Public Schools of North Carolina
State Board of Education
Department of Public Instruction

Revised Report to the North Carolina General Assembly

CURSIVE WRITING AND MULTIPLICATION TABLES
Joint Legislative Education Oversight Committee

SB257 (SL 2017-57, sec 7.23B)

STATE BOARD OF EDUCATION

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REPORT ON CURSIVE WRITING AND MULTIPLICATION TABLES

Introduction
SECTION 7.23B of SL2017-57 requires the State Board of Education and the Department of Public Instruction to report to the Joint Legislative Education Oversight Committee (JLEOC) by March 30, 2018, the measures taken by each local school administrative unit to implement the requirements regarding cursive writing and memorization of the multiplication tables pursuant to G.S. 115C-81(k) and (*l*) and to ensure that those requirements are met. 115C-81(k) asserts that the standard course of study shall include the requirement that the public schools provide instruction in cursive writing so that students create readable documents through legible cursive handwriting by the end of fifth grade. Section (l) states that the standard course of study shall include the requirement that students enrolled in public schools memorize multiplication tables to demonstrate competency in efficiently multiplying numbers.

This is the first report of this kind, and therefore provides baseline data on the measures taken by each school system to implement the requirements of G.S. 115C-81 (k) and (l). The original report was submitted to the JLEOC following approval at the March 2018 State Board of Education meeting. This report has been resubmitted, with specific information added regarding practices and implementation of the requirements by LEA. The additions are included in Appendices A-D.

Methodology
A short survey was launched from February 1 - February 21, 2018 to Chief Academic Officers in each Local Education Agency (LEA), to which 109 of the 115 LEAs participated. Districts responded to a series of questions related to the implementation of cursive writing and memorization of multiplication facts requirements. Additional data from the original survey as well as statements from those school systems that are not reflected in the survey data has been included with the revised report.

Organization
The report is organized by **Instructional Practices, Instructional Time, Materials and Resources**, and **Alignment with the *NC Standard Course of Study*** as before in the original report. However, additional more in-depth data from the survey that was originally administered and information from the follow-up process is included in the revised report. The additional detailed information is incorporated in Appendices A-D:

- Appendix A includes a breakdown by percentage of districts that incorporate at least one of the cursive writing instructional strategies that were included in the survey.
- Appendix B includes the survey response rate.
- Appendix C includes the responses to the survey by individual LEA.
- Appendix D includes responses that have been obtained since the original report from the LEAs who were unable to respond during the initial survey window or who provided written response that was not included in the survey data.

Instructional Practices in Cursive Writing
Respondents indicated which of the following practice(s) are used with third through fifth graders in respective districts to support cursive writing so that students create readable documents using legible cursive handwriting by the end of fifth grade.

Answer	3rd	4th	5th
Assignments for students to create readable documents using legible cursive handwriting	54.31%	50.46%	47.22%
In class direct instruction of cursive writing	20.53%	11.81%	9.89%
In class informal (indirect) instruction of cursive writing	22.87%	26.74%	28.14%
In class practice of cursive writing	22.87%	25.00%	22.81%
In class exposure to sample materials demonstrating cursive writing	20.53%	23.61%	25.86%
Homework practice of cursive writing	9.97%	9.72%	9.51%
Other	3.23%	3.13%	3.80%

Instructional Practices in Memorization of Multiplication Tables
Respondents indicated which of the following practice(s) are used with third graders in corresponding districts to support memorization of multiplication tables to demonstrate competency in efficiently multiplying numbers.

Answer	%
Requirement for students to memorize multiplication facts to 100	88.79%
In class direct instruction in memorization of multiplication facts	19.75%
In class informal (indirect) instruction in memorization of multiplication facts	18.11%
In class practice of memorization of multiplication facts	19.75%
In class exposure to tools supporting the memorization of multiplication facts	20.16%
Homework practice in memorization of multiplication facts	20.16%
Other	2.06%

Instructional Time

Respondents indicated how much time overall is allotted to the teaching and practicing of cursive writing along with the memorization of multiplication facts in their districts.

Instructional Time	Cursive Writing	Multiplication Facts
Daily Practice	6.54%	52.05%
Weekly Practice	41.12%	42.47%
Monthly Practice	14.02%	2.74%
Occasional Practice	38.32%	2.74%
Total	100%	100%

Curriculum Materials or Programs

NCDPI provides a variety of resources, to support teacher instruction of foundational skills, including cursive writing resources. Elementary resources are provided by grade level and include links to a variety of resources for foundational skills such as *Cursive Letters, Cursive Writing Sequence of Instruction* (Study.com), and *Teaching Cursive Writing* (New York City Department of Education). New resources and revisions to existing resources are being provided to support implementation of the 2017 standards.

