

**A Diagnostic-Remedial Approach to
Teaching Language and Math
Literacy Skills to ABE Basic and
Beginning Literacy Students in a
Tutorial Setting**

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Adults have a self-concept of being responsible for their own decisions, for their own lives. Once they have arrived at that self-concept they develop a deep psychological need to be seen by others and treated by others as being capable of self-direction. They resent and resist situations in which they feel others are imposing their wills on them. This presents a serious problem in adult education: the minute adults walk into an activity labeled "education," "training," or anything synonymous, they hark back to their conditioning in their previous school experience, put on their dunce hats of dependency, fold their arms, sit back, and say "teach me." This assumption of required dependency and the facilitator's subsequent treatment of adults (sic) students as children creates a conflict within them between their intellectual model—learner equals dependent—and the deeper, perhaps subconscious, psychological need to be self-directing. And the typical method of dealing with psychological conflict is to try to flee from the situation causing it—which probably accounts in part for the high dropout rate in much voluntary adult education. As adult educators become aware of this problem, they make efforts to create learning experiences in which adults are helped to make the transition from dependent to self-directing learners.

(Knowles, Holton, and Swanson, 1998, p.65)

Background

I believe a diagnostic-remedial teaching approach could work for any teaching environment, teacher, and learner. I could be wrong. I believe the approach could be used with any Adult Education student. Not that I think it should. I believe the approach works best with self-directed learners (Knowles, Holton, and Swanson, 1998, p.137), including those at lower skill levels. Probably other, even better approaches exist for transitioning from dependency to self-direction. I suspect the dependent adult students would flee an approach as described here. I believe I successfully used the approach during 2004-5 with students originally testing below a Low Intermediate level as measured on the Tests of Adult Basic Education (TABE). I describe my experiences in this mini-grant report.

I learned such an approach as an instructor for students with learning differences at Landmark College. I relied on the approach in my work as Literacy Liaison for Sullivan County Adult Education during 2004-5. I thank Carolyn Olivier, a founding administrator of Landmark College and co-author of the book *Learning to Learn* (Olivier and Bowler, 1996), for all her help teaching the approach to me so I could share it with you.

New Hampshire Adult Basic Education is not Landmark College. Yet students with learning differences are everywhere. Effective approaches are modifiable. I'm hopeful you'll let me know if the approach is useful to you. I think our students deserve that mutual understanding.

Process of, Rationale for, and Perspective behind the Approach

Using a diagnostic-remedial approach, a tutor diagnoses learning needs by identifying errors and categorizing them using a checklist of sequenced skills. I created and used two checklists for use in 1-1 tutorials with ABE Basic and Beginning Literacy learners; the first pages of each checklist are included in this report (pp.30-1). Skill needs suggested by types of errors are remediated through learning activities. Copies of activities I created for use with the checklists, as mentioned in this mini-grant report, are also included (pp.32-58). In implementing the approach, my goal was to move students into Low Intermediate levels of literacy (4.0 or above), as measured by scores on the Test of Adult Basic Education (TABE).

In contrast to a medical model, "dis-ease" from the perspective of a diagnostic-remedial approach is a learner not-fully-at-ease as a literate person. "Dis-ease" manifests as a learner's non-use, non-valuing, or lack of

recognition of existing literacy skills while learning new skills. Effective remedy is learner empowerment. Empowerment comes from re-mediation of literacy skill, a reciprocated mediation (Knowles, Holton, and Swanson, 1998, p.128) among learner, tutor, and literacy events. Empowerment is only limited by the imaginations and creativity of learner and tutor.

Introduction to Four Case Examples

Each case introduced in this section represents a process of application of the diagnostic-remedial approach, applications varying by learners' unique goals, needs and degrees of self-directedness. More thorough descriptions of processes in each case follow in a later section.

Twenty-nine-year-old "April" has a diagnosed specific learning disability and a high school diploma. Her expressed goals are to retain employment and assist with her daughter's schoolwork. April's pre-entry Form 7, Level E TABE scores were 5.8 in Reading, 2.7 in Math Computation, 4.1 in Applied Math (3.2 combined Math), 3.7 in Language, and 4.2 in Spelling, placing her at the Beginning Basic Education level and below Low Intermediate level in math computation and language. After a couple of sessions of use by me as April's 1-1 remedial tutor of the "Structured

Language Checklist" (p.30), April chose to continue program work on language and math skills with a volunteer tutor.

After three months and approximately 20 total contact hours, April post-entry tested on Form 8, Level E of the TABE with scores of 6.9+ in Reading, 3.7 in Math Computation, 4.6 in Applied Math (4.1 combined Math), 6 in Language, and 6.9+ in Spelling. April stopped tutoring in the spring due to conflicts with her daughter's softball schedule, expressing the hopeful expectation to return to the program in the fall.

Twenty-eight-year-old "Janus" seems to have an undiagnosed specific learning disability; he dropped out of high school and now wants a GED for job advancement and personal satisfaction. Janus initially resisted pre-entry TABE testing during his first month in the program, exhibiting lack of self-confidence. After briefly explaining "dyslexia" (my process for this is described in more detail later) and its possible relevance to Janus, I used parts of the "Structured Language Checklist" (p.30) as his 1-1 remedial tutor for a month in weekly sessions averaging more than two hours each in duration. Subsequently, Janus pleasantly surprised himself by scoring 6.9 in Reading, 6.2 in combined Math, 4.2 in Language, and 4.7 in Spelling on his

initial administration of Form 8, Level E of the TABE, placing him above or within Intermediate range in all areas.

Thirty-five-year-old "Gus" attended high school and self-described as having "severe learning disabilities" and being "mentally challenged" and uses a hearing aid. He wants a GED. He scored 2.1 on pre-entry administration of Form 7, Level L of the TABE. During weekly one-and-a-half hour sessions as Gus' remedial tutor, I started at the very beginning of the "Basic Literacy Checklist" (p.31) and systematically proceeded through it with learning activities I created, most of which are included in this report. After four months and just over 20 total contact hours, Gus post-entry tested at 2.9+ on the same TABE, moving him closer to an Intermediate level in reading.

Twenty-two-year-old "May" was in a resource room program and completed the 11th grade. She wants a GED. On Form 8, Level E of the TABE she had pre-entry scores of 4 in Reading, 2.3 in combined Math, 3.2 in Language, and 1.6 in Spelling, placing her below Intermediate level in each area except reading. As 1-1 remedial tutor, I used selected, diagnostically relevant parts of the "Basic Literacy Checklist" (p.31) for eight hours total over two months with May. While she hasn't yet felt ready to post-entry

test, May recently reported that she's begun reading stories to her daughter.

These case examples illustrate how a diagnostic-remedial approach is adaptable to different students. "April" felt she only needed a brief overview of learning difference and next-to-no remediation before she was ready to work with a volunteer tutor. She exudes personal autonomy and appears to "self-teach" (Knowles, Holton, and Swanson, 1998, pp.135-6).

Janus seemingly felt the need for a period of structured remedial language work before even attempting pre-entry TABE testing. I believe he may have otherwise fled. After some remediation, he achieved test scores revealing to him his existing skills and abilities. Now Janus also exudes personal autonomy and appears to self-teach.

Gus trusted my use of the "Basic Literacy Checklist" as a diagnostic tool suggesting needs for remedial learning activities. He now spontaneously helps create session activities not included on the Checklist. For example, as a writing activity, Gus regularly dictates to the tutor the latest plot twists of a favorite soap opera; the tutor word-processes and prints the manuscript for Gus to read aloud. While Gus shows increasing signs of

personal autonomy as a self-directed learner, he doesn't yet seem to self-teach.

