>
<td>Phonemic Awareness</td>
<td>4  1  0  0</td>
<td>3  0  1  0</td>
</tr>
<tr>
<td>Phonics</td>
<td>7  0  1  0</td>
<td>1  1  0  0</td>
</tr>
<tr>
<td>Fluency</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>1  2  0  0</td>
<td>3  0  0  0</td>
</tr>
<tr>
<td>Comprehension</td>
<td>2  1  1  0</td>
<td>0  2  1  0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Critical Element</th>
<th>Second Grade</th>
<th>Third Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High Priority Items</td>
<td>Discretionary Items</td>
</tr>
<tr>
<td>Phonemic Awareness</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Phonics</td>
<td>2  0  1  0</td>
<td>6  0  0  0</td>
</tr>
<tr>
<td>Fluency</td>
<td>3  0  0  0</td>
<td>2  1  0  0</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>2  0  0  0</td>
<td>4  1  5  0</td>
</tr>
<tr>
<td>Comprehension</td>
<td>4  2  0  0</td>
<td>6  0  0  0</td>
</tr>
</tbody>
</table>

Use the following criteria for each critical element:

- ● = Element meets/exceeds criterion; ○ = Element partially meets/exceeds criterion; ♦ = Element does not satisfy criterion.
Skills trace of Models and systematically reviews critical comprehension strategies

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Day or Lesson</strong></td>
<td>Before you Read activity</td>
<td>Let's Read the Story</td>
<td>Read with Me</td>
<td>You Can Read Too!</td>
<td>Questions</td>
</tr>
<tr>
<td><strong>Instruction (insert content taught)</strong></td>
<td>Teaches pre-reading strategies</td>
<td>Visual and Aural preview of story</td>
<td>Introduces and uses key Dolch and high frequency words in context</td>
<td>Models appropriate use of key vocabulary words in story context</td>
<td>Builds during-reading strategies</td>
</tr>
<tr>
<td><strong>Review Cycle (insert content taught)</strong></td>
<td>Ample opportunities to repeat words and sentences</td>
<td>Reviews highlighted key words in story context</td>
<td>Students can review the story an unlimited number of times</td>
<td>Students can review the story an unlimited number of times</td>
<td>Students can review the story an unlimited number of times</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Day or Lesson</strong></td>
<td>Finish the Sentence</td>
<td>Find the Answer</td>
<td>Fill in the Blank</td>
<td>Spell it Right</td>
<td>Stretch Your Mind</td>
</tr>
<tr>
<td><strong>Instruction (insert content taught)</strong></td>
<td>Models and allows practice in converting parts of questions into parts of answers</td>
<td>Models and allows practice in converting parts of questions into parts of answers</td>
<td>Models appropriate use of key vocabulary words in story context</td>
<td>Students extend sight word recognition to complete new sentences</td>
<td>Extends critical thinking skills</td>
</tr>
<tr>
<td><strong>Review Cycle (insert content taught)</strong></td>
<td>Students can review the story an unlimited number of times</td>
<td>Students can review the story an unlimited number of times</td>
<td>Reviews highlighted key words in story context</td>
<td>Reviews highlighted key words</td>
<td>Provides opportunity to engage in meanings of the text</td>
</tr>
</tbody>
</table>
Grade: K Program/List: Phonics Sequences A – 169 SB

Skills trace of Incorporates frequent and cumulative review of taught letter sounds to automaticity