Moreover, respondents cited resources such as, *Handwriting Without Tears, The Beginning Cursive Handbook, Writing A to Z,* and using *Zaner-Bloser* or *D'Nealian* methods and related materials for the teaching of cursive writing. LEAs reported that students are exposed to a variety of writing opportunities in regular instruction, some of which are done by hand, but many are done with the aid of technology devices. Respondents noted that student writing is often required to be in digital format because of expectations for formal communication in education and business in the 21st century. Some districts begin cursive writing instruction in second grade to help manage the expectations of Read to Achieve in third grade. Many districts have developed local resources, such as writing guides with teams of teachers and instructional support staff.

Furthermore, respondents cited a variety of resources for the teaching and practicing of multiplication facts in their districts, such as *enVision Math 2.0, Engage New York, Eureka Math, Flocabulary, Multiplication Rap, Math Investigations, Great Leaps, Reflex Math, Number Talks (*Sherry Parrish*);* and *Mastering the Basic Math Facts in Multiplication and Division (*Susan O'Connell & John SanGiovanni*).* LEAs reported the use of wraps, webtools, hands-on/group work in small stations, or software to support practice. Many districts stated that they support learning multiplication facts as part of conceptual learning in mathematics and foundational to the overall math program. LEAs reported they provide support through locally developed curriculum frameworks, noting that, with the standards, multiplication is embedded in the curriculum and not taught in isolation. Many districts support multiplication facts as part of a comprehensive math

program that includes procedural as well as conceptual math that prepares students for upper level math courses and STEM areas.

NCDPI provides a variety of resources, developed with teacher practitioners in partnership with NCDPI staff, to support students' understanding of multiplication and division. Examples include the *Lessons for Learning* series, and *Building Conceptual Understanding and Fluency through Games*, which include research-supported strategies to supplement teachers' current resources. New resources and revisions to existing resources are being provided to support implementation of the 2017 standards.

Alignment with the *NC Standard Course of Study*
Cursive Writing instruction is part of the Writing Standards and is found in W.6a for grades 3-5 of the *NC Standard Course of Study for English Language Arts* (2010). Under Production and Distribution of Writing 6a, students are required to, "create readable documents with legible handwriting (manuscript and cursive)" in third grade; "to create readable documents through legible handwriting (cursive) and/or word processing" in fourth grade; and to "create readable documents through legible handwriting (cursive) and word processing" in fifth grade.

The 2017 adoption of the *NC Standard Course of Study for English Language Arts* (to be implemented in NC public schools in the 2018-19 school year) includes Handwriting in the Foundational Skills Strand, which clearly articulates the progression of manuscript and cursive writing from Kindergarten through fifth grade:

> The foundational skills are directed toward fostering students' understanding and working knowledge of concepts of print, the alphabetic principle, and other basic conventions of the English writing system, including handwriting. These foundational skills are necessary and important components of an effective, comprehensive reading program designed to develop proficient readers with the capacity to comprehend texts across a range of types and disciplines. A systematic approach to handwriting instruction (manuscript and cursive) in the elementary grades is essential for students to communicate their ideas clearly. To achieve handwriting proficiency, students need to apply their handwriting skills to authentic writing activities *(Understanding the English Language Arts Standard Course of Study, Grade 5, 2017).*

Cursive writing skills are specifically addressed in grades 3, 4, and 5, reflecting the legislative requirement that students "create readable documents in legible cursive writing by the end of fifth grade."

Foundational Skills Strand in the *NC Standard Course of Study for English Language Arts* (2017): Handwriting

GRADE	NUMBER	STANDARD
3rd Grade	RF.3.2	Create readable documents with legible handwriting (manuscript and cursive).
4th Grade	RF.4.2	Create readable documents through legible handwriting (cursive).
5th Grade	RF.5.2	Create readable documents through legible handwriting (cursive).

Multiplication instruction is part of the current N*C Standard Course of Study for Mathematics* (2010). The overview for the third-grade standards provides a description of how students develop understanding of multiplication and division strategies:

> **Developing understanding of multiplication and division and strategies for multiplication and division within 100** – Students develop an understanding of the meanings of multiplication and division of whole numbers through activities and problems involving equal-sized groups, arrays, and area models; multiplication is finding an unknown product, and division is finding an unknown factor in these situations. For equal-sized group situations, division can require finding the unknown number of groups or the unknown group size. Students use properties of operations to calculate products of whole numbers, using increasingly sophisticated strategies based on these properties to solve multiplication and division problems involving single-digit factors. By comparing a variety of solution strategies, students learn the relationship between multiplication and division.