May also has trusted my use of the "Basic Literacy Checklist." She also shows increasing signs of personal autonomy, but doesn't seem to self-teach.

Explanation of Diagnostic-Remedial Principles

The following list of principles is adapted from Carolyn Olivier (Olivier and Bowler, 1996), as are my explanations of the principles.

- 1.) Make no assumptions
- 2.) Start at "point zero"
- 3.) Hold students accountable
- 4.) Be multi-sensory
- 5.) Explain structure, patterns, and rules
- 6.) Treat mistakes positively
- 7.) Pace instruction
- 8.) Micro-unit
- 9.) Use students' interests
- 10.) Teach to automatization
- 11.) Spiral back
- 12.) Recognize successes
- 13.) Model learning behavior

To make no assumptions means respecting each student's unique skills and needs. Similar students may not benefit from the same process of application of diagnostic-remedial principles. When uncertain, ask the

student and actively listen. Shape, model for, and manage self-directed students by empowering them to achieve their expressed goals.

To start at "point zero" means to begin at the beginning. First things come first. Instruct at the weakest, earliest sub-skill in the chain of skills required for success, moving on to each sub-skill sequentially. Starting at point zero requires fine analysis and detailed planning by a teacher, but also provides a sense of relief to the learner that "nothing's been missed."

To hold students accountable means avoiding overestimating weaknesses and underestimating strengths. Each student is stronger in some areas than in others. Expect and require use of mastered skills while learning new ones. Require students to work diligently to master new skills necessary for literacy. Holding students accountable is conducive to group tutorials, as some students independently practice stronger skills while others work with the tutor learning a new skill.

To be multi-sensory means realizing the benefits of and planning for opportunities to see, hear, say, and do while acquiring skills. Such direct experiences reinforce underlying key concepts, critical to learning for students with learning differences. Remember: information is receptive and expressive, written and oral—students should be alternately hearing,

reading, saying, writing, showing, and doing. Being multi-sensory requires teacher responsiveness to learning style differences, as well as learner acceptance and valuing of "hands-on," experiential learning.

To explain structure, patterns, and rules results in students gradually taking personally meaningful and practical control of learning, necessary for ultimately successful application of recently acquired knowledge to new situations for students with learning differences. Explaining structures, patterns, and rules involves teacher knowledge of their substance and effective teaching procedures, but pays off in even greater learner success and satisfaction.

To treat mistakes positively means helping learners view errors as a "good thing." Making errors isn't "being stupid"; rather, errors show what can be "made right." Errors are feedback indicators, necessary for self-correction. Treating mistakes positively depends on personal buying-into a diagnostic-remedial perspective by the instructor and results in learners reshaping their too often negative self-images into more positive ones.

To pace instruction means to teach neither too rapidly nor too slowly for any particular student on any given day. Pacing instruction requires attunement to each student's alertness and tiredness, hunger or thirst,

background knowledge and life experiences, processing style and memorization tendencies, confidence and patience, stamina and endurance.

Remember: adult education is not a race or a zero-sum game.

To micro-unit means to break complex wholes into constituent parts and teaching parts separately when appropriate. Take one step at a time. Micro-uniting makes plain the steps of literacy processes and sequences of sub-skills, making learning more effective and efficient, and creating more capable, and confident, teachers and learners.

To use students' interests means to capitalize on the intrinsic motivation inherent in students' unique experiences and goals. Everyone's different. We all have important things to share. Using students' interests involves eliciting student examples, letting them pick or design learning activities, and keeping instruction realistic, practical, and authentic.

To teach to automatization means to teach until fundamental component sub-skills are automatic so the learner can effortlessly use a larger skill. Practice makes perfect. Teaching to automatization may seem laborious to both learner and teacher, with a great temptation to "cut corners." Remember: automatization of a particular sequence of sub-skills is often necessary for masterful use of a larger skill.

To spiral back means to review sub-skills introduced earlier, checking on levels of mastery acquired and reviewing and re-instructing when needed. Spiraling back is especially important when teaching a set of sub-skills required for completion of a larger skill. Sub-skills introduced early are forgotten; connections to other sub-skills may now need explaining. Constantly revisit skills and needs.

To recognize student successes means building legitimate self-esteem by crediting "jobs well done." Students come to us with many strengths and abilities already: congratulations are due. As a student masters each new skill, congratulations are due. Such recognition builds self-confidence, mutual respect and admiration, and motivation.

To model learning behavior means to "practice what you preach." Teachers should demonstrate the skills they want students to learn; otherwise, students will question the skills' importance and the teacher's credibility. Be enthusiastic; be inquisitive; be metacognitive; be willing to make and learn from mistakes; be what you want the student to be.

Description of Processes of Application of Principles to Case Examples

I typically rely most on these sources of diagnostic information when starting work with Beginning Literacy and Beginning Basic Education students: item analysis of pre-entry TABE errors in all areas, a spelling sample, a writing sample, and an oral reading sample. I plan each session with three areas of remediation in mind: reading, writing (including spelling), and math.

"April"

I used three primary sources of diagnostic information with "April": my analysis of pre-entry Form 7, Level E TABE errors, a writing sample, and an oral reading sample. (I acquire diagnostic oral reading samples by picking readings of likely interest to the learner and usually at no more than 2 grade levels below the student's reading level based on the TABE reading score. I identify the reading levels of oral reading selections by using a readability formula such as the Fry (as found in Laubach Literacy Action, 1999, p.44).)

In April's case, I chose a generic children's book (Wallace, 1999), which the publisher indicates is written at a 1st grade level, but which also includes many complex word patterns characteristic of higher reading levels

and representative of types of remedial decoding and spelling patterns.

This source confirmed the relatively high reading level suggested by April's pre-entry TABE reading score, but also resulted in additional diagnostic information in the form of word substitutions.

The type and relative infrequency of errors in April's writing and oral reading samples confirmed evidence from item analysis of TABE errors that remedial "point zero" for April would be math computation and written language structures. I made no assumptions that because April had been labeled as having a specific language disability, she therefore necessarily needed an intensive, structured program of language remediation. I didn't use either checklist with April. I offered suggestions of learning activities and let her decide what to learn, either by choosing from among learning activities I offered or by devising her own activities. The first micro-units I offered which she completed with her volunteer tutor were learning activities on multi-column addition and subtraction, as well as long division using selected lessons from *Number Power 1* (Howett, 2000) in a sequence and manner that made sense to her in accord with her expressed goal. Another initial micro-unit was a structured, multi-sensory introduction to comma rules (p. 42).

Before April began with her tutor, I discussed with her my conceptualization of specific learning disability as a way of being very logical with a some times illogical system, the English language, such that errors occur. I used my "combo manipulables," two letters (what I think of as a modified "p-with-a-hook" and an "m") that can show how all letters consist of the same physical and visual components, straight and curved lines. Using the two combo manipulables, I showed April how covering parts of each alphabetical or numerical symbol and turning the manipulable in space represents how easy it is to visually and spatially alter the appearance and, consequently, the meaning of literacy symbols. I showed how an "l" or "i" can be an "a" with addition of a circle, which then can look like a "o" or "c" or "r" with other parts of the symbol covered by my finger and the symbol turned in space. I showed how a "d" can become a "b" or "p" or "q" or "g" or "h" or "l," etc.

