

## Implementation of Keyboarding in Jeffco Public Schools

<p><b>Philosophy of Teaching Keyboarding</b></p> <p>Teachers at all grade levels must be involved in teaching keyboarding. After introduction of initial keyboarding skills, teachers must continue to monitor these skills in all computer activities throughout the year. Accuracy, not speed, should be emphasized in the early years. Proper posture should be addressed when teaching keyboarding with all grade levels.</p>
<p><b>Definition of Keyboarding</b></p> <p>Keyboarding is generally defined as the act of placing information into various types of equipment through use of a typewriter-like keyboard. Keyboarding produces copy, which appears on a display screen and is recorded and stored in memory for later access or output. Hard copy is not the immediate product of keyboarding. Keyboarding emphasizes input. Therefore, typewriting and keyboarding are not synonymous. However, students learn standard keys in both typewriting and keyboarding. (Bartholome, p. 6)</p>
<p><b>Rationale for the Teaching of Keyboarding Skills</b></p> <p>Students must be prepared to work within the technological framework of the 21<sup>st</sup> century.</p> <p>Researchers of elementary learning have found that children with keyboarding skills compose faster and are proud of their work; their documents have a neater appearance, motivation is better, and composition and editing are easier. Thus, language arts skills improve. Elimination of another subject to make room for keyboarding is not necessary. Keyboarding should be incorporated into most subjects. (Waner and McCrary, p.6)</p> <p>Teaching keyboarding at a developmentally appropriate age prevents the development of poor keyboarding habits.</p>
<p><b>History of Keyboarding in Jeffco</b></p> <p>In the 1980s Kathy Nutting chaired a committee on keyboarding which developed an elementary and middle school keyboarding curriculum, as part of the Logo guide. This was the last time there was district support for keyboarding. With the beginning of site-based management, some schools continued to teach the Logo keyboarding program, some schools instituted their own approach to keyboarding, and some schools dropped keyboarding entirely. Computer software took the place of teacher directed keyboarding.</p>
<p><b>Jeffco Standards</b></p> <p>English and Language Arts: K-4, Standard 3: As students experience writing, they will: Benchmark K: produce legible work, using technology when available, appropriate, and/or required.</p>
<p><b>Jeffco Student Technology Skills</b></p> <p>K-12 teachers, administrators and library information specialists developed the Jeffco Student Technology Skills document. <b>Keyboarding is an integral part of the Technology Skills document.</b> The complete document can be found at: <a href="http://204.98.1.2/isu/itech/documents/stsklscor.html">http://204.98.1.2/isu/itech/documents/stsklscor.html</a></p>
<p><b>Rationale for the Teaching of Keyboarding Skills First Semester, 4<sup>th</sup> Grade in Jeffco</b></p> <p>Compliance with the Strategic Plan: A.8: Promote advanced technology for students, teachers and staff to improve education and increase student learning.</p> <p>According to research, the formal introduction of keyboarding skills is developmentally appropriate from third through sixth grade. However, first semester 4<sup>th</sup> grade is the recommended time for the implementation of formal keyboarding instruction in Jeffco. This recommendation is based on the following:</p> <ul style="list-style-type: none"> <li>- Research which shows that it is a much greater challenge to keep third graders excited and focused on keyboarding than fourth graders.</li> <li>- The fact that children in grades four through six gradually exhibit greater smoothness and command of small muscle expression, which is reflected in better coordination in activities.</li> <li>- The necessary time/practice commitment needed to insure success.</li> </ul>
<p><b>Research Support</b></p> <p>In <i>Expanding Horizons in Business Education, Chapter 1</i>, Rowena Russell states that “It is essential that keyboarding instruction be included in the elementary school curriculum. Research confirms that students who have become proficient in touch keyboarding complete work faster and are more efficient in their use of the keyboard.”</p>

*(Research Support cont.)*

In *Introducing Early Keyboarding Skills* Patricia Nieman states “Keyboarding is complex and students cannot be expected to learn by themselves. Teacher interaction for instruction, monitoring, and motivation is crucial to the learning process. As long as the keyboard is the major source for computer input, students must be trained very early in proper keyboarding techniques.”

*Apple Classrooms of Tomorrow* (ACOT) research indicates children write more with keyboarding instructions.  
<http://www.apple.com/education/k12/leadership/effect1.html>

*A Comparison of Two Methods for Keyboarding in the Elementary School* by Lois Mayer Nichols indicates that, “Although *Type to Learn* students typed slightly faster (8.8 wpm to 7.2 wpm), it took 21 weeks to complete the lessons and their accuracy was not as high as that of the Diana King students (1.5 errors to 2.7 errors), whose sessions only took 12 weeks to complete.” Therefore, it seems reasonable to recommend the Diana King approach to keyboarding instruction as an efficient and effective method.