Memorizing all products of two one-digit numbers is required by the end of third grade. Under 3.OA.7 of the Operations and Algebraic Thinking strand in the *NC Standard Course of Study for Mathematics* (2010) students are required to**, "**Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers."

The 2017 adoption of the *NC Standard Course of Study for Mathematics* (to be implemented in NC public schools in the 2018-19 school year) includes memorization of multiplication facts and is specifically addressed in 3.OA.7*,* reflecting the legislative requirement that students enrolled in public schools memorize multiplication tables to demonstrate competency in efficiently multiplying numbers. In third grade, competency is developed through representing, interpreting, and solving one-step problems involving multiplication and division. The standard is explicitly addressed in third grade, and is not repeated, but it should be maintained and built upon in subsequent grades.

OPERATIONS AND ALGEBRAIC THINKING in the *NC Standard Course of Study for Mathematics* (2017)

Multiply and Divide within 100

GRADE	NUMBER	STANDARD
3	3.OA.7	Demonstrate fluency with multiplication and division with factors, quotients and divisors up to and including 10. ● Know from memory all products with factors up to and including 10. ● Illustrate and explain using the relationship between multiplication and division. ● Determine the unknown whole number in a multiplication or division equation relating three whole numbers.

Appendix A: Cursive Writing and Multiplication Instructional Practices (Percent of LEAs that indicated at least one of the instructional practices)

To report on the measures taken by each local school administrative unit to implement the requirements regarding cursive writing, respondents indicated which of the following instructional practice(s) are used with third, fourth, and fifth graders to support cursive writing in order to meet the benchmark of being able to "create readable documents using legible cursive handwriting by the end of fifth grade."

- Assignments for students to create readable documents using legible cursive handwriting
- In class direct instruction of cursive writing
- In class informal (indirect) instruction of cursive writing
- In class practice of cursive writing
- In class exposure to sample materials demonstrating cursive writing
- Homework practice of cursive writing

Although some LEAs were unable to confirm that *all* students within their districts are able to create readable documents using legible cursive handwriting by the end of fifth grade, the data revealed that ***most LEAs are providing instructional practices for the teaching of cursive writing***.

For the LEAs responding to the survey:
- **92.7% (101 out of 109**), reported one or more form of instructional practice in cursive writing during the 3rd, 4th, and/or 5th grades.
- **98.08% (102 out of 109)** indicated that they are providing instructional practices for the memorization of multiplication facts to 100.

The tables below provide a breakdown of instructional practices and response rates by grade level.

3rd Grade – LEAs that Reported Cursive Writing Instructional Practices

Yes	89	No	16
Percent Yes	84.76%	Percent No	15.24%
Responded to survey, but no response to this question	4	*LEAs Responding*	109

4th Grade – LEAs that Reported Cursive Writing Instructional Practices

Yes	80	No	22
Percent Yes	78.43%	Percent No	21.57%
Responded to survey, but no response to this question	7	*LEAs Responding*	109

5th Grade – LEAs that Reported Cursive Writing Instructional Practices

Yes	75	No	28
Percent Yes	72.82%	Percent No	27.18%
Responded to survey, but no response to this question	6	*LEAs Responding*	109

3rd Grade – LEAs that Reported Multiplication Instructional Practices

Yes	101	No	3
Percent Yes	97.12%	Percent No	2.88%
Responded to survey, but no response to this question	5	*LEAs Responding*	109

Appendix B: Survey Response Rate

These tables include the summary of the survey's basic questions, showing the number of selections for each choice, the total numbers, and the percent of LEAs who chose *yes, no,* or *other*. Data shown concerns district requirements for cursive writing in 3rd, 4th, and 5th grade; multiplication facts for 3rd grade; and the use of a program or curriculum for writing cursive and memorizing multiplication facts.

Out of 115 LEAs, there were four that did not respond to the survey. There were two that opened the survey but did not answer any of the questions. There was one LEA that was also unable to complete the survey electronically, but sent narrative responses to the questions (see Appendix D).