I explained that "dyslexics" sometimes naturally tend to move such symbols around in the space-of-their-minds, that it's often problematic for them to get such symbols to "sit on the page" when reading or writing. I explained that for students who appear to have a specific language-based learning disability, known popularly as "dyslexia," making substitution errors

isn't "dumb" (Jordan, 1996); making such errors may just be the "dyslexia" persisting during reading and spelling. I explain that from another perspective, so-called "dyslexia" is characteristic of an active, creative, multi-sensory mind. Interference with an expectation of ordinary uses of literacy symbols is the negative flip side of a tendency to more actively, creatively manipulate the symbols. I explained my belief and confidence that April could gradually learn to recognize, accept, and correct "mistakes" during her ordinary uses of literacy symbols and that I would assist her in shaping her program to that end.

I reminded April of her success at earning a high school diploma, working a job, being a parent. I also cued her to the value and importance of using and sharing her current literacy skills as she learned new skills. April subsequently set her own pace, in accord with her interests, by choosing a traditional volunteer tutorial (rather than working with the program director in a 1-1 remedial tutorial), and then taking a summer break from the program.

After her 1-1 work with me and at the beginning of her work with the volunteer tutor, I made a list of specific lessons and particular pages or exercises I recommended April work on with her tutor. The list included

learning activities from the following published materials: *The Quick-Word Handbook for Practical Writing* (Sitton and Forest, 1994); *Workforce Writing Dictionary* (Steck-Vaughn, 1998); *The New Oxford Picture Dictionary* (Parnwell, 1998); *Challenger 5* (Murphy, 1985); *Contemporary's Number Power 1* (Howett, 2000). By the fourth month of her tutorial, April and her tutor spontaneously began paragraph-level writing practice and remediation, without direction from me as program director. When April returns to the program, I will encourage her tutor to spiral back to sub-skills introduced earlier, checking for and modeling automatization of sub-skills, especially in the areas of math computation and written language.

"Janus"

I used three primary sources of diagnostic information in starting my work with "Janus": my item analysis of pre-entry TABE Form 7 and 8 Locator Test errors, a spelling sample, and two oral reading samples. While getting 15 of 17 correct on the Reading section, Janus barely scored high enough on the Math and Language sections of the Locator Test to justify his taking Form 7, Level E instead of Level L.

For a spelling sample, I sometimes have students attempt to spell a half-a-dozen words of increasing complexity, first trying to spell aloud

verbally, then writing each if they choose. Here were Janus' spellings:
pancake (OK spoken and written); potato/paoto (spoken)/poto (written);
petrified/petrifid (spoken)/petirfid (written); physical/phisale
(spoken)/phyciale (written); psychological (no attempt, spoken or written).
These errors suggested to me the likely intellectual, emotional, and
motivational benefits to Janus of starting with learning activities chosen or
designed using the "Structured Language Checklist" as a guide. I believed
that an overview of basic language structures could give him a feeling that
"nothing had been missed." He agreed.

For oral reading samples in Janus' case, he chose articles of interest
from recent issues of the *News for You* (New Readers Press, 2005) weekly
newspaper. His oral reading errors on the "300 Sight Words Inventory"
(included in Reddington; also see Fry, 1997A) were what I think of as "classic
dyslexic" word substitutions that can impact comprehension (e.g.,
were/where; though/through; form/from; there/three), a phenomenon we
discussed, eliciting an "ah-ha" reaction from Janus. I advised Janus that
when he read silently to himself and the sentence didn't make sense, a basic
strategy should be to reread, checking for words where he may have made
such substitutions by leaving out or transposing letters.

The type and relative infrequency of errors in Janus' oral reading confirmed evidence from item analysis of TABE Locator Test errors that remedial "point zero" for Janus would be math computation and written language structures. I made no assumptions that because Janus appeared to me to have a language-based learning disability, he necessarily required an intensive, structured program of language remediation. While I used the "Structured Language Checklist" (p.30) with Janus for his first three more-than-2-hour sessions (a teaching strategy I suggested with which he agreed) Janus balked at my intention to use parts of the Spalding curriculum (Spalding, 1990) by his fourth session, deciding instead to complete his pre-entry TABE testing during his fifth and sixth sessions. Janus then decided to take the GED Practice Tests, getting 25 of 25 correct in Social Studies (800 raw score), 19 of 20 correct in Reading (650 raw score), and 19 of 25 correct in Science (450 raw score), but struggling with the Math and Language Arts sections.

Janus recently expressed his commitment to next work on improving his math and language skills and reiterated his plan to take the GED as soon as he believes he's ready. After he completes the GED Practice Tests, I suspect he'll want to proceed in the program like April did, with a 1-1 tutor.

As program director, I'll be mindful of spiraling back to have Janus complete appropriate micro-units to automatization on math computation skills, probably using *Number Power 1* (Howett, 2000), and on written language structures using learning exercises such as "The Six Comma Rules" and "Six Capitalization Rules" learning activities (pp.42-3), while Janus also begins using math and language pre-GED materials.

In the process of applying diagnostic-remedial principles with Janus, I offered suggestions and let him decide what to learn, in a way that made sense in accord with his expressed goals. I used my "combo manipulables," as Janus believed they applied to him. I reminded Janus of his prior successes as an athlete, a family provider, and a learner currently committed to earning a GED by continuing in adult education. I cued him to the value and importance of using and sharing current literacy skills as he learned new skills. Janus set his own pace, in accord with his goals, choosing to end (what I saw as) pre-Intermediate-level remedial work when he felt the time was right, to do the GED-specific work more in line with his long-term goals.

"Gus"

I used three primary sources of diagnostic information with "Gus": my item analysis of pre-entry TABE Form 7, Level L errors, samples of materials

found in his existing file (especially flashcards of particular sight words), and Gus' responses to items on the "Reading/Writing Goals" and "Math Survey" checklists (in Reddington). Using the "Basic Literacy Checklist" (p.32) as a guide, we moved steadily through Gus' completion of learning activities I chose; Gus stores these in a master notebook (Olivier and Bowler, 1996, pp.187-90).

The item analysis of Gus' pre-entry TABE revealed significant difficulties recognizing and distinguishing sounds of letters within words. (On his post-entry TABE, Gus missed more on the pre-reading skills section for middle and ending sounds than on the pre-entry administration, yet got all the reading skills section correct. I tend to attribute this phenomenon to Gus not yet having mastered all the varieties of sounds the same vowel can make and his relative lack of understanding of vowel and consonant combination sounds, skills on which we continue to work). Months later, we continue work on micro-units spiraling back to provide practice in recognizing the differences in the sounds of short vowel phonograms. I created a set of flash cards of short vowel phonograms (featuring many words found on the list on pp.34-5; see Fry, 1997B for comprehensive lists of such words). We occasionally play games as learning activities for practicing letter sound

recognition (see Daniel, 1997A, p.14; Daniel, 1997B, p.10 for samples). Gus has just started work on final, silent "e" words (pp.32-3).

A primary, regular learning activity for Gus is oral reading. We used carefully selected articles (at just below Gus' readability level) from *News for You* (New Readers Press, 2005) and some easy reading trade paperbacks (Royston, 1998; Wallace, 1999; Brink, 1936: these are generally difficult for Gus; we alternate reading sentences aloud and I keep track of all his errors for diagnostic-remedial purposes). We now are using the "Timeless Themes" series with great success (Rieff, 1991; Rieff, 1993), as that series is more sequentially controlled by both readability level and sub-skill application than our other sources of oral reading materials. I convert errors from oral reading into word wheels or slipcharts (Fry, 1997B, p.9) for use in subsequent sessions.

