Music: The Link to Literacy

by

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Abstract

A number of studies have been conducted on the connection between music and literacy. This research project, specifically, investigates the potential impact of the implementation of a music curriculum to support phonological and phonemic awareness. Utilizing a one group pre-test, post-test quasi-experimental method (Campbell & Stanley, 1966; Cook & Campbell, 1979) with a time-series design, a music curriculum of ten lessons was implemented with the treatment group. These music lessons were designed to support phonological and phonemic awareness, and were administered to a treatment group of four sections of Kindergarten students. All Kindergarten students, n=238, received the Phonological Awareness Skills Test (Kilpatrick, 2016) in the fall (pre-test) and these scores were compared with the winter scores (post-test). Overall, students who received the treatment of the music curriculum implementation exhibited higher positive growth in their phonological and phonemic awareness skills than their peers, who did not receive the music curriculum.

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Chapter I: Introduction

Problem/Purpose of the Study

Many people have considered music to be a universal language. Whether a person speaks Spanish, Mandarin, German or Latin, music connects people around the world and has the ability to communicate stories and feelings without a single word being spoken. Because music has this ability to communicate, despite a potential language barrier, the question arises, "Can music have a connection to literacy?"

In 2016, Hastings School District (#200) adopted a new literacy series, titled "Making Meaning." When reading test scores dropped, the administration recognized that there were some deficiencies in the curriculum as it didn't align to the Minnesota English Language Arts (ELA) Standards. Consequently, in 2017, Hastings Elementary Schools hired a literacy consultant to help align the teaching with the Minnesota ELA Standards to help improve guided reading practices, and to work with intervention plans. Now, in 2021/2022, there has been another shift in literacy instruction - specifically to the area of phonics instruction and phonemic awareness. Research has shown that a student's skill in phonemic awareness is a good predictor of later reading success or difficulty (Blevins, 2016 & Koutrakos, 2018).

Could the sounds of music be one of the links to literacy? Could it be possible that the work of identifying sounds in music support phonics and phonemic awareness? Is there a link between music and literacy, and, if so, what are some specific strategies/lessons that can be incorporated into the music classroom to help teach phonics and phonemic awareness? These questions led to the purpose for this curriculum project. Specifically, the purpose of this study is to look at the impact of administering a music

curriculum that supports phonological and phonemic awareness in hopes of increasing children's phonological awareness test scores, which will inevitably assist in phonics and their reading ability. Could music provide that link to literacy?

Importance of the Study

Several classroom teachers shared that there is a transition in learning around second and third grade. In Kindergarten and Grade 1, the focus is on learning to read. In Grades 2 and beyond, there is a shift from learning to read to reading to learn. Without these basic skills in phonics and phonemic awareness, the learning becomes more and more challenging. If these music lessons could bridge that gap and assist our students in their phonics and phonemic awareness skills, we could build a secure foundation for their future learning.

Project Goal

The goal of this capstone project is to design and implement a music curriculum which supports phonics and phonemic awareness for our youngest learners. Each music lesson highlights a portion of the first seven subsections of the Phonological Awareness Skills Test (Kilpatrick, 2016) which will now be referred to as the P.A.S.T. It is the goal that these lessons will support the teaching that is happening in the classroom and provide a new media to teach the same concepts. This should be evident in the P.A.S.T. scores. All Kindergarten students were administered the P.A.S.T. in the fall of the year (pre-test) and then again, mid-year (post-test). The final product is the music curriculum and the tables of classroom test scores that indicate more students passing the P.A.S.T. with the support of the music curriculum than their peers across the district.

Chapter II: Literature Review

Introduction

The focal point of this curriculum development project is to nurture phonological and phonemic awareness using the general music education classroom. The use of the music classroom to support phonological and phonemic awareness would be in addition to the learning that is already occurring in the general education classroom. For this reason, this literature review will define phonological awareness, phonemic awareness and phonics, review the top elementary music educator philosophies, and the evidence that supports the music and literacy connection.