Sormunen and Wickersham found that “students can learn language arts while developing keyboarding skills at least as effectively as students who learn language arts using only the traditional paper, pencil, and/or oral methods.”

Research shows that keyboarding instruction will increase spelling and writing skills, which are a part of language arts. (Dennee, p.6)

## *Suggested Implementation*

Student Technology Skills	Suggested Strategies/Activities
<b>Grade Level: Kindergarten</b>	
<ul style="list-style-type: none"> <li>✓ Use special function keys including return, space bar and shift</li> <li>✓ Keyboard alphabetic and numeric entry on keyboard</li> </ul>	<p>Print out a paper keyboard for each student. As a letter or number is being taught/reviewed, have each student color in that letter/number. Then have them touch that key on the paper keyboard.</p> <p>Using a floor mat or floor painted keyboard, have students stand on the appropriate letters and numbers as each is called.</p> <p>Use a wall keyboard chart to locate the shift, return/enter, and space bar keys as you complete the following activities:</p> <p>Practice the letters by holding up a letter or number card and have the students locate and press that key. Identify the space bar and explain that the space bar is used to put a space between words. Have them press the space bar, with their right thumb, after each letter. Identify the return/enter key and explain that this will move the cursor to the next line. After several letters have them press the return/enter key.</p> <p>Prepare an index card for each student with his/her name printed on it. Have the students keyboard their name. Identify the shift key (on both sides) and explain that when held down while pressing a letter, it will make that letter a capitol. Have them press the space bar once between their name.</p>

<b>Grade Level: 1<sup>st</sup></b>	
<ul style="list-style-type: none"> <li>✓ Distinguish left and right hand side of the keyboard and use proper hands</li> <li>✓ Use special function keys including return, space bar, shift and command</li> <li>✓ Keyboard alphabetic and numeric entry using keyboard and numeric pad</li> </ul>	<p>Take a piece of yarn. Place it across each keyboard to separate the left side from the right. (between 5 and 6, T and Y, G and H, B and N) Explain that their left hand should stay on the left side and their right hand on the right side, never crossing over the yarn.</p> <p>On a wall keyboard chart, review the shift, return/enter, and space bar. Identify and explain that when using the command/control with other keys such as S (save) or P (print), it creates shortcuts.</p> <p>Play “Scrabble” using a paper keyboard. Call out letters; have students color the letter in with a crayon. Students raise their hand when they can create a word using the colored letters. Have students change to a different color and continue the activity.</p> <p>Have students keyboard spelling words.</p> <p>Have students keyboard frequently used words.</p>
<b>Grade Level: 2<sup>nd</sup> and 3<sup>rd</sup></b>	
<ul style="list-style-type: none"> <li>➤ Distinguish left and right hand side of the keyboard and use proper hands</li> <li>➤ Use special function keys</li> <li>➤ Keyboard alphabetic and numeric entry using keyboard and numeric pad</li> <li>✓ Use correct body position (introduced at 2<sup>nd</sup>)</li> </ul>	<p>All activities listed for 1<sup>st</sup> grade can be used with 2<sup>nd</sup> and 3<sup>rd</sup> graders.</p> <p>Keyboard different types of writing: stories, poetry, letters, invitations, thank-you notes.</p> <p>Keyboarding skills should be integrated with the curriculum and deal with authentic assignments whenever possible.</p> <p>Explain the guidelines for proper keyboarding posture and continue to monitor and correct.</p> <p><b>Posture Guidelines</b>  <b>Body-</b> Keep the back straight and lean slightly forward; face keyboard squarely; be a hand span distance (open hand with thumb barely touching the body) from the front of the keyboard; align center of body with the “J” key.  <b>Hands/Wrists-</b> Gently rest fingers on home row; fingers should be slightly curved; snap the keys--do not depress them slowly; keep the fingers close to the keys with the pad of the finger square on each key; learn to anchor on the HOME ROW; keep the wrists level; let only the fingers and the right thumb (can really use either thumb) touch the keyboard (not the wrists). The hands and wrists are “quiet” almost motionless.  <b>Arms-</b> Keep arms relaxed and elbows close, in next to their sides; keep lower arms at the same angle as the slope of the keyboard; keep shoulders relaxed.  <b>Feet-</b> Keep feet flat on the floor.  <b>Eyes-</b> Keep eyes moving from keyboard to monitor. As the student begins to use a manual or work they need to copy, stress the TRIANGLE METHOD: glance at the monitor, down at the keyboard, and then at the text being copied. Text that is being copied should usually be on the left side of the student.</p>
<b>Grade Level: 4<sup>th</sup></b>	
<ul style="list-style-type: none"> <li>✓ Use correct finger placement on alphabet keys</li> <li>➤ Use special function keys</li> <li>➤ Use correct body position</li> <li>➤ Keyboard alphabetic and numeric entry using keyboard and numeric pad</li> </ul>	<p><b>First semester is the recommended time to begin formal keyboarding skills.</b></p> <p><b>Recommended Resource</b>  <i>Keyboarding Skills</i> by Diana King:                      Educators Publishing Service, Inc.                      31 Smith Place                      Cambridge, MA 02138-1000                      1-800-225-5750</p> <p>Rationale: Alphabet based (sequentially introduced), addresses multiple intelligences, does not require specific software, and can be taught using Alpha Smarts or other portable.)</p> <p>◆ <b>Step-by-step directions for implementing keyboarding will be given during training.</b>  <b>Information to help implement keyboarding:</b></p>