As part of his multi-sensory language strategy, I encourage Gus to talk. Talking is a natural springboard to writing. He enjoys being a "poet" in discussing and completing "Two-Line Rhyme" sheets (see pp.38-41). He also enjoyed discussing, completing, and hand-delivering greeting cards I make for him on the computer. After a month reading the stories in "Timeless Themes," Gus spontaneously began a session one day by proceeding

to tell me the latest plot twists in his favorite soap opera. I asked if I could type what he was saying, as a way of him "writing" the story. He agreed:

On *General Hospital*, Michael Correntos is a very kind, active boy with a brother named Morgan and a sister named Christina (by Alexis Davis). Sonny Correntos and Jason Quartermaine are gangsters.

When Jason (the Quartermaine's son) found out Michael was alive, Jason went to look for Michael. Jason was so shocked to see Michael alive, that then Allen Quartermaine and A.J. hid Michael up in the attic.

A.J. said, "Don't turn your back on me; don't turn against me."

A.J. had a gun and shot Allen, his own father, in the back.

The police arrested Carly Correntos, Sonny's wife, for murdering A.J.

When Michael saw that, he wasn't happy, saying, "Don't arrest my Mommy. Don't arrest my Mommy."

I anticipate this text (which we now add to each session and from which Gus enjoys reading aloud) will eventually become a reference for writing structure remediation, to which we'll spiral back in later sessions.

Multi-sensory math learning activities are effective for Gus. I use coins with the math worksheets (pp.48-58), starting just with pennies with Gus. After six months and approximately 40 hours of total contact time moving progressively through the "Basic Literacy Checklist," Gus has just

started learning concepts underlying multiplication (such as grouping and counting by 2s, 3s, etc.). We regularly spiral back to already introduced addition and subtraction math facts using flashcards. Gus has expressed interest in learning to use a checkbook; I have materials ready (as found in Reddington), but Gus has yet to master the spelling of all the number names (pp.46-7). Gus invited me to become a member of his person-centered planning (*The Person Centered Planning Education Site, 2005*) team.

Engagement in the planning process seems to motivate Gus to learn: he wants to operate his own business some day. As part of my role as person-centered planning team member, I've recently begun creating conversational scripts (pp.44-5) for practice with and use by Gus.

"May"

I used four primary sources of diagnostic information with "May": my item analysis of pre-entry TABE Form 8, Level E errors, a writing sample, a couple of oral reading samples, and her responses to "Reading/Writing Goals" and "Math Survey" checklists (in Reddington). As her oral reading errors are relatively few and far between for her grade level as determined by her pre-entry TABE reading score, and her spelling errors are primarily phonetic (e.g., gallon/galon; president/presedent; collect/culect; against/agenst), I

suggested May work first on math computation and writing structures. She agreed. May has worked primarily on math worksheets and composition of "Two-Line Rhymes," following the order of learning activities given on the "Basic Literacy Checklist" (p.31) as a guide. As with Gus, she stores her work in a master notebook (Olivier and Bowler, 1996, pp.187-90). May and Gus regularly meet with me in consecutive 1-1 tutorials with some overlap time that functions as a group tutorial.

May typically works independently on math and "Two-Line Rhyme" sheets. My 1-1 work with May typically involves micro-units on sub-skills such as adding versus multiplying with zero; we also use sets of math facts flash cards. May also uses pennies as math manipulables and math facts flashcards. On the "Math Survey," May indicated her interest in learning computer uses; she has a calculator in her master notebook she sometimes uses to complete math sheets.

My expectation is that completion of "Two-Line Rhyme" sheets will provide an accountability experience of "showing what she knows," while also exposing more uncommon spelling patterns among rhyming words (p.40-1). My hope is that this experience will result in more diagnostic information (from misspellings of words used in completing the "Two-Line Rhyme" sheets,

but not given on the page), as well as a growing sense of familiarity with words spelled non-phonetically. Such a sense of familiarity may be important for achieving a level of comfort helpful for successful spelling remediation later.

An occasional, secondary learning activity for May is oral reading. We use the "Timeless Themes" series (Rieff, 1991; Rieff, 1993), sometimes during the overlap time with Gus. This series is written below her reading level, but she seems to enjoy the content and maybe a feeling of being held accountable for demonstrating success with her current reading ability. While I've converted some errors from oral reading into slipcharts (Fry, 1997B, p.9) we have yet to use them.

Conclusion

There are other students not mentioned here with whom I had success using a diagnostic-remedial approach. There were a couple others for whom the approach did not seem as helpful. Maybe those students would be better served by approaches more intent on developing self-directedness than the approach described here. Maybe I could better

elicit, shape, monitor, and support students' literacy goals. Sounds like a subject for a future mini-grant proposal.

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Student name _____

STRUCTURED LANGUAGE CHECKLIST

#1 (done at home, before first class session)

Reading

_____ Basic Informal Reading Inventory

_____ 300 Sight Words Inventory

#2

Reading

_____ "Syllable" understanding

_____ Distinguish consonants/vowels

_____ Read alphabet

_____ Recall names of letters

_____ Orally reads in context: diagnostic

Spelling

_____ Spell name with manipulables

_____ Recite alphabet

_____ Syllabicate names: diagnostic

Writing

_____ Begin writing "Page One" (from Spaulding Method curriculum), vowel "e"

#3

Reading

_____ Recognize letter sounds

_____ Recite vowel names/long sounds

_____ Recite consonant names

_____ Orally read final silent e/long

vowel sound words, b-l: diagnostic

Spelling

_____ Syllabication: accent

_____ Syllabication: vc/cv

_____ Syllabicate names: vc/cv

_____ Continue writing "Page One" (from Spaulding Method curriculum), through vowels

#4

Reading

_____ Recite all letter sounds

_____ Recite short vowel sounds

_____ Orally read closed syllables,

b-l: diagnostic

Spelling

_____ Syllabication review: accent

_____ Syllabication review: vc/cv

_____ Syllabication: closed syllable

vc/cv words, #1

Student name _____

BASIC LITERACY CHECKLIST

#1

Reading

- _____ Recognizes printed name
- _____ Spells name: manipulables
- _____ Recites alphabet
- _____ Recalls names of letters

Math

- _____ Recognizes numbers 1-20
- _____ Counts to 20
- _____ Number/thing corres. 1-10
- _____ Adds single digits, 1-5

Writing

- _____ Prints name
- _____ Prints residential address

#2

Reading

- _____ Recognizes letter sounds
- _____ Recite long vowel sounds
- _____ Reads number names, 1-10
- _____ Orally reads in context: diagnostic

Math

- _____ Writes numbers, 1-10
- _____ Subtracts single digits, 1-5
- _____ Recognizes number 0

Writing

- _____ Helps write two-line rhyme, given closed syllable word wheel

#3

Reading

- _____ Recites letter sounds
- _____ Reads number names, 11-20
- _____ Remediation: word wheels, slip-charts, etc.
- _____ Orally reads in context: diagnostic

Math

- _____ Writes numbers, 11-20
- _____ Adds single digits, 6-9

Writing

- _____ Helps write simple thank you cards from templates

#4

Reading

- _____ Recognizes short vowel sounds
- _____ Orally read closed syllables,
b-l: diagnostic
- _____ Remediation: word wheels, slip-charts, etc.
- _____ Orally reads in context: diagnostic