Phonological Awareness, Phonemic Awareness, and Phonics

Let's begin with the definition of phonological awareness. "Phonological awareness is the understanding of different ways that oral language can be divided into smaller components and manipulated" (Chard and Dickson, 1999). When we talk about phonological awareness, we are talking about the bigger parts of language; such as asking children to rhyme, combine small words to create a compound word, and in reverse, break words apart into syllables or onset-rime. Onset-rime is the final step in phonological awareness. Onset is when students can identify the beginning sounds of a word, prior to the vowel. The rime is all the sounds following the vowel. For example, in the word cat, /k/ is the onset and /a/ + /t/ is the rime. Phonemic awareness and phonological awareness are both auditory and oral and the focus is on the sounds.

The next level, phonemic awareness, is the ability to identify and manipulate individual sounds (phonemes) in spoken words. The National Reading Panel (NRP, 2000) defines phonemic awareness as the understanding that spoken words are made up of

individual sounds, called phonemes. Despite there being just 26 letters in the English language, there are approximately 41 distinct phonemes. Phonemes are the smallest units within the spoken language. Each phoneme is distinguished by a specific move of the mouth and is represented visually with two slash marks as in /p/. For example, in the word sun, we have three unique sounds or phonemes: /s/ /u/ /n/. Phonemes are different from graphemes as graphemes are the units of **written** language that represent phonemes in the spellings of words. For example, graphemes can consist of one letter such as P, or two letters such as SH, or three letters such as TCH, or even four letters such as OUGH. Phonemes represent sounds and graphemes represent the unit in written language. Phonemic awareness is generally connected to more oral activities as it focuses on the **sounds** in words. Phonics, on the other hand, involves sounds in **spoken** words.

Phonics involves matching the sounds of spoken English with individual letters or groups of letters. For example, the sound *k* can be spelled as c, k, ck or ch. The focus of phonics is the letter-sound relationship which makes phonics instruction both visual and auditory. As children connect letters or letter combinations to the sounds that they hear in words, they are applying the phonemic awareness skills of blending, segmenting, and manipulating the phonemes that represent each sound. This is how we see that phonological awareness and phonemic awareness are connected to phonics (Cooper, Robinson, Slansky, & Kiger, 2017 & Farris & Werderich, 2019). Blevins (2016) indicated a number of research articles and texts that support the importance of phonics and phonemic awareness as key indicators of early reading skills.

Elementary Music Philosophies

Dr. John Feierabend is considered one of the leading authorities on music and movement development in early childhood in America today. Feierabend (2001) has developed his own curriculum titled "Conversational Solfege" based on the works of Zoltan Kodaly. In the 1940's, Kodaly created his philosophy of music education during his work in Hungary. Using the principles of Kodaly's philosophy, Kodaly's colleagues and students developed what we call today, the "Kodaly Method." Shinichi Suzuki developed the Suzuki method of learning how to play an instrument in Japan. In Germany, Carl Orff, together with Gunild Keetman, created a very innovative approach to music education for children, known as Orff Schulwerk. Each of these leaders in music education believe that music should be learned with ears first before learning with their eyes. The sounds need to come first before the visual presentation of visual notation. Just as the leaders in literacy believe it should be the phonemes before the graphemes, the music leaders agree it should be the sounds before the visual notation. (Choksy, 1987; Frazee & Kreuter, 1997). This raises the question, could music provide that link to literacy?

Music Reading Studies

Previous research has indicated that there is a correlation between music training and reading, specifically pre-reading abilities (Corrigall & Trainor, 2011). According to Hall and Robinson (2019), music and reading share three primary learning processes: auditory processing-which is the ability to hear and manage sound; symbolic representation processing-which is the use of symbols to communicate a message; and coding processing-which is the ability to use encoding and decoding processes to make

meaning. Moreno, Friesen, and Bialystok (2011) and Swierk (2018) supported this belief with their individual studies that music training for children improved rhyme awareness, the ability to understand that a symbol can be a representation of a concept, and memory processes. However, these studies did not implement a music curriculum that focused on phonological and phonemic awareness and phonics to assess if a specific treatment could boost children's phonemic awareness test scores.