3rd Grade - Cursive Writing

Students in third grade in my district are required to create readable documents with legible cursive handwriting.			
Yes	59	No	29
Yes, Other	4	No, Other	4
Responded to the survey, but no response to the question	4	Other	10
		LEAs Responding	109

Total Yes	*63*	*Total No*	*33*
Responding Percent, Yes	60%	Responding Percent, No	31.43%
Responding Percent, Other			9.52%

4th Grade - Cursive Writing

Students in fourth grade in my district are required to create readable documents with legible cursive handwriting.			
Yes	51	No	33
Yes, Other	3	No, Other	2
Responded to the survey, but no response to the question	7	Other	13
		LEAs Responding	109

Total Yes	*54*	*Total No*	*35*
Responding Percent, Yes	52.94%	Responding Percent, No	31.31%
Responding Percent, Other			12.75%

5th Grade - Cursive Writing

Students in fifth grade in my district are required to create readable documents with legible cursive handwriting.			
Yes	48	No	38
Yes, Other	2	No, Other	1
Responded to the survey, but no response to the question	6	Other	14
		LEAs Responding	109

Total Yes	*50*	*Total No*	*39*
Responding Percent, Yes	48.54%	Responding Percent, No	37.66%
Responding Percent, Other			13.59%

Cursive Curriculum

Does your district use any specific curriculum or programs to teach cursive writing?			
Yes	23	No	82
Responded to survey, but no response to the question	4	LEAs Responding	109

Total Yes	*23*	*Total No*	*82*
Responding Percent, Yes	21.9%	Responding Percent, No	78.10%

3rd Grade - Multiplication Facts

Students in third grade in my district are required to memorize their multiplication facts to 100.			
Yes	93	No	5
Yes, Other	1	No, Other	0
Responded to the survey, but no response to the question	5	Other	5
		LEAs Responding	109

Total Yes	*93*	*Total No*	*5*
Responding Percent, Yes	89.42%	Responding Percent, No	4.81%
Responding Percent, Other			4.81%

Multiplication Facts Curriculum

Does your district use any specific curriculum or programs to teach multiplication facts?			
Yes	31	No	73
Responded to survey, but no response to the question	5	LEAs Responding	109

Total Yes	*31*	*Total No*	*74*
Responding Percent, Yes	29.81%	Responding Percent, No	70.19%

Appendix C: Responses to Survey by Local Education Agency (LEA)

This table includes answers to all responding LEAs on the survey's questions in which the possible selections were *yes, no,* or *other*.

Cursive Writing Results

- *Column 1 indicates the District Name*
- *Column 2 includes if one or more of the instructional practices for cursive writing were indicated;*
- *Columns 3,4,5, and 6 provide the yes, no, or other response to the question prompts for 3rd, 4th, and 5th grades: "Students in the ___ Grade in my district are required to create readable documents with legible cursive handwriting; other comments are provided.*
- *Columns 7 and 8: Indicate whether the district uses specific Curriculum or Programs and lists the programs.*

District	Cursive Instruction	3rd Readable Documents	4th Readable Documents	5th Readable Documents	Other	Curriculum or Program	List
Alamance-Burlington	Yes	Yes	Other	Other	The standards require cursive and word processing	Yes	Schools who have 3rd Grade Fundations have access to a cursive writing program
Alleghany County	Yes	Yes	Yes	Yes	N/A	Yes	D'Nealian cursive is taught using student workbooks and teacher materials
Anson County	Yes	Yes	No	Yes	N/A	No	
Ashe County	Yes	Yes	Yes	Yes	N/A	Yes	
Asheboro City	Yes	Yes	Yes	Yes	N/A	Yes	Handwriting without tears
Asheville City	Yes	Yes	No	No	N/A	Yes	Fundations
Avery County	Yes	No	No	No	N/A	No	
Beaufort County	Yes	Yes	Yes	Yes	N/A	Yes	
Bertie County	None selected	No	No	No	N/A	No	
Bladen County	Yes	Yes	Yes	Yes	N/A	Yes	D'nealian cursive font
Brunswick County	None selected	No	No Response	No Response	N/A	No Response	
Buncombe County	Yes	Yes	No	No	N/A	No	
Burke County	Yes	Yes	Yes	Yes	N/A	No	
Cabarrus County	Yes	Yes	Yes	Yes	N/A	No	
Caldwell County	Yes	Yes	Yes	Yes	N/A	Yes	D'Nealian
Camden County	Yes	Yes	No	Yes	N/A	No	
Carteret County	Yes	Yes	Yes	Yes	N/A	No	
Caswell County	Yes	Other	No,Other	Other	In third cursive instruction is expected but legible documents should follow this in subsequent years; Legible handwritten manuscript and cursive documents are expected	Yes	Fundations 3rd grade
Catawba County	Yes	Yes	Yes	Yes		No	