Math

- _____ Subtracts single digits, 6-9

Writing

- _____ Helps write simple birthday and/or holiday cards from templates

Silent Final E/Long Vowel Sound Words, #1 (b-l)

babe	cede	dude	gene	lame
bade	cite	duke		lane
bake		dune	give	late
bale	code	dupe		laze
bane	coke		gone	
bare	come	fade	gore	life
base	cone	fake		like
	cope	fame	hale	lime
bide	core	fare	hare	line
bike	cove	fate	hate	live
bile			have	
bite	dale	fete	haze	lobe
	dame			lode
bode	Dane	fife	here	lone
bone	dare	file		lope
bore	date	fine	hide	lore
	daze	fire	hike	lose
cage	dime	five	hire	Lose
cake	dine		hive	love
came	dire	fore	hole	
cane	dive	fume	jade	lute
cape		fuse	Jake	
care	dole		Jane	
case	dome	gale		
cave	done	game	kale	
	dope	gape	Kate	
	dote	gate		
	dove	gave	lake	
		gaze	lame	

Some Homophones

bale/bail	cede/seed	fare/fair	hale/hail	lode/load
bare/bear	cite/site	fate/fete	hare/hair	lone/loan
bite/byte/bight	core/corps	fore/four/for	here/hear	lute/loot
bore/boar	dine/dyne	gale/Gail	hire/higher	
			hole/whole	

Silent Final E/Long Vowel Sound Words, #2 (m-z)

made	name	pile	ride	safe
make	nape	pike	rife	sage
male	Nate	pine	rile	sake
Mame	nave	pipe	ripe	sale
Mane			rise	same
mare	Nile	poke	rite	sane
mate	nine	pole		sate
maze		pore	robe	save
	node	pose	rode	
meme	none		role	side
mere	nope	puke	rope	sire
mete	note	pure	rose	site
			rote	size
mode	nude		rove	
mole	nuke	rage		sole
mope		rake	rube	sore
more	page	rape	rude	
mote	pale	rare	rule	sure
move	pane	rate	rune	
	pare	rave	ruse	take
mule	pave	raze	tale	tame
			tape	tide
muse	tile	time	tine	tire
mute	Pete	toke	tome	tone
tore	tote	tube	tune	vale
vane	vase	vibe	vile	vine
vise	vote	vice	wade	ware

Some Homophones

made/maid	none/nun	raze/raise	sale/sail
male/mail	pale/pail	rite/right/write	side/sighed
Mame/maim	pane/pain	rode/road/rowed	site/sight/cite
mane/main	pare/pair/pear	role/roll	sole/soul
mete/meat/meet	Pete/peat	rose/rows	tale/tail
mode/mowed	pole/poll	rote/wrote	tide/tied
mote/moat	pore/pour	rude/rued	vane/vein/vain
vise/vice	wade/weighed	ware/wear/where	

Closed Syllable/Short Vowel Sound Words, #1 (b-k)

bad	cub	fat	gut	hut
bag	cup			
bam	cut	Fed	gem	jab
		fen		Jag
bed	dab		gib	jam
beg	dad	fib	gin	Jan
bet	dam	fig		Jap
	Dan	fit	gyp	
bib	Deb			Jed
bid	def	fob	had	Jen
big	den	fog	hag	jet
bin		fop	Hal	
bit	dib		ham	jig
	did	fun	has	
bog	dig		hat	job
bop	dim	gab		jog
bot	din	gag	hem	jot
	dip	gal	hen	
bud	dis	gam	hep	Jud
bug	dit	gap		jug
bun		gas		jut
bus	dog			
	Don	get	hip	keg
cab	don		his	ken
cad	dot	gif	hit	Ken
can		gig		Kim
cap	dub	git	hod	kin
cat	dud		hog	Kip
	dug	gob	hop	kit
cob	duh	god	hot	
cod	dun	got		
cog			hub	
con	fab	gum	hug	
cop	fad	gun	hum	
cot	fan	Gus	hun	

Closed Syllable/Short Vowel Sound Words, #2 (l-z)

lab	mod	pig	rub	tan
lad	mom	pin	rug	tap
lag	mol	pit	rum	tat
lam	mop		run	
lap		pod	rut	Ted
lat	mud	pop		ten
		pot	sad	Tet
leg	nab		sag	
let	nag	pub	Sal	Tim
	nap	pun	Sam	tip
lid		pup	sap	tit
lip	Ned	put	sat	
lit	Nel			Tod
	net	rad	set	Tom
lob		rag		ton
log	nib	ram	Sid	top
lop		ran	sin	tot
lot	nob	rap	sip	
	nod	rat	sit	tub
lug	not			tug
		reb	sob	tum
mad	nub	red	sod	tun
man	nun	ref	son	Tut
map	nut	rep	sop	
mat			sot	van
	pad	rib		vat
med	pal	rid	sub	vet
Mel	pan	rig	sum	vim
men	pat	rim	sun	
met		rip	sup	wad
	peg			wag
mid	pen	rob	tab	wan
Mig	pep	rod	Tad	war
web	pet	rot	tag	was
wet	zag	zap	tam	wax

Student name _____

SYLLABICATION PRACTICE: vc/cv, #1
(vowel, consonant/consonant, vowel)

badman	cubby	Fenway	haggard
bagman	cupboard	fibbed	hamlet
Batman	cupcake	fibber	hatter
bedroom	cutting	fitted	hemline
begging	dabbed	fitting	henhouse
better	daddy	foggy	hepcat
bidding	dammed	funny	hidden
bigger	Danny	gabby	hipster
bitter	Debbie	gabbed	hitman
bogged	defjam	gagged	hitter
bopped	Denny's	gallant	hopped
bottom	digger	gassy	hotter
busman	dimwit	gassed	hubcap
busboy	dinner	godly	Huggies
cabbie	dipper	gummy	Hummer
caddy	disgust	gummed	jabbed
cannot	ditto	gunned	jammed
capgun	doggy	guttled	Jenny
catcall	dotted	ginmill	jigger
codfish	dubbed	gypped	jogger
conman	fanned	giblet	jotted
copper	fatted	Hadley	juttled

Student name _____

SYLLABICATION PRACTICE: vc/cv, #2
(vowel, consonant/consonant, vowel)

ladder	nocturnal	potted	ruttled
laggard	nodded	potpie	sadden
lapdog	nutmeg	puppet	sadder
legging	nutty	puppy	sagged
letdown	padded	ragged	Sally
lobby	Paddy	rammed	Sammy
lobbed	palpitate	ramrod	sapper
logger	pancake	rancid	setter
logged	Patriots	rapper	Sidney
lottery	Patty	redder	sinner
madder	Peggy	ribbed	sipper
manmade	pencil	riddled	sitter
manners	pepper	rigger	sodden
mapping	petted	ripcord	sonny
matted	petty	robber	sotted
molten	piggy	rotten	summer
mommy	pigpen	rotgut	supper
mopped	pinhead	rubber	tablet
nabbed	pitted	rugged	Tammy
nagged	pitfall	rummy	Teddy
napped	plodder	runner	tenfold

Two-Line Rhymes, #1

Directions: Write a rhyme on the lines. Use words from each group.

Sample:

The dog was bad _____

bad Dad glad

He was sad _____

had mad sad

bag gag nag

rag sag tag

bam Sam ham

jam Pam tam

cap gap lap

map nap tap

bat cat fat

hat rat sat

car far bar

jar tar mar

dish fish wish

squish swish

Two-Line Rhymes, #2

Directions: Write a rhyme on the lines. Use words from each group.