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Day or Lesson</td>
<td>Letter introduction</td>
<td>Letter introduction review</td>
<td>Letter introduction</td>
<td>Letter introduction review</td>
<td>Identifying initial sounds – BCD</td>
</tr>
<tr>
<td>Review Cycle (insert content taught)</td>
<td>Errorless practice Sound-to-picture and sound-to-letter correspondence Identification on keyboard</td>
<td>Errorless practice Sound-to-picture and sound-to-letter correspondence Identification on keyboard</td>
<td>Errorless practice Sound-to-picture and sound-to-letter correspondence Identification on keyboard</td>
<td>Errorless practice Sound-to-picture and sound-to-letter correspondence Identification on keyboard</td>
<td>Visual and auditory repetition Help for review plus feedback Reinforcement for mastery</td>
</tr>
<tr>
<td>Day or Lesson</td>
<td>Identifying initial sounds – BCD</td>
<td>Identifying initial sounds – BCD</td>
<td>Identifying initial sounds – BCD</td>
<td>The Crane Game Reinforcing initial sounds BCD</td>
<td>Teacher-directed review Reassign activities in previous lessons to meet individual or class needs</td>
</tr>
<tr>
<td>Instruction (insert content taught)</td>
<td>Sound-to-picture correspondence 3 choices – choose correct sound letter association</td>
<td>Letter-to-picture identification 3 letter choices for one picture</td>
<td>Letter-to-picture identification 3 letter choices – other letter choices are interspersed with BCD Letter slides to complete words</td>
<td>Letter-to-word identification with picture cues and multiple answer choices</td>
<td></td>
</tr>
<tr>
<td>Review Cycle (insert content taught)</td>
<td>Visual and auditory repetition Help for review plus feedback Reinforcement for mastery</td>
<td>Letter slide – visual and auditory repetition of correct response Automatic repeat of content until mastery level is achieved</td>
<td>Positive reinforcement Repeats correct answers in context</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Note:** The content is a structured list of phonics sequences, including the day-to-day activities, instruction, and review cycles designed to reinforce letter sounds and automaticity.
Grade: _____ K _____ Program/List: _____ Vocabulary Builders K - 158CC Basal specific

Skills trace of _____ Introduces words of high utility with ample practice for automaticity

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Day or Lesson</td>
<td>Word Preview</td>
<td>Word Chaining</td>
<td>Spelling Theatre</td>
<td>Word Volcano</td>
<td>Word Crunch</td>
</tr>
<tr>
<td>Instruction (insert content taught)</td>
<td>Students are introduced to critical vocabulary words that are basal specific. They are shown how the words are spelled and used in a sentence.</td>
<td>Students begin practicing how the words are spelled through an activity that has them fill in missing letters of each word.</td>
<td>Students are provided repeated exposure to critical vocabulary words through oral and visual word recognition. Words are presented in isolation and used in sentences.</td>
<td>Students use oral and visual word recognition to become more familiar with specific vocabulary.</td>
<td>Students practice spelling critical vocabulary words by using words in a sentence.</td>
</tr>
<tr>
<td>Review Cycle (insert content taught)</td>
<td>Students review words through visual and oral repetition.</td>
<td>Students review the vocabulary words through cloze activity.</td>
<td>Students are evaluated on their knowledge of the vocabulary words.</td>
<td>Students are evaluated on their knowledge of the vocabulary words.</td>
<td>Students are evaluated on their knowledge of how the vocabulary words are spelled.</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Day or Lesson</td>
<td>Word Launch</td>
<td>Worksheets</td>
<td>Speed test</td>
<td>Worksheets</td>
<td>Spelling Test</td>
</tr>
<tr>
<td>Instruction (insert content taught)</td>
<td>Students use context clues to help them determine the missing vocabulary words.</td>
<td>Students use context clues to help them determine the missing vocabulary words.</td>
<td>Students are evaluated on their knowledge of the vocabulary words.</td>
<td>Students review the spelling of the vocabulary words.</td>
<td>Students review the spelling of the vocabulary words.</td>
</tr>
<tr>
<td>Review Cycle (insert content taught)</td>
<td>Students review the vocabulary words through cloze activity.</td>
<td>Students are evaluated on their knowledge of the vocabulary words.</td>
<td>Students review the spelling of the vocabulary words.</td>
<td>Students are evaluated on their knowledge of how the vocabulary words are spelled.</td>
<td>Students are evaluated on their knowledge of how the vocabulary words are spelled.</td>
</tr>
</tbody>
</table>
Grade: 1   Program/List: Guided Comprehension 1