<p>✓ Introduce and use proper keyboarding skills</p> <p>(4<sup>th</sup> Grade Continued)</p>	<ul style="list-style-type: none"> <li>◆ Teachers should have knowledge of basic keyboarding skills and training to learn how to implement this program.</li> <li>◆ This program can be organized with half of the class on computers and half using a paper keyboard model. It can also be taught using Alpha Smarts or a disconnected (non-working) keyboard, or paper keyboards (if there is not access to a real keyboard).</li> <li>◆ The program can be taught in as little as 4 consecutive 50-minute sessions. (example: Monday, Tuesday, Wednesday, Thursday.)</li> <li>◆ After receiving initial training students must continue guided practice time, using proper fingering and posture.</li> <li>◆ Frequent and easy words should be typed as whole words. Harder words can be looked at as individual letters.</li> <li>◆ Explain that speed will come with practice.</li> <li>◆ Reproduce a paper keyboard and poem to be used to practice at home or in the classroom.</li> <li>◆ Parental support for practice at home is a key to success. A letter should be sent home explaining that students should practice the poem 10 minutes a night. After a week or so, spelling words, vocabulary, etc. should be done at home.</li> </ul> <p><b>Review the following guidelines with students before beginning:</b></p> <ul style="list-style-type: none"> <li>◆ <b>Every student</b> should be doing the same thing at the same time, following the teachers directions for instruction.</li> <li>◆ <b>Review the guidelines for proper keyboarding posture (listed above in 2<sup>nd</sup>/ 3<sup>rd</sup> grade)</b></li> <li>◆ Remind students of the left and right side of the keyboard-hands never cross imaginary line.</li> <li>◆ <b>Students say and think the letter as they press the key.</b></li> <li>◆ Press keys with a downward motion toward palm of hand.</li> <li>◆ Demonstrate glancing down at the keyboard, up to monitor.</li> <li>◆ Try to think of fingers as “hovering” (resting lightly on the HOME ROW) over the keys.</li> <li>◆ Raise the fingers off of the HOME ROW just enough to make quick rhythmic strokes.</li> <li>◆ Explain that students always return to HOME ROW position.</li> <li>◆ Students should not go back and make corrections while learning the poem.</li> <li>◆ As the student begins to use a manual or work they need to copy, stress the TRIANGLE METHOD: glance at the monitor, down at the keyboard, and then at the text being copied. Text that is being copied should usually be on the left side of the student.</li> </ul> <p><b><u>Teachers should continue to provide practice and monitoring of keyboarding skills as they are integrated with the curriculum and deal with authentic assignments when possible.</u></b></p>
<p><b>Grade Level: 5<sup>th</sup>, 6<sup>th</sup></b></p>	
<ul style="list-style-type: none"> <li>✓ Keyboard at 12-15 wpm (15-20 wpm at 6<sup>th</sup>) with correct fingering positions on alphabet keys</li> <li>➤ Use special function keys</li> <li>➤ Use correct body position</li> <li>➤ Keyboard alphabetic and numeric entry using keyboard and numeric pad</li> <li>➤ Use proper keyboarding skills</li> </ul>	<p>Continue to <b>retain, refine and apply</b> proper fingering with emphasis on special function keys, increasing accuracy, while increasing wpm.</p> <p>Students must be consistently required to use proper fingering and posture, and should be positively corrected if necessary.</p> <p>Students must have continued guided practice time.</p> <p>Students should copy words from books or handouts while being timed.</p> <p>Respond to or create novels, poems, short stories, plays and factual/nonfiction materials.</p> <p>Create vocabulary lists.</p> <p>Keyboard spelling words.</p> <p>Keyboard research information.</p> <p>Keyboarding skills should be integrated with the curriculum and deal with authentic assignments whenever possible.</p>