Sample:

The dog was bad _____

bad Dad glad

He was sad _____

had mad sad

boast coast roast

toast most ghost

blame came game

name same tame

dive five hive

live arrive survive

bark dark hark

mark park remark

barge large Marge

sarge

beep deep peep

seep weep

Two-Line Rhymes, #3

Directions: Write a rhyme on the lines. Use words from each group.

Sample:

The dog was bad _____

bad Dad glad

He was sad _____

had mad sad

drink sink link

think kink pink

cable fable table

gable stable Mabel

good hood stood

wood could would

food mood brood

feed need seed

eat beat heat

meat seat wheat

bold cold fold

gold hold sold

Two-Line Rhymes, #4

Directions: Write a rhyme on the lines. Use words from each group.

Sample:

The dog was bad _____

bad Dad glad

He was sad _____

had mad sad

bin pin sin

win shin tin

cute suit shoot

root mute fruit

shirt hurt dirt

curt blurt alert

there where stare

care bear aware

buy die high

my sigh guy

gate great wait

straight hate

The Six Comma Rules

1. two independent clauses connected with "fanboys"
2. words in a series
3. person being addressed
4. introductory expression
5. unnecessary information
6. dates, addresses, numbers

1. _____, fanboy _____.

The "fanboys": *for and nor but or yet so*

2. ..._____, _____, and _____.

3. _____, (person's name), _____.

4. (Introductory expression), _____.

5. _____, (unnecessary information), _____.

6. (day of week), (month and date), (year)
(street), (city), (state), (country)
(1),(000),(000),(000)

1. I went home, and the puppy followed me.
2. The puppy was brown, black, and white.
3. My neighbor, Mrs. Smith, owns the puppy.
4. Later this afternoon, I'll take the puppy back to Mrs. Smith.
5. The puppy, not surprisingly, licked my face.
6. Tomorrow is Friday, May 10. Mrs. Smith lives right next door to me at 1
Main Street, Claremont, NH. They say her puppy is worth \$1,000.

Six Capitalization Rules

1. *first words* of a sentence, of a line of poetry, and of a quotation
2. first, last, and important words in *titles of* produced *works*
3. the pronoun "*I*" and its contractions
4. *proper nouns* (and their *proper adjectives*): names of people; days, months, holidays; specific products, companies, stores, schools, organizations, and teams; cities, states, provinces, countries, continents, and specific geographic locations; streets, parts of towns, and regions of a country; names of buildings and monuments; specific names
5. *people's titles* and their abbreviations
6. *abbreviations* and *parts of a letter*

1. Capitalize the first word of a sentence.

Capitalize, alas, a line of poetry so fair,
Said the poet, "Hark, of capitals, beware."

2. The Literacy Liaison's Collection of Handouts Extraordinaire
Lemony Snicket's Series of Unfortunate Events

3. I typed this because I have a job where I'm responsible for the learning of the students I've acquired.

4. Greg went on Monday to Wal-Mart in Claremont on Washington St. behind Veteran's Cleaners to buy American-made 3M Post-It Notes.

5. Mr. Eddy is both my title and my father's title, although I'm Mr. Gregory L. Eddy, M.Ed. because I earned an advanced degree.

6. Fri., Feb. 28 in Claremont, N.H.
2100 N. Main St.
Ms. Heidi Kuttner
Director of Adult Education

I Message

I feel _____

When _____

Because _____

And I would like _____

Some feelings:

happy	angry	sad	disappointed
confused	OK	relieved	encouraged
interested	_____	_____	_____
_____	_____	_____	_____

Business Telephone Script

(Gus' phone rings. Gus answers the phone.)

Gus: Hello, this is Gus. **Who's** this calling?

The other person: Hi. This is _____.

Gus: **What** can I do for you? **How** may I help you?

_____ (name of the other person): Gus, could you _____?

Gus: **Where** would this be? **When** would you like me to do this?

_____ (name of the other person): It's at _____.

Gus: I know where that is. OR I don't know where that is. Could you give me directions from my home?

_____ (name of the other person): So, Gus, can you do this for me?

Gus: Yes, I'll be there. OR No, I'm sorry, but I can't do it.

Student name _____

NUMBER NAMES

1 one _____

2 two _____

3 three _____

4 four _____

5 five _____

6 six _____

7 seven _____

8 eight _____

9 nine _____

10 ten _____

4 _____ 7 _____ 2 _____ 8 _____ 3 _____ 1 _____

5 _____ 9 _____ 7 _____ 10 _____ 6 _____ 8 _____

one _____ six _____ ten _____ five _____ seven _____ two _____

nine _____ eight _____ three _____ one _____ eight _____ four _____

Student name _____

NUMBER NAMES, 11 - 20

- 11 eleven _____
- 12 twelve _____
- 13 thirteen _____
- 14 fourteen _____
- 15 fifteen _____
- 16 sixteen _____
- 17 seventeen _____
- 18 eighteen _____
- 19 nineteen _____
- 20 twenty _____

14 _____ 11 _____ 12 _____ 18 _____
15 _____ 19 _____ 13 _____ 20 _____

eleven ___ sixteen ___ twenty ___ fifteen ___ seventeen ___

nineteen ___ eighteen ___ thirteen ___ twelve ___ nineteen ___

Student name _____

ADDING SINGLE DIGITS, 1-5

$\begin{array}{r} 1 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +3 \\ \hline \end{array}$	$1 + 1 =$	$1 + 2 =$	$2 + 2 =$	$2 + 1 =$
--	--	--	--	-----------	-----------	-----------	-----------

$\begin{array}{r} 1 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +4 \\ \hline \end{array}$	$4 + 1 =$	$4 + 2 =$	$2 + 4 =$	$3 + 3 =$
--	--	--	--	-----------	-----------	-----------	-----------

$\begin{array}{r} 3 \\ +1 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +2 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +2 \\ \hline \end{array}$	$1 + 3 =$	$3 + 2 =$	$2 + 4 =$	$4 + 3 =$
--	--	--	--	-----------	-----------	-----------	-----------

$\begin{array}{r} 1 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +5 \\ \hline \end{array}$	$5 + 1 =$	$5 + 2 =$	$5 + 3 =$	$3 + 4 =$
--	--	--	--	-----------	-----------	-----------	-----------

$\begin{array}{r} 2 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +2 \\ \hline \end{array}$	$4 + 4 =$	$5 + 4 =$	$3 + 5 =$	$1 + 5 =$
--	--	--	--	-----------	-----------	-----------	-----------

$\begin{array}{r} 5 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ +4 \\ \hline \end{array}$	$2 + 5 =$	$4 + 3 =$	$5 + 3 =$	$2 + 4 =$
--	--	--	--	-----------	-----------	-----------	-----------

Student name _____

ADDING SINGLE DIGITS, 6-9

$$\begin{array}{r} 6 \\ +1 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ +2 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ +6 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ +3 \\ \hline \end{array}$$

$1 + 6 =$

$6 + 2 =$

$2 + 6 =$

$6 + 1 =$

$$\begin{array}{r} 6 \\ +4 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ +2 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ +3 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ +4 \\ \hline \end{array}$$

$7 + 1 =$

$2 + 7 =$

$3 + 7 =$

$6 + 0 =$

$$\begin{array}{r} 3 \\ +6 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ +2 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ +3 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ +2 \\ \hline \end{array}$$

$6 + 3 =$

$7 + 2 =$

$4 + 4 =$

$7 + 3 =$

$$\begin{array}{r} 1 \\ +9 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ +7 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ +7 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ +5 \\ \hline \end{array}$$