District	Cursive Instruction	3rd Readable Documents	4th Readable Documents	5th Readable Documents	Other	Curriculum or Program	List
Chapel Hill-Carrboro	Yes	Yes,Other	No	No	Students with IEP goals or 504 goals that require other methods of communication are provided different expectations	No	
Charlotte-Mecklenburg County	Yes	Yes,Other	Yes	Yes	Cursive instruction is introduced second semester in second grade and continued in third. Our district has a K-12 Focus on writing through content areas and completing text-dependent tasks that provide meaningful opportunities to utilize cursive writing to communicate ideas	Yes	Writing A to Z
Chatham County	Yes	Yes	Yes	Yes	N/A	No	
Clay County	Yes	Yes	Yes	Yes	N/A	Yes	Taught 1st semester Encore time/ intervention. iPad apps used to help teach cursive writing; Handwriting Without Tears
Cleveland County	Yes	No Response	No Response	No Response	N/A	No	
Clinton City	Yes	Yes	Other	Other	Varied	No	
Columbus County	Yes	Yes	Yes	Yes	N/A	No	
Columbus County	Yes	Yes	Yes	Yes	N/A	Yes	Handwriting without Tears
Craven County	Yes	No Response	No	No	N/A	No	
Cumberland County	Yes	No	No	No	N/A	Yes	LEA created cursive writing
Currituck County	None selected	No Response	No Response	No Response	N/A	No Response	
Dare County	Yes	No	No	No	N/A	No	
Davidson County	Yes	No	No	No	N/A	No	
Davie County	Yes	Other	Other	No	3rd -Some teachers may "require" certain assignments in cursive, but cursive instruction is more integrated (like with spelling words) within their work/documents than "required."; 4th - Some teachers may require cursive writing on some assignments. Cursive is often more of an option/opportunity that some students like to use, and it can also be used as an incentive (i.e. extra credit for writing in cursive)	No	
Duplin County	Yes	Yes	Yes	Yes	N/A	No	
Durham County	Yes	No	No	No	N/A	No	
Edenton/ Chowan	Yes	No	Other	Other	There is a greater push for all students to write in cursive; Teachers are requiring this more but are not consistent. By the end of fifth grade, the goal is for students to be proficient in cursive writing	No	
Edgecombe	None	No	No	No	N/A	No	

District	Cursive Instruction	3rd Readable Documents	4th Readable Documents	5th Readable Documents	Other	Curriculum or Program	List
County	selected						
Elizabeth City - Pasquotank County	Yes	Yes	Yes	Yes	N/A	No	
Elkin City	Yes	Yes	No	No	N/A	Yes	D'Nealian
Franklin County	Yes	Yes, Other	Yes, Other	Yes, Other	Schools are approaching this in different ways and at different times (in their own prescribed timelines) throughout the school year	No	Short writing prompts
Gaston County	Yes	Yes	Yes	Yes	N/A	No	
Gates County	Yes	Yes	Yes	Yes	N/A	No	
Graham County	Yes	Yes	Yes	Yes	N/A	No	
Granville County	Yes	No	No	No	N/A	No	
Greene County	Yes	No	No	No	N/A	No	
Halifax County	None selected	No	No	No	N/A	No	
Harnett County	Yes	Yes	Yes	Yes	N/A	No	
Haywood County	Yes	Yes	Yes, Other	Yes, Other	Cursive writing instruction begins in second grade with capital letters. Lower case cursive letters are learned in third grade. Writing assignments are required in 4th and 5th grades	Yes	Zaner-Bloser in the regular setting and Handwriting without Tears in some EC settings
Henderson County	Yes	Yes	Yes	Yes	N/A	No	
Hickory City	None selected	No	No Response	No Response	N/A	No Response	
Hoke County	Yes	Yes	Yes	Yes	N/A	No	
Hyde County	Yes	No	No	No	N/A	No	
Iredell-Statesville	Yes	Yes	Yes	No	N/A	No	
Jackson County	Yes	No, Other	No, Other	No, Other:	4th - It is modeled and encouraged, but not required from promotion; 5th- More emphasis is placed at this grade level, but it is still not required for promotion	No	
Johnston County	Yes	Yes	Yes	Yes	N/A	No	
Jones County	Yes	No	Yes	No	N/A	No	
Kannapolis City	Yes	No	No	No	N/A	No	
Lee County	Yes	Yes	Other	Other	Not Mandated	Yes	Zaner-Blosner
Lenoir County	Yes	Yes	Yes	Yes	N/A	Yes	The Beginning Cursive Handbook
Lexington City	Yes	No	No	No	N/A	No	
Lincoln County	Yes	No	No	No	N/A	No	
Macon County	Yes	No	Yes	No	N/A	No	
Martin County	Yes	Yes, Other	Yes, Other	Yes	Some teachers provide these opportunities more than others	No	Some use cursive writing worksheets for