Skills trace of Repeated and multiple exposures to critical vocabulary

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>Day or Lesson</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instruction (insert content taught)</td>
<td>Instruction Phase – Story 1</td>
<td>Instruction Phase – Story 2</td>
<td>Practice Phase (Story 1)</td>
<td>Practice Phase (Story 2)</td>
<td>Practice Phase Activities</td>
</tr>
<tr>
<td>Review Cycle (insert content taught)</td>
<td>Students are introduced to the concepts of inferential comprehension through a narrative or informative story.</td>
<td>Students work on inferential comprehension through a new narrative or informative story.</td>
<td>Students work on inferential comprehension through an informative text. Vocabulary words are highlighted throughout the story.</td>
<td>Students work on inferential comprehension through a new narrative or informative text.</td>
<td>Students work on activities that address inferential comprehension (multiple choice questions, vocabulary review).</td>
</tr>
</tbody>
</table>

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</thead>
<tbody>
<tr>
<td><strong>Day or Lesson</strong></td>
<td></td>
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</tr>
<tr>
<td>Instruction (insert content taught)</td>
<td>Application Phase (Story 1)</td>
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<td>Application Phase activities</td>
<td>Posttest</td>
</tr>
<tr>
<td>Review Cycle (insert content taught)</td>
<td>Students review vocabulary words that were addressed prior to reading the story.</td>
<td>Students use visual and auditory repetition to review vocabulary words.</td>
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<tr>
<td><strong>Instruction (insert content taught)</strong></td>
<td>Students are introduced to vocabulary words that include high utility words. Students are shown how the words are spelled.</td>
<td>Students begin practicing how the words are spelled through an activity that has them fill in missing letters of each word.</td>
<td>Students use oral and visual word recognition to become more familiar with specific vocabulary.</td>
<td>Students practice spelling critical vocabulary words.</td>
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</tr>
<tr>
<td><strong>Review Cycle (insert content taught)</strong></td>
<td>Students review words through visual and oral repetition.</td>
<td>Students are provided repeated exposure to high utility vocabulary words through oral and visual word recognition.</td>
<td>Students use visual and auditory repetition to help with review. Feedback provides reinforcement for mastery.</td>
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<tr>
<td><strong>Sequence, Instruction, Review</strong></td>
<td>6 - Lesson/Day</td>
<td>7 - Lesson/Day</td>
<td>8 - Lesson/Day</td>
<td>9 - Lesson/Day</td>
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<tr>
<td><strong>Instruction (insert content taught)</strong></td>
<td>Students use context clues to help them determine the missing vocabulary words.</td>
<td>Fill-in-the-Blank Word Scramble</td>
<td>Write-a-Sentence Word Search</td>
<td>Spelling Test</td>
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<tr>
<td><strong>Review Cycle (insert content taught)</strong></td>
<td>Students review the vocabulary words through cloze activity.</td>
<td>Students are evaluated on their knowledge of the vocabulary words.</td>
<td>Students review the spelling of the vocabulary words.</td>
<td>Students are evaluated on their knowledge of how the vocabulary words are spelled.</td>
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Grade: 2  Program/List: Guided Comprehension 2

Skills trace of Continues skill or strategy instruction across several instructional sessions to illustrate applicability/utility of strategy