$8 + 1 =$

$7 + 0 =$

$2 + 8 =$

$3 + 6 =$

$$\begin{array}{r} 2 \\ +7 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ +6 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ +5 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ +2 \\ \hline \end{array}$$

$9 + 1 =$

$0 + 9 =$

$5 + 5 =$

$1 + 8 =$

$$\begin{array}{r} 5 \\ +5 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ +4 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ +3 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ +4 \\ \hline \end{array}$$

$2 + 5 =$

$4 + 3 =$

$5 + 3 =$

$2 + 4 =$

Student name _____

ADDING and CARRYING, 5-7

$\begin{array}{r} 5 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +4 \\ \hline \end{array}$	$5 + 5 =$	$5 + 4 =$	$5 + 3 =$	$6 + 4 =$
--	--	--	--	-----------	-----------	-----------	-----------

$\begin{array}{r} 6 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +5 \\ \hline \end{array}$	$4 + 5 =$	$4 + 6 =$	$6 + 5 =$	$6 + 6 =$
--	--	--	--	-----------	-----------	-----------	-----------

$\begin{array}{r} 5 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +3 \\ \hline \end{array}$	$7 + 3 =$	$5 + 6 =$	$7 + 2 =$	$7 + 4 =$
--	--	--	--	-----------	-----------	-----------	-----------

$\begin{array}{r} 4 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ +5 \\ \hline \end{array}$	$5 + 7 =$	$6 + 2 =$	$7 + 3 =$	$4 + 7 =$
--	--	--	--	-----------	-----------	-----------	-----------

$\begin{array}{r} 6 \\ +4 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +6 \\ \hline \end{array}$	$4 + 6 =$	$5 + 7 =$	$6 + 5 =$	$4 + 5 =$
--	--	--	--	-----------	-----------	-----------	-----------

$\begin{array}{r} 5 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +4 \\ \hline \end{array}$	$7 + 5 =$	$4 + 5 =$	$5 + 3 =$	$5 + 4 =$
--	--	--	--	-----------	-----------	-----------	-----------

$\begin{array}{r} 5 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ +5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ +7 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ +2 \\ \hline \end{array}$	$7 + 7 =$	$4 + 7 =$	$5 + 5 =$	$6 + 4 =$
--	--	--	--	-----------	-----------	-----------	-----------

Student name _____

ADDING and CARRYING, 8-9

$$\begin{array}{r} 5 \\ +5 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ +6 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ +7 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ +8 \\ \hline \end{array}$$

$6 + 5 =$

$5 + 7 =$

$8 + 5 =$

$8 + 4 =$

$$\begin{array}{r} 6 \\ +5 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ +6 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ +7 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ +8 \\ \hline \end{array}$$

$4 + 8 =$

$6 + 6 =$

$6 + 5 =$

$6 + 7 =$

$$\begin{array}{r} 7 \\ +5 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ +6 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ +7 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ +8 \\ \hline \end{array}$$

$7 + 5 =$

$7 + 6 =$

$7 + 7 =$

$7 + 8 =$

$$\begin{array}{r} 8 \\ +5 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ +4 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ +6 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ +8 \\ \hline \end{array}$$

$5 + 8 =$

$8 + 2 =$

$8 + 3 =$

$8 + 4 =$

$$\begin{array}{r} 9 \\ +1 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ +3 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ +2 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ +4 \\ \hline \end{array}$$

$4 + 9 =$

$5 + 9 =$

$9 + 5 =$

$8 + 5 =$

$$\begin{array}{r} 5 \\ +9 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ +9 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ +6 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ +9 \\ \hline \end{array}$$

$7 + 8 =$

$9 + 5 =$

$9 + 3 =$

$9 + 4 =$

$$\begin{array}{r} 8 \\ +9 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ +9 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ +7 \\ \hline \end{array}$$

$$\begin{array}{r} 0 \\ +9 \\ \hline \end{array}$$

$3 + 8 =$

$9 + 2 =$

$9 + 5 =$

$9 + 8 =$

Student name _____

SUBTRACTING SINGLE DIGITS, 1-5

$\begin{array}{r} 2 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ -0 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ -0 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ -1 \\ \hline \end{array}$	$1 - 1 =$	$2 - 1 =$	$2 - 2 =$	$1 - 0 =$
--	--	--	--	-----------	-----------	-----------	-----------

$\begin{array}{r} 3 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ -2 \\ \hline \end{array}$	$4 - 1 =$	$4 - 2 =$	$4 - 0 =$	$3 - 3 =$
--	--	--	--	-----------	-----------	-----------	-----------

$\begin{array}{r} 3 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ -0 \\ \hline \end{array}$	$3 - 1 =$	$3 - 2 =$	$2 - 0 =$	$4 - 3 =$
--	--	--	--	-----------	-----------	-----------	-----------

$\begin{array}{r} 5 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -5 \\ \hline \end{array}$	$5 - 1 =$	$5 - 2 =$	$5 - 3 =$	$5 - 0 =$
--	--	--	--	-----------	-----------	-----------	-----------

$\begin{array}{r} 4 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -2 \\ \hline \end{array}$	$4 - 4 =$	$5 - 4 =$	$5 - 1 =$	$4 - 0 =$
--	--	--	--	-----------	-----------	-----------	-----------

$\begin{array}{r} 5 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ -3 \\ \hline \end{array}$	$5 - 2 =$	$4 - 3 =$	$5 - 3 =$	$4 - 2 =$
--	--	--	--	-----------	-----------	-----------	-----------

Student name _____

SUBTRACTING SINGLE DIGITS, 6-9

$\begin{array}{r} 6 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ -0 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ -3 \\ \hline \end{array}$	$6 - 1 =$	$6 - 2 =$	$6 - 0 =$	$6 - 1 =$
--	--	--	--	-----------	-----------	-----------	-----------

$\begin{array}{r} 6 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -4 \\ \hline \end{array}$	$7 - 1 =$	$7 - 2 =$	$7 - 3 =$	$7 - 0 =$
--	--	--	--	-----------	-----------	-----------	-----------

$\begin{array}{r} 6 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ -2 \\ \hline \end{array}$	$6 - 3 =$	$7 - 2 =$	$4 - 4 =$	$7 - 3 =$
--	--	--	--	-----------	-----------	-----------	-----------

$\begin{array}{r} 9 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -5 \\ \hline \end{array}$	$8 - 1 =$	$7 - 0 =$	$8 - 2 =$	$6 - 3 =$
--	--	--	--	-----------	-----------	-----------	-----------

$\begin{array}{r} 7 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -2 \\ \hline \end{array}$	$9 - 1 =$	$9 - 0 =$	$5 - 5 =$	$8 - 3 =$
--	--	--	--	-----------	-----------	-----------	-----------

$\begin{array}{r} 6 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ -3 \\ \hline \end{array}$	$5 - 2 =$	$4 - 3 =$	$5 - 3 =$	$4 - 2 =$
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Student name _____

SUBTRACTION FACTS, 10-12

$\begin{array}{r} 10 \\ -0 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -3 \\ \hline \end{array}$	$10 - 4 =$	$10 - 3 =$	$10 - 2 =$	$11 - 0 =$
---	---	---	---	------------	------------	------------	------------

$\begin{array}{r} 10 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -2 \\ \hline \end{array}$	$10 - 5 =$	$11 - 1 =$	$11 - 2 =$	$10 - 3 =$
---	---	---	---	------------	------------	------------	------------

$\begin{array}{r} 11 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -0 \\ \hline \end{array}$	$11 - 1 =$	$11 - 2 =$	$11 - 0 =$	$11 - 3 =$
---	---	---	---	------------	------------	------------	------------