Grade Level: 7 <sup>th</sup> , 8 <sup>th</sup>	
✓ Keyboard at 20-25 wpm on a three-minute timing with correct fingering positions on all keys using touch skills 80% of the time	<p>Continue to <b>retain, refine and apply</b> proper fingering with emphasis on special function keys, increasing accuracy, while increasing wpm.</p> <p>Students must be consistently required to use proper fingering and posture.</p> <p>Students must have continued guided practice time.</p> <p>Keyboard all appropriate assignments.</p>
Grade Level: 9 <sup>th</sup> -12 <sup>th</sup>	
➤ Keyboard at 25 wpm on a three-minute timing with correct fingering positions on all keys using touch skills 100% of the time	<p>Continue to <b>retain, refine and apply</b> proper fingering with emphasis on special function keys, increasing accuracy, while increasing wpm.</p> <p>Students must be consistently required to use proper fingering and posture.</p> <p>Keyboard all appropriate assignments.</p>

Suggested Supplemental Software
<p>The Instructional Team has reviewed various keyboarding software titles. Below are quality software titles that support our recommended philosophy of teaching keyboarding.</p> <p><b>Read, Write, Type</b> (Grades 1 and 2)  Rationale: Good connection between keyboard awareness, alphabet, phonics, and basic words while building visual memory skills. Provides opportunities to create sentences and short stories. (Click on the following link for a review of this software.)  <a href="http://www.childressoftware.com/www.childressoftware.com/Tango3.acgi\$/softsearch.taf?_function=detail&amp;Layout_0_u id1=35794&amp;_UserReference=5387E8F99911BE7BBBBB004E">http://www.childressoftware.com/www.childressoftware.com/Tango3.acgi\$/softsearch.taf?_function=detail&amp;Layout_0_u id1=35794&amp;_UserReference=5387E8F99911BE7BBBBB004E</a></p> <p><b>All the Right Type</b> (4<sup>th</sup> grade and up)  Rationale: Excellent management and assessment components, limited games component, and teacher driven-as opposed to program driven. (Click on the following link for a review of this software.)  <a href="http://www.childressoftware.com/www.childressoftware.com/Tango3.acgi\$/softsearch.taf?_function=detail&amp;Layout_0_u id1=32933&amp;_UserReference=5387E8F99911BE7BBBBB004E">http://www.childressoftware.com/www.childressoftware.com/Tango3.acgi\$/softsearch.taf?_function=detail&amp;Layout_0_u id1=32933&amp;_UserReference=5387E8F99911BE7BBBBB004E</a></p> <p><b>Type to Learn</b> (4<sup>th</sup> grade and up)  Rationale: Excellent management components. Teacher directs the level of learning for each student. Data is maintained by student name and may be transferred to next year's classes. Games are initiated only after student completes lessons successfully. (Click on the following link for a review of this software.)  <a href="http://www.childressoftware.com/www.childressoftware.com/Tango3.acgi\$/softsearch.taf?_function=detail&amp;Layout_0_u id1=36532&amp;_UserReference=5387E8F99911BE7BBBBB004E">http://www.childressoftware.com/www.childressoftware.com/Tango3.acgi\$/softsearch.taf?_function=detail&amp;Layout_0_u id1=36532&amp;_UserReference=5387E8F99911BE7BBBBB004E</a></p>
Health Issues
<p>The following sites are listed as references to health/environmental issues related to keyboarding:</p> <p><a href="http://www.secrest.com/mmg/cts/ctsintro.html">http://www.secrest.com/mmg/cts/ctsintro.html</a> -information on the anatomy, diagnosis, and treatment of carpal tunnel syndrome.</p> <p><a href="http://199.233.193.1/carpal/">http://199.233.193.1/carpal/</a> -exercises for the prevention of carpal tunnel syndrome.</p> <p><a href="http://www.pc.ibm.com/us/healthycomputing/index.html">http://www.pc.ibm.com/us/healthycomputing/index.html</a> -information on the ergonomics of computing.</p> <p><a href="http://www.newcastle.edu.au/department/ar/architecture/study-areas/PS-Computing/LUP204/LUP204P1.html#RTFToC13">http://www.newcastle.edu.au/department/ar/architecture/study-areas/PS-Computing/LUP204/LUP204P1.html#RTFToC13</a> -more information on the ergonomics of computing.</p>

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