District	Cursive Instruction	3rd Readable Documents	4th Readable Documents	5th Readable Documents	Other	Curriculum or Program	List
							practice and/or webtools available
McDowell County	Yes	Yes	Yes	No Response	N/A	No	
Mitchell County	Yes	Yes	Yes	Yes	N/A	No	
Montgomery County	Yes	No	Yes	Yes	N/A	No	
Moore County	Yes	No, Other	Other	No	It is taught but not consistently required	No	
Mooresville City	Yes	Yes	No	No	N/A	No	
Mount Airy City	Yes	No	No	No	N/A	No	Teachers review and practice cursive lettering and demonstrate how to write words and join letters; Teachers introduce cursive letters to students and students are required to learn to write their names in cursive
Nash-Rocky Mount	Yes	No, Other	No	No	N/A	No	
New Hanover County	Yes	Other	Other	Other	Highly Encouraged; We are revisiting district programs and expectations now that cursive handwriting is included in the NCSCOS. We have district expectations that will also be reviewed and shared with administrators, instructional coaches, and teachers	No	
Newton-Conover	Yes	No	Yes	No	N/A	Yes	Zaner-Bloser
Onslow County	Yes	Yes	Yes	Yes	N/A	No	
Orange County	Yes	Yes	Other	Other	Not for every assignment	No	
Pamlico County	Yes	Other	Yes	Yes	3rd - Creating readable letters/words	No	
Pender County	Yes	Yes	Yes	Yes	N/A	No	
Perquimans County	Yes	Other	Other	Other: Encouraging student, but not mandated.	3rd - Embedded in the writing curriculum as morning work. Not specific lessons; 4th and 5th- Encouraged, but not mandated	No	
Person County	Yes	Other	Other	Other	Teachers embed cursive writing when possible. We are a 1:1 district and use mostly Google Classroom for documents	No	
Pitt County	Yes	No	No	No	N/A	Yes	Handwriting without Tears
Polk County	Yes	Yes	Yes	Yes	N/A	No	
Randolph County	Yes	Yes	Yes	Yes	N/A	Yes	Complete at least one major cursive handwriting assignment

District	Cursive Instruction	3rd Readable Documents	4th Readable Documents	5th Readable Documents	Other	Curriculum or Program	List
							each quarter; Handwriting Without Tears
Richmond County	Yes	Yes	Yes	Yes	N/A	No	
Roanoke Rapids	Yes	No	No	No	N/A	No	
Robeson County	Yes	Yes	Yes	Yes	N/A	No	
Rockingham County	Yes	No	No	No	N/A	No	
Rowan-Salisbury	None selected	Other	No Response	Other	N/A	No	
Rutherford County	Yes	No	No	No	N/A	No	
Sampson County	Yes	Yes	Yes	Yes	N/A	No	We begin these practices in the Spring of 2nd grade.
Scotland County	Yes	Yes	Yes	Yes	N/A	No	
Stanly County	Yes	Yes	Yes	Yes	N/A	No	
Stokes County	Yes	Yes	Yes	Yes	N/A	No	
Surry County	Yes	No, Other	No	No	3rd - We do not require a document. We require a cursive handwriting sample of the alphabet and student's signature	No	Most instruction on cursive writing occurs in 2nd grade
Swain County	Yes	No	No	No	N/A	No	Station Activities in Cursive Writing Skills
Thomasville City	Yes	Other	Other	Other	Yes; need to work on consistency	No	
Transylvania County	Yes	Yes	Yes	Yes	N/A	No	
Tyrrell County	Yes	Yes	Yes	Yes	N/A	No	
Union County	Yes	Yes	Yes	Other	We follow the Back to the Basics law and require schools to teach both	Yes	Zaner-Bloser; Handwriting without Tears
Vance County	Yes	Yes	Yes	Yes	N/A	No	
Wake County	Yes	Yes	No	No	N/A	No	
Warren County	Yes	Yes	Yes	Yes	N/A	No	
Washington County	Yes	No	Yes	No	N/A	No	Recipe for Reading, Stations to practice cursive writing
Watauga County	Yes	Yes	Yes	Yes	N/A	No	
Wayne County	Yes	Yes	No	No	N/A	No	
Weldon City	Yes	No	No	No	N/A	No	
Whiteville City	Yes	Yes	Yes	Yes	N/A	Yes	
Wilkes County	Yes	Other	Other	Other	3rd - 3rd grade teachers in Wilkes are teaching cursive handwriting but may not be requiring students to produce a readable document with legible cursive writing; 4th and 5th - I believe most are but I	No	