Summary

In this chapter, the difference between phonological awareness and phonemic awareness was clarified, as well as the definition of graphemes as they correspond to sounds. In addition, several music philosophers agree that children need to hear and be able to identify the difference in sounds before attaching a visual component to represent those sounds. Finally, literary leaders agree that there is a link between music and literacy and they concur on the same belief as the music philosophers; students need to hear the sounds prior to adding a grapheme to the sound. While considering the similarities between the study of music and listening to music when compared with the concept of learning how to read, it is the hope and goal that a music curriculum, specifically designed to support phonics instruction and phonemic awareness could potentially impact the student's skills in reading and improve the student's phonological awareness skills. With the ultimate goal of improving educational practices, the purpose of this study is to look at the impact of administering a music curriculum that supports phonological and phonemic awareness in hopes of increasing children's phonological awareness test scores, which will inevitably assist in phonics and their reading ability.

Chapter III: Implementation

Introduction

The purpose of this study was to determine if a music curriculum focused on phonological and phonemic awareness could impact the student's skills in reading and improve the student's phonological awareness skills. Evidence would be provided through the Phonological Awareness Skills Test (P.A.S.T.) scores. This chapter will share the procedures involved in the development and implementation of this project. Next, the artifacts of the curriculum and assessment plan were examined. Finally, the results of the project are discussed.

Procedure

This study was a quasi-experimental study incorporating the one group pre-test, post-test method. For this study, all Kindergarten students across the Hastings School district took part in the P.A.S.T. (see Appendix B).   The P.A.S.T. that the Hastings School District selected to implement was designed by David A. Kilpatrick, Ph.D. with a copyright in 2003, 2010, and 2019. This P.A.S.T. was adapted from the levels used in McInnis (1999) & Rosner (1973). The Kindergarten staff and Reading Interventionists administered the P.A.S.T. assessment to all Kindergarten students by October 15, 2021. The data collected served as a baseline for phonics instruction and provided the baseline data for this study. The district expectation for the baseline data was to administer the first seven subsets of the P.A.S.T. After administering the first seven subtests, the test may stop if a child does not show mastery of two consecutive subtests. The P.A.S.T. has 14 possible subtests.

At Pinecrest Elementary school, a letter was distributed at the beginning of January to all Kindergarten families indicating that in our commitment to helping our students become readers, we would be employing more of an interdisciplinary approach during music class (see Appendix C). For four weeks, music class lessons focused on phonological and phonemic awareness skills. At Pinecrest Elementary, the literacy focused music curriculum was implemented (treatment group) with four sections of Kindergarten, while the other two elementary buildings (Kennedy Elementary and McAuliffe Elementary) continued teaching regular music lessons to their four or five sections of Kindergarten classes (the control group). At the end of the four week period, the same P.A.S.T. was administered to all Kindergarten students that did not pass the first seven subtests of the P.A.S.T. during the original baseline assessment to determine if and where there might be growth in the area of phonological awareness. In addition, for the mid-year assessment, we added subsections eight through ten, phoneme isolation of final sound, phoneme blending, and phoneme segmentation.

Curriculum Implementation

This curriculum project was implemented with four sections of Kindergarten classes at Pinecrest Elementary School in Hastings, MN. Pinecrest Elementary School is a K-4 building with 453 students, four to five sections at each grade level. The Kindergarten class at Pinecrest has 82 students; 43 boys and 39 girls. Each Kindergarten section attends music class for approximately 27 minutes every other day; thus, children in the treatment group received a total of 10 lessons during the four week music/phonological awareness curriculum implementation. The music curriculum delivered music lessons which carried out a phonics and phonemic awareness focus (see

Appendix A). Following the four week treatment, the P.A.S.T. was administered again to all Kindergarten students across the district. Students who passed any of the subtests during the fall (pre-test) were not reassessed in those subtests that they had already passed in the baseline assessment (see Appendix B). In addition, for the post-test assessment, we added subsections eight through ten, phoneme isolation of final sound, phoneme blending and phoneme segmentation. The data for the other two buildings in the district are as follows: (a) Kennedy Elementary has four sections of Kindergarten with a total of 86 students; 41 boys and 45 girls. (b) McAuliffe Elementary has five sections of Kindergarten with a total of 92 students; 49 boys and 43 girls.