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<td>Instruction Phase – Story 1</td>
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<td>Practice Phase (Story 1)</td>
<td>Practice Phase (Story 2)</td>
<td>Practice Phase Activities</td>
</tr>
<tr>
<td>Instruction (insert content taught)</td>
<td>Students are introduced to the concepts of literal comprehension through a narrative story.</td>
<td>Students work on literal comprehension through a new narrative story.</td>
<td>Students work on literal comprehension through an informative text.</td>
<td>Students work on literal comprehension through a new informative text.</td>
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</tr>
<tr>
<td>Review Cycle (insert content taught)</td>
<td>Students review parts of a narrative story through completion of a story map.</td>
<td>Students respond to what they have read by supporting their opinions with facts from the story.</td>
<td>Students use a graphic organizer to better understand the content of the passage.</td>
<td>Students respond to what they have read by supporting their opinions with facts from the story.</td>
<td>Students work on activities that address literal comprehension (multiple choice questions, story map, compare/contrast).</td>
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<tr>
<td>Instruction (insert content taught)</td>
<td>Students work on literal comprehension through a persuasive text.</td>
<td>Students work on literal comprehension through new content and text.</td>
<td>Students work on literal comprehension through new content and text.</td>
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<tr>
<td>Review Cycle (insert content taught)</td>
<td>Students review vocabulary words that were addressed before reading the story.</td>
<td>Students review vocabulary words that were addressed before reading the story.</td>
<td>Students review vocabulary words that were addressed before reading the story.</td>
<td>Students work on activities that address literal comprehension (multiple choice questions, story map, compare/contrast).</td>
<td>Students complete posttest to assess knowledge gained.</td>
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Grade: 2  Program/List: Vocabulary Builders 2

Skills trace of Repeated and multiple exposures to critical vocabulary

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<td>Instruction (insert content taught)</td>
<td>Students are introduced to grade specific vocabulary words and shown how they are used in a sentence. Students have the words spelled for them as well.</td>
<td>Students practice spelling vocabulary words through an activity where they fill in the missing letters of each word.</td>
<td>Students use oral and visual word recognition to become more familiar with specific vocabulary.</td>
<td>Students practice spelling vocabulary words by using words in a sentence.</td>
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<tr>
<td>Review Cycle (insert content taught)</td>
<td>Students review words through visual repetition.</td>
<td>Students review words through visual repetition.</td>
<td>Students are evaluated on their knowledge of the vocabulary words.</td>
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<td>Write-a-Sentence</td>
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<td>Instruction (insert content taught)</td>
<td>Students use context clues to help them determine the missing vocabulary words.</td>
<td>Students use context clues to help them determine the missing vocabulary words.</td>
<td>Students review the vocabulary words.</td>
<td>Students review the spelling of the vocabulary words.</td>
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<td>Students review the vocabulary words.</td>
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Grade: 3  Program/List: Guided Comprehension 3

Skills trace of Continues skill or strategy instruction across several instructional sessions to illustrate applicability/utility of strategy

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<tr>
<td>Instruction (insert content taught)</td>
<td>Students are introduced to concepts of inferential comprehension through appropriately leveled passage.</td>
<td>Students are presented with a story summary and a question before reading the story to better understand main idea and drawing conclusions.</td>
<td>Students work on inferential comprehension through various genres.</td>
<td>Students are presented with a story summary and a question before reading the story to better understand main idea and drawing conclusions.</td>
<td>Students work on activities that address inferential comprehension (predicting outcomes, multiple choice questions, graphic organizers).</td>
</tr>
<tr>
<td>Review Cycle (insert content taught)</td>
<td>Students review vocabulary words that were addressed before reading the story.</td>
<td>Students revisit the story summary and question after reading the story.</td>
<td>Students review vocabulary words that were addressed before reading the story.</td>
<td>Students revisit the story summary and question after reading the story.</td>
<td>Students work on activities that build a collection of strategies for inferential comprehension.</td>
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<tr>
<td>Instruction (insert content taught)</td>
<td>Students work on inferential comprehension through new content and text.</td>
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<td>Students review vocabulary words that were addressed before reading the story.</td>
<td>Students revisit the story summary and question after reading the story.</td>
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Skills trace of Repeated and multiple exposures to critical vocabulary

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<td>Students are introduced to grade specific vocabulary words and shown how they are used in a sentence. Students have the words spelled for them as well.</td>
<td>Students practice spelling vocabulary words through an activity where they fill in the missing letters of each word.</td>
<td>Students are provided repeated exposure to vocabulary words through oral and visual word recognition. Words are presented in isolation and used in a sentence.</td>
<td>Students use oral and visual word recognition to become more familiar with specific vocabulary.</td>
<td>Students practice spelling vocabulary words by using words in a sentence.</td>
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<td>Students review words through visual repetition.</td>
<td>Students review vocabulary words.</td>
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