District	Cursive Instruction	3rd Readable Documents	4th Readable Documents	5th Readable Documents	Other	Curriculum or Program	List
					cannot say that 100% of our 4th grade teachers required assignments in cursive		
Wilson County Schools	Yes	Yes	No Response	Yes	N/A	No	
Winston-Salem/ Forsyth	Yes	Other	Other	Other	Students can use cursive or manuscript to create documents.	Yes	Zaner-Bloser (McGraw-Hill)
Yadkin County	Yes	Yes	Yes	Yes	N/A	No	Students are exposed to a variety of writing opportunities. Some are done by hand but many are done with the aid of technology devices
Yancey County	None selected	No Response	No Response	No Response	N/A	No Response	

Multiplication Results

- *Column 1 indicates the District Name*
- *Columns 2 and 3 provide the response to the question prompt, "Students in third grade in my district are required to memorize their multiplication facts to 100;" other comments are provided.*
- *Columns 4 and 5 indicate whether the district uses specific Curriculum or Programs and lists the programs.*

District	Required to memorize multiplication facts to 100	Other	Curriculum or Programs	List
Alamance-Burlington	Yes	N/A	No	
Alleghany County	Yes	N/A	Yes	
Anson County	Yes	N/A	No	
Ashe County	Yes	N/A	No	
Asheboro City	Yes	N/A	No	
Asheville City	Other	We are working hard to ensure all students memorize the multiplication tables but we do not have a district benchmark/assessment to measure proficiency	Yes	Math Investigations
Avery County	No Response	N/A	No Response	
Beaufort County	Yes	N/A	No	
Bertie County	Yes	N/A	No	
Bladen County	Yes	N/A	Yes	Eureka Math, Flocabulary, Multiplication Rap, Zearn
Brunswick County	No Response	N/A	No Response	
Buncombe County	Yes	N/A	Yes,	Investigations
Burke County	Yes	N/A	No	
Cabarrus County	Yes	N/A	No	
Caldwell County	Yes	N/A	No	
Camden County	Yes	N/A	No	
Carteret County	Yes	N/A	Yes	
Caswell County	Yes	N/A	Yes,	Engage NY
Catawba County	Yes	N/A	Yes,	Envisions Math
Chapel Hill-Carrboro	Yes	N/A	No	
Charlotte-Mecklenburg County	Yes	N/A	Yes,	enVision2.0 and district created Curriculum Guide supports
Chatham County	Yes	N/A	Yes,	ixl, Reflex math,
Clay County	Yes	N/A	Yes	Reflex Math, MobyMax, GoMath, Great Leaps
Cleveland County	Yes	N/A	No	
Clinton City	Yes	N/A	No	
Columbus County	Yes	N/A	No	
Columbus County	Yes	N/A	No	
Craven County	Yes	N/A	No	
Cumberland County	No	N/A	No	
Currituck County	No Response	N/A	No Response	
Dare County	Yes	N/A	No	
Davidson County	No	N/A	No	
Davie County	Yes	N/A	Yes	Software to support practice: Xtra Math, IXL Math, other apps/games
Duplin County	Yes	N/A	Yes	GoMath
Durham County	Other	Through standard 3. OA.C.7	No	