Artifacts

Each lesson in this curriculum corresponded to a specific subtest of the P.A.S.T. Lessons one and two focused on the concept of word and sentence segmentation. Lessons three through five isolated different timbres of sound including our four different voices. This preparation led the children into listening for and identifying rhymes, as well as producing rhymes in lessons six-eight. Finally, in lessons nine and ten, the students were introduced to syllable segmentation and phoneme isolation of initial sounds. (See Appendix A for the detailed lessons.) The 10 music lessons targeted 7 of the 14 subsections of the P.A.S.T.

Results

The music curriculum was implemented in four sections of Kindergarten classes during January and February in the general music class for 10 lessons. The implementation of the curriculum went well. The challenge was completing the lessons

in the ten designated class periods. These lessons could easily have been extended into twelve or more classes.

Overall, the lessons had a clear learning target and supported the student's phonological awareness skills. This is evident from the data as described below. The first table analyzes the control group's number (n=163) of students passing the P.A.S.T. subtests during the fall assessment (see Table 1). As indicated on the P.A.S.T. scoring guide, a score of 5/6 is considered mastery of that particular subset. In addition, if a student missed three (3) consecutive items in one subtest, the administrator was directed to go on to the next subtest, which resulted in an X (or not passing) for that specific subsection. The pre-test was to include the first seven subtests. After the seventh subtest, if a child did not show mastery of two consecutive subtests, the administrator was to stop the assessment, which would result in an X (or not passing) for those subsections. Comparing the control group (n=163) and treatment group (n=75) we can see the baseline scores (pre-test scores) were relatively similar (see Table 1 and Table 2.)

Table 1: Pre-Test Cumulative Scores of Control Group

P.A.S.T. Subtests	Number Passing	Number Failing or Did Not Test	Percentage that Passed
Concept of Word	55	108	33.74%
Rhyme Recognition	94	69	57.67%
Rhyme Production	57	158	34.97%
Syllable Blending	148	15	90.80%
Syllable Segmentation	77	86	47.24%
Syllable Deletion	54	109	33.13%
Phoneme Isolation of Initial Sound	77	86	47.24%

Phoneme Isolation of Final Sound	17	146	10.43%
Phoneme Blending	17	146	10.43%
Phoneme Segmentation	11	152	6.75%

Table 2: Pre-Test Cumulative Scores of Treatment Group

P.A.S.T. Subtests	Number Passing	Number Failing or Did Not Test	Percentage that Passed
Concept of Word	27	48	36.00%
Rhyme Recognition	55	20	73.33%
Rhyme Production	31	44	41.33%
Syllable Blending	64	11	85.33%
Syllable Segmentation	28	47	37.33%
Syllable Deletion	25	50	33.33%
Phoneme Isolation of Initial Sound	42	33	56.00%
Phoneme Isolation of Final Sound	17	58	22.67%
Phoneme Blending	12	63	16.00%
Phoneme Segmentation	8	67	10.67%

In syllable blending and syllable segmentation, the control group's pretest scores were higher than the treatment group's pretest scores. In the subsets of rhyme recognition, rhyme production and phoneme isolation of initial and final sounds, the treatment group's pretest scores were higher than the control group's pretest scores.

During the months of September, October, November and December, all Kindergarten students received reading instruction and general music education classes. In January and February, all Kindergarten students continued to receive reading instruction but the treatment group received ten music lessons, specifically designed to support these ten subtests of the P.A.S.T. while the control group carried on with general music education lessons. The next two tables provide the cumulative data of the post-test scores which were administered from mid-January through mid-March.

Table 3: Post-Test Cumulative Scores of Control Group

P.A.S.T. Subtests	Number Passing	Number Failing or Did Not Test	Percentage that Passed
Concept of Word	141	22	86.50%
Rhyme Recognition	147	16	90.18%
Rhyme Production	113	50	69.33%
Syllable Blending	160	3	98.16%
Syllable Segmentation	139	24	85.28%
Syllable Deletion	111	52	68.10%
Phoneme Isolation of Initial Sound	151	12	92.64%
Phoneme Isolation of Final Sound	115	48	70.55%
Phoneme Blending	106	57	65.03%
Phoneme Segmentation	95	68	58.28%