$\begin{array}{r} 10 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -5 \\ \hline \end{array}$	$10 - 3 =$	$11 - 4 =$	$12 - 3 =$	$12 - 0 =$
---	---	---	---	------------	------------	------------	------------

$\begin{array}{r} 12 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -2 \\ \hline \end{array}$	$10 - 4 =$	$11 - 4 =$	$12 - 1 =$	$11 - 0 =$
---	---	---	---	------------	------------	------------	------------

$\begin{array}{r} 11 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -3 \\ \hline \end{array}$	$12 - 2 =$	$12 - 3 =$	$11 - 3 =$	$10 - 2 =$
---	---	---	---	------------	------------	------------	------------

$\begin{array}{r} 12 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ -1 \\ \hline \end{array}$	$12 - 4 =$	$11 - 4 =$	$11 - 1 =$	$10 - 0 =$
---	---	---	---	------------	------------	------------	------------

Student name _____

SUBTRACTION FACTS, 13-15

$\begin{array}{r} 13 \\ -0 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -3 \\ \hline \end{array}$	$13 - 4 =$	$13 - 3 =$	$13 - 2 =$	$13 - 0 =$
---	---	---	---	------------	------------	------------	------------

$\begin{array}{r} 14 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ -2 \\ \hline \end{array}$	$14 - 5 =$	$14 - 1 =$	$14 - 2 =$	$14 - 3 =$
---	---	---	---	------------	------------	------------	------------

$\begin{array}{r} 13 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ -0 \\ \hline \end{array}$	$14 - 1 =$	$13 - 2 =$	$13 - 0 =$	$14 - 3 =$
---	---	---	---	------------	------------	------------	------------

$\begin{array}{r} 15 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ -5 \\ \hline \end{array}$	$15 - 3 =$	$15 - 4 =$	$15 - 3 =$	$15 - 0 =$
---	---	---	---	------------	------------	------------	------------

$\begin{array}{r} 13 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ -2 \\ \hline \end{array}$	$13 - 4 =$	$15 - 4 =$	$14 - 1 =$	$13 - 0 =$
---	---	---	---	------------	------------	------------	------------

$\begin{array}{r} 11 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -3 \\ \hline \end{array}$	$10 - 2 =$	$12 - 3 =$	$11 - 3 =$	$14 - 14 =$
---	---	---	---	------------	------------	------------	-------------

$\begin{array}{r} 14 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -1 \\ \hline \end{array}$	$15 - 4 =$	$13 - 4 =$	$15 - 1 =$	$17 - 0 =$
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Student name _____

SUBTRACTION and BORROWING, 20-22

$\begin{array}{r} 20 \\ -0 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ -3 \\ \hline \end{array}$	$20 - 4 =$	$20 - 3 =$	$20 - 2 =$	$21 - 0 =$
---	---	---	---	------------	------------	------------	------------

$\begin{array}{r} 20 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ -2 \\ \hline \end{array}$	$20 - 5 =$	$21 - 1 =$	$21 - 2 =$	$20 - 3 =$
---	---	---	---	------------	------------	------------	------------

$\begin{array}{r} 21 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 21 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ -0 \\ \hline \end{array}$	$21 - 1 =$	$21 - 2 =$	$21 - 0 =$	$21 - 3 =$
---	---	---	---	------------	------------	------------	------------

$\begin{array}{r} 20 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 21 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ -5 \\ \hline \end{array}$	$20 - 3 =$	$21 - 4 =$	$22 - 3 =$	$22 - 0 =$
---	---	---	---	------------	------------	------------	------------

$\begin{array}{r} 22 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 22 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 22 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 21 \\ -2 \\ \hline \end{array}$	$20 - 4 =$	$21 - 4 =$	$22 - 1 =$	$21 - 0 =$
---	---	---	---	------------	------------	------------	------------

$\begin{array}{r} 21 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 22 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 22 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ -3 \\ \hline \end{array}$	$22 - 2 =$	$22 - 3 =$	$21 - 3 =$	$20 - 2 =$
---	---	---	---	------------	------------	------------	------------

$\begin{array}{r} 22 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 21 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ -1 \\ \hline \end{array}$	$22 - 4 =$	$21 - 4 =$	$21 - 1 =$	$20 - 0 =$
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$\begin{array}{r} 32 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 40 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 51 \\ -5 \\ \hline \end{array}$	$\begin{array}{r} 30 \\ -1 \\ \hline \end{array}$	$42 - 4 =$	$51 - 4 =$	$41 - 1 =$	$30 - 0 =$
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Student name _____

MULTIPLYING SINGLE DIGITS, 1-5

$\begin{array}{r} 1 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 3 \\ \hline \end{array}$	$1 \times 1 =$	$1 \times 2 =$	$2 \times 2 =$	$2 \times 1 =$
--	--	--	--	----------------	----------------	----------------	----------------

$\begin{array}{r} 1 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 4 \\ \hline \end{array}$	$4 \times 1 =$	$4 \times 2 =$	$2 \times 4 =$	$3 \times 3 =$
--	--	--	--	----------------	----------------	----------------	----------------

$\begin{array}{r} 3 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 2 \\ \hline \end{array}$	$1 \times 3 =$	$3 \times 2 =$	$2 \times 4 =$	$4 \times 3 =$
--	--	--	--	----------------	----------------	----------------	----------------

$\begin{array}{r} 1 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$5 \times 1 =$	$5 \times 2 =$	$5 \times 3 =$	$3 \times 4 =$
--	--	--	--	----------------	----------------	----------------	----------------

$\begin{array}{r} 2 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 2 \\ \hline \end{array}$	$4 \times 4 =$	$5 \times 4 =$	$3 \times 5 =$	$1 \times 5 =$
--	--	--	--	----------------	----------------	----------------	----------------

$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 4 \\ \hline \end{array}$	$2 \times 5 =$	$4 \times 3 =$	$5 \times 3 =$	$2 \times 4 =$
--	--	--	--	----------------	----------------	----------------	----------------

Student name _____

MULTIPLYING SINGLE DIGITS, 6-9

$\begin{array}{r} 6 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times 3 \\ \hline \end{array}$	$1 \times 6 =$	$6 \times 2 =$	$2 \times 6 =$	$6 \times 1 =$
--	--	--	--	----------------	----------------	----------------	----------------

$\begin{array}{r} 6 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 4 \\ \hline \end{array}$	$7 \times 1 =$	$2 \times 7 =$	$3 \times 7 =$	$6 \times 0 =$
--	--	--	--	----------------	----------------	----------------	----------------

$\begin{array}{r} 3 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times 2 \\ \hline \end{array}$	$6 \times 3 =$	$7 \times 2 =$	$4 \times 4 =$	$7 \times 3 =$
--	--	--	--	----------------	----------------	----------------	----------------

$\begin{array}{r} 1 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$8 \times 1 =$	$7 \times 0 =$	$2 \times 8 =$	$3 \times 6 =$
--	--	--	--	----------------	----------------	----------------	----------------

$\begin{array}{r} 2 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 2 \\ \hline \end{array}$	$9 \times 1 =$	$0 \times 9 =$	$5 \times 5 =$	$1 \times 8 =$
--	--	--	--	----------------	----------------	----------------	----------------

$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 4 \\ \hline \end{array}$	$2 \times 5 =$	$4 \times 3 =$	$5 \times 3 =$	$2 \times 4 =$
--	--	--	--	----------------	----------------	----------------	----------------