District	Required to memorize multiplication facts to 100	Other	Curriculum or Programs	List
Edenton/Chowan	Yes	N/A	No	Moby Max is used to practice memorization of the tables
Edgecombe County	Yes	N/A	No	
Elizabeth City - Pasquotank County	Yes	N/A	No	
Elkin City	Yes	N/A	No	
Franklin County	Yes	N/A	Yes,	reflex math & wrap-ups
Gaston County	Yes	N/A	Yes	
Gates County	Yes	N/A	Yes,	Go Math
Graham County	Yes	N/A	No	Supplement Go Math Curriculum
Granville County	Yes	N/A	No	
Greene County	Yes	N/A	No	
Halifax County	Yes	N/A	No	
Harnett County	Yes	N/A	Yes	
Haywood County	Yes, Other	We continue to work on multiplication through 5th grade with regular assessments for students	No	Tests on multiplication facts
Henderson County	Yes	N/A	No	
Hickory City	Yes	N/A	No	
Hoke County	Yes	N/A	No	
Hyde County	Yes	N/A	No	
Iredell-Statesville	Yes	N/A	No	
Jackson County	Yes	N/A	No	
Johnston County	Yes	N/A	No	
Jones County	No	N/A	No	
Kannapolis City	No	N/A	No	
Lee County	Yes	N/A	No	
Lenoir County	Yes	N/A	Yes	Accelerated Math, Engaged NY
Lexington City	Yes	N/A	No	
Lincoln County	Yes	N/A	No	
Macon County	Yes	N/A	Yes	
Martin County	Yes	N/A	Yes	Some utilize wraps, webtools, tables, hand-on/group work in small stations
McDowell County	Yes	N/A	No	
Mitchell County	Yes	N/A	No	
Montgomery County	No	N/A	Yes	Georgia Units
Moore County	Yes	N/A	No	
Mooresville City	Yes	N/A	No	
Mount Airy City	Other	Some teachers require memorization, but all teachers practice it	No	
Nash-Rocky Mount	Yes	N/A	Yes	The teaching is embedded in the core instructional resources provided, some schools use Moby Max and other online programs that are purchased at the district level
New Hanover County	Yes	N/A	No	
Newton-Conover	Yes	N/A	No	
Onslow County	Yes	N/A	No	
Orange County	Yes	N/A	No	
Pamlico County	Yes	N/A	No	

District	Required to memorize multiplication facts to 100	Other	Curriculum or Programs	List
Pender County	Yes	N/A	Yes,	Engage NY and Zearn
Perquimans County	Yes	N/A	Yes	Embedded in "Investigations Math program
Person County	Yes	N/A	No	
Pitt County	Yes	N/A	No	
Polk County	Yes	N/A	Yes	My Math textbooks and online resources
Randolph County	Yes	N/A	Yes	Investigations in Number, Data and Space; Number Talks by Sherry Parrish; Mastering the Basic Math Facts in Multiplication and Division by Susan O'Connell & John SanGiovanni
Richmond County	Yes	N/A	No	Models and Arrays
Roanoke Rapids	Yes	N/A	No	
Robeson County	Yes	N/A	No	
Rockingham County	Yes	N/A	No	
Rowan-Salisbury	Other	Based on students' personal academic goals	No	Digital Resources
Rutherford County	Yes	N/A	Yes	Eureka Math strategies
Sampson County	Yes	N/A	No	
Scotland County	Yes	N/A	Yes	Engage New York
Stanly County	Yes	N/A	No	
Stokes County	Yes	N/A	No	
Surry County	Other	Encouraged, but not required. Teachers work with students to learn the 40 basic multiplication facts	No	Teachers work with students to make connections to other mathematical topics to help support learning of multiplication facts
Swain County	No Response	N/A	No Response	
Thomasville City	Yes	N/A	No	
Transylvania County	Yes	N/A	Yes	Go Math
Tyrrell County	Yes	N/A	No	
Union County	Yes	We follow the Back to the Basics law and require schools to teach both	No	
Vance County	Yes	N/A	Yes	Some schools use math facts in a flash and all schools use iReady for math
Wake County	Yes	N/A	Yes	CMAPP
Warren County	Yes	N/A	No	
Washington County	Yes	N/A	Yes	Go Math, Imagine Math
Watauga County	Yes	N/A	No	
Wayne County	Yes	N/A	No	
Weldon City	Yes	N/A	No	
Whiteville City	Yes	N/A	No	
Wilkes County	Yes	N/A	No	
Wilson County Schools	Yes	N/A	No	
Winston-Salem/F	Yes	N/A	No	
Yadkin County	Yes	N/A	No	
Yancey County	No Response	N/A	No Response	

Appendix D: Additional Responses

This appendix includes responses that have been obtained since the original report from the LEAs who were unable to respond during the initial survey window or who provided written response that were not included in the survey data.

District	Statement	Notes
Alexander		Did not respond during initial survey window
Cherokee		Did not respond during initial survey window
Currituck County		Opened Survey - No Response to any question
Guilford County	It looks like my responses were not submitted. In GCS, cursive is introduced by practicing in 3rd grade. Initial practice occurs during direct instruction. Memorization of multiplication facts take place in third grade. Creation of legible documents is more common through word processing than cursive writing in grades 3-5 but all students are exposed to cursive practice.	Submitted this response via email during initial survey window; Not included in survey data
Hertford		Did not respond during initial survey window
Madison		Did not respond during initial survey window
Yancey County	Cursive writing is taught as required by the Standard Course of Study. Cursive writing is incorporated in classroom lessons in Grades 3-5 so students can create legible documents. The primary focus for multiplication facts is in Grade 3.	Submitted response via email; Not included in survey data