Table 4: Post-Test Cumulative Scores of Treatment Group

P.A.S.T. Subtests	Number Passing	Number Failing or Did Not Test	Percentage that Passed
Concept of Word	72	3	96.00%
Rhyme Recognition	73	2	97.33%
Rhyme Production	69	6	92.00%
Syllable Blending	74	1	98.67%
Syllable Segmentation	72	3	96.00%
Syllable Deletion	63	12	84.00%
Phoneme Isolation of Initial Sound	71	4	94.67%
Phoneme Isolation of Final Sound	69	6	92.00%
Phoneme Blending	67	8	89.33%
Phoneme Segmentation	66	67	88.00%

Table 5 displays the difference between the percentage of students passing the P.A.S.T using the post-test scores of the treatment group and the post-test scores of the control group. The total change is determined from the percentage of students who received the music curriculum that passed the subsection minus the percentage of students who passed the same subtest of the P.A.S.T. but did not receive the music curriculum intervention.

Table 5: Change in Percentage of Post-Tests

P.A.S.T. Subtests	Post -test Treatment % that passed	Post-test Control % Passed	Total change in % (Post treatment-Post control)
Concept of Word	96.00%	86.50%	9.50%
Rhyme Recognition	97.33%	90.18%	7.15%
Rhyme Production	92.00%	69.33%	22.67%
Syllable Blending	98.67%	98.16%	0.51%
Syllable Segmentation	96.00%	85.28%	10.72%
Syllable Deletion	84.00%	68.10%	15.90%
Phoneme Isolation of Initial Sound	94.67%	92.64%	2.03%
Phoneme Isolation of Final Sound	92.00%	70.55%	21.45%
Phoneme Blending	89.33%	65.03%	24.30%
Phoneme Segmentation	88.00%	58.28%	29.72%

Overall, the results of the implementation of the music curriculum indicate higher growth in phonemic awareness and phonological skills in the treatment group as compared with the control group. Even when comparing the subsections in which the pre-test scores of the control group were higher than the pre-test scores of the treatment group (syllable blending and syllable segmentation), the growth of the post-test scores of the treatment group had a higher percentage of students passing than the control group. Syllable blending in the post-test scores of the treatment group had a higher percentage growth of .51%. In the subset of syllable segmentation, the post-test scores of the treatment group had a higher percentage growth of 10.72%.

Chapter IV: Reflective Essay

Introduction

The purpose of this study was to look at the impact of administering a music curriculum that supports phonological and phonemic awareness in hopes of increasing children's reading skills and improve their phonological awareness skills. This would be evident in the positive growth in their phonological awareness test scores. With higher phonological awareness skills test scores, the ultimate goal is improved phonics skills which will result in a stronger reading ability.

Conclusions

The Journey

The journey in this project began many years ago. As a child, I watched and listened to my grandfathers play their instruments which entertained us grandchildren for hours. One played the violin, or "fiddle" as he called it, and the other performed on his harmonica. Neither one of them ever had formal music lessons or could read music. Each of them simply enjoyed music and learned to play their respective instruments by ear. Fast forward twenty years, and I was taking my oldest son to his first Suzuki piano lesson. Here, at his first lesson, I was introduced to the Suzuki (2022), philosophy of the "mother-tongue approach". Children learn to play by ear, through listening, imitation, and repetition. After experiencing success at playing piano through listening, imitation, and repetition, then the notes on the staff were visually presented to my son. Ten years later, I was a peer coach and observed some amazing reading instruction. While observing these literacy lessons, I started to see some connections to the music classroom. Could music be a link to literacy? Five years ago, I took a leap of faith and submitted a proposal to our

district administrators to teach music during our summer school session. My proposal

included music lessons that supported literacy, such as rhythm (syllables) and rhyming

while also incorporating children's literature that could be integrated into the songs, in the

hopes that these lessons could support our struggling readers. Two years later, I became a

student in the Martin Luther College graduate studies program, learning about reading

and teaching reading. Through this journey, I am reminded of the Scripture passage that

says, "And we know that in all things God works for the good of those who love him,

who have been called according to his purpose" (Romans 8:28).

The Curriculum

The music curriculum created and implemented for this project was a

combination of lessons used during those summer school sessions and new lessons

created to support the individual subsections of the Phonological Awareness Skills Test

(P.A.S.T.). As indicated in Chapter 3, these lessons could have easily been spread out

over twelve or more lessons. Through these lessons, it is evident that there is a

connection between music and literacy (see Table 5). Music educators can support

literacy without taking away from their music content and music curriculum. It can be as

simple as directing the students to identify their Kindergarten high frequency words in

the text of the song we are singing that day. Something else to consider is to incorporate

more nursery rhymes into our music teaching. In Kindergarten music, our main focus is

making sure the children can demonstrate the steady beat. Every single nursery rhyme

maintains a steady beat and provides the opportunity for our youngest learners to hear

rhymes. Finally, I am excited to try to teach these lessons next fall at the beginning of the

school year, before the Kindergarten teachers administer their first P.A.S.T. assessment. I am curious to see if that makes a difference in the initial baseline data.

The Assessment

The P.A.S.T. proved to be an effective tool to determine a student's phonological awareness skills. From the concept of word to sentence segmentation to syllable segmentation to rhyming and isolating beginning and ending sounds, this test can guide instruction within the classroom.

After comparing the pre-test and post-test scores, one item that struck me right away was the huge amount of growth that happened in all of the test scores. I believe this speaks to the incredible work our Kindergarten staff is doing on a daily basis to support children's learning, especially their literacy development (see Appendix F).

The next piece that surprised me was that almost all the students were successful at syllable blending. Looking at the data, only 13 students did not demonstrate mastery in this subsection during their pre-test assessment. Of those 13 students, only three did not demonstrate mastery during their post-test assessment. Why such success in this area? This area would be interesting to follow-up on to see how the music curriculum specifically impacted this aspect of literacy and/or why the children were so successful in this subset with their pretest scores.

Finally, when comparing the post-test percentages of the treatment group students and the control group students who passed the P.A.S.T., the numbers show stronger growth in the students who received the music curriculum (see Table 5). Some questions that might arise when looking at the data are class sizes and home environment. Class sizes range from 17 to 22, which can make a huge difference. Another question or

limitation in this study is in regards to demographics and home life. The three elementary schools serve three different neighborhoods. This information was not considered when looking at the data, but it would be something to take into consideration when looking at the test scores in the future.

Recommendations

Based on the results, this music curriculum supported phonological and phonemic awareness skills. As indicated earlier, it will be interesting to see how the results change when the curriculum is implemented in the fall of the year. If these music lessons could be implemented in the fall, prior to the teacher's reading interventions, we would have a clearer understanding if there is a stronger correlation between the music lessons and the increased test scores. Another hope is that the baseline data would all contain passing scores from a majority of the children, which would hopefully result in increased phonemic awareness and phonological skills earlier in the year.

One of the limitations of this study is that the curriculum implementation did not happen until January and February, after a number of reading interventions had already been established; therefore, it is difficult to fully parse the impact of the music curriculum from other reading interventions. Another limitation is the variability across teachers' individual classroom practices and approaches to instructing, which may result in biased data. Another challenge that occurred during the testing is that the administration of the winter data was completed by one person, which resulted in the first winter P.A.S.T. being administered in mid-January while the final student wasn't assessed until mid March. This space of time between assessments could impact consistent test scores.

Finally, it is exciting to think about, or consider the potential of creating other lessons that could support the other seven subtests of the P.A.S.T. The music curriculum in this study only supports the first seven subtests of the P.A.S.T. There are seven more subtests in the P.A.S.T. that could have music lessons generated and taught in the music room, which could support the other subsections of the P.A.S.T. Music can and does have a link to literacy, when we purposefully incorporate lessons that support literacy development, specifically, phonological and phonemic awareness.

References

About the Suzuki Method. (2022). Suzuki Association of the Americas.
    https://suzukiassociation.org/about/suzuki-method/

Blevins, W. W. (2016). *A fresh look at phonics, grades K-2: Common causes of failure and 7
    ingredients for success (Corwin Literacy)* (1st ed.). Corwin.

Campbell, D.T., & Stanley, J.C. (1966). *Experimental and quasi-experimental designs for
    research.* Chicago, IL: Rand McNalley.

Cook, T.D., & Campbell, D.T. (1979). *Quasi-experimentation:Design and analysis issues for
    field settings.* Boston, MA: Houghton Mifflin.

Chard, David & Dickson, Shirley. (1999). Phonological Awareness. Intervention in School and
    Clinic - INTERVENTION SCHOOL CLINIC. 34. 261-270.
    10.1177/105345129903400502.

Choksy, L. (1987). *The kodaly method: Comprehensive music education from infant to adult* (2nd
    ed.). Prentice Hall.

Christelow, E. (1991). *Five Little Monkeys Sitting in a Tree*. Clarion Books.

Cooper, D. J., Robinson, M. D., Slansky, J. A., & Kiger, N. D. (2017). *Literacy: Helping students
    construct meaning* (10th ed.). Cengage Learning.

Corrigall, K.A., & Trainor, L. (2011). Associations Between Length of Music Training and
    Reading Skills in Children. *Music Perception: An Interdisciplinary Journal, 29*, 147-155.

Darrow, A. (2008). Music and Literacy. *General Music Today, 21*, 32 - 34.

Farris, P. J., & Werderich, D. E. (2019). *Language arts: Process, product, and assessment for
    diverse classrooms, Sixth Edition* (6th ed.). Waveland Press, Inc.

Feierabend, J. M. (2001). *Conversational solfege: Teacher's manual Level 1*. G I A Pubns.

Frazee, J., & Kreuter, K. (1997). *Discovering orff: A curriculum for music teachers (LIVRE SUR
    LA MU)* (Illustrated ed.). Schott.

Gordon, R., Shivers, C.M., Wieland, E., Kotz, S., Yoder, P., & McAuley, J.D. (2015). Musical
    rhythm discrimination explains individual differences in grammar skills in children.
    Developmental science, 18 4, 635-44 .

Hall, S. N., & Robinson, N. R. (2012). Music and Reading: Finding Connections From Within.
    General Music Today, *26*(1), 11–18. https://doi.org/10.1177/1048371311432005

Hansen, D., Bernstorf, E. D., & Stuber, G. M. (2014). *The music and literacy connection*.
    Rowman & Littlefield.

Harp, B. (1987). When the Principal Asks: "Why Are Your Kids Singing During Reading Time?".
        The Reading Teacher, 41.

Hoerber, R. G. (1984). *Concordia Self Study Bible: New International Version*. CPH.

Iwasaki, B., Rasinski, T.V., Yıldırım, K., & Zimmerman, B.S. (2013). Let's Bring Back the Magic
        of Song for Teaching Reading. *The Reading Teacher, 67*, 137-141.

Kilpatrick, D. A. (2016). *Equipped for Reading Success*. Casey & Kirsch Publishers.

Koutrakos, P. A. (2018). *Word study that sticks: Best practices, K-6 (Corwin Literacy)* (First ed.).
        Corwin.

Kraus, N., & Chandrasekaran, B. (2010). Music training for the development of auditory skills.
        Nature Reviews Neuroscience, 11, 599-605.

Moreno, S., Friesen, D.C., & Bialystok, E. (2011). Effect of Music Training on Promoting Pre
        Literacy Skills: Preliminary Causal Evidence. *Music Perception: An Interdisciplinary
        Journal, 29*, 165-172.

National Reading Panel. (2000). *Report of the National Reading Panel: Teaching children to
        read.* Washington DC: National Institute of Health.

Swierk, K.G. (2018). Correlation Between Music and Preliteracy Skills in Preschool Age
        Children. *Undergraduate Research Journal, 4*, 5.

Tsang, C., & Conrad, N.J. (2011). Music Training and Reading Readiness. *Music Perception: An
        Interdisciplinary Journal, 29*, 157-163.

Wong, M. (2015, May 29). Brain wave study shows how different teaching methods affect
        reading development. *Medical Xpress*. Retrieved from
        medicalxpress.com/news/2015-05-brain-methods-affect.html

What are Phonological Awareness and Phonemic Awareness? (2020, June 22).
Https://Heggerty.Org/Blog/Phonological-Awareness-and-Phonemic-Awareness/.
https://heggerty.org/blog/phonological-awareness-and-phonemic-awareness/

Appendix A: Curriculum

Music Lesson Curriculum

Lesson 1: Concept of Spoken Word (Sentence Segmentation)

Learning Target: We can identify different words.
Process: T. presents a story about taking children on a trip. Using picture puppets to represent the T.'s children, the T. introduces the students to the "copy cat" game.

> T: Over the break, I took my children on a trip to Grandma's house. This is a picture of my daughter, Miranda and my son Sam. Give me a thumbs up if any of you were able to go visit Grandma over the break. As you all know, it takes a LONG time to get to Grandma's house, so my daughter Miranda said to my son Sam, "Hey Sam-it's a LONG way to Grandma's house. Do you want to play a game?"
>
> Sam: Sure what do you want to play?.
>
> Miranda: Sure what do you want to play?
>
> Sam: No really. It's a LONG way to Grandma's house, what game do you want to play?
>
> Miranda: No really. It's a LONG way to Grandma's house, what game do you want to play?
>
> Sam turned and took one long look at Miranda and said: Are you playing the copycat game?
>
> Miranda: Are you playing the copycat game?
>
> Sam: Ok. Knock it off.
>
> Miranda: Ok. Knock it off.
>
> Sam: I mean it. Stop it!
>
> Miranda: I mean it. Stop it!
>
> The next thing I hear is
>
> Sam: Mom! Miranda won't stop copying me.
>
> Miranda: Mom! Miranda won't stop copying me.
>
> As the class erupts into giggles, the T. proceeds to tell them that in the music room, we get to play the copycat game every time we come into music class.   Are you ready to play?
>
> T: 1-2-3-4!
>
> S: 1-2-3-4!
>
> T: Kindergarten just came through the door.
>
> S: Kindergarten just came through the door.
>
> T: 5-6-7-8!
>
> S: 5-6-7-8!

T: Look at us, we're really great!

S: Look at us, we're really great!

T: Woo-hoo! (swings arm above head as if throwing a lasso with a high voice for
        vocal exploration.)

S: Woo-hoo!

T: Jump! Jump! Jump! Jump! (while t. Jumps for each word)

S: Jump! Jump! Jump! Jump! (while s. Jump for each word)

T: Running running running stop (While t. Runs in place and then stops)

S: Running running running stop (While t. Runs in place and then stops)

As the teacher repeats the exact same sequence of words, this time the teacher
        adds CLAPPING on each number to begin to differentiate syllables and
        words.

On the third repetition, the teacher removes the words and only claps rhythms, or
        the syllables of the numbers.

T: Even though we didn't say the numbers, could you still hear the numbers in
        your head? Let's check to see if our hands matched our numbers? (T.
        claps "1-2-3-4" but only mouths the words) S. clap back "1-2-3-4" and only
        mouth the words.

T: How many numbers did we have there?

S: 4

T: Exactly! You were able to identify how many numbers (claps) in that pattern.

If time: Teach the Copy Cat Song- *Hello There!*

https://www.youtube.com/watch?v=SRA0JLIzGTE

Lesson 2: Concept of Spoken Word (Sentence Segmentation)

Learning Target: We can identify different words.
Process: Warm-ups-Copy Cats (review what we learned the day before and continue
preparation for syllabic work.)

Review: *Hello There*

New: *My Hat it Has Three Corners* (German folk song with Actions to isolate
individual words)

My hat it has three corners.
Three corners has my hat.
And had it not three corners.
It would not be my hat.

T: Join me in the actions of this song
        For the word 'my' bring hand to chest

For the word 'hat' use both hands to make a triangle shape above your head.

For the word 'three' show three fingers in your hand.

For the word 'corners' point touch your elbow.

T: What was the action that I did for the word hat? (show a word card with the word 'hat' and a picture of a hat) How about three? (point to a word card with the word three and a picture of the number three) Corners? (point to a word card with the word 'corner' and a picture of a corner) What is a corner? Can you find any other 'corners' in this room? (desk, wall, riser, sink, etc.) We can't forget about "my"? (point to a word card with the word 'my' and a picture of a child pointing to self)

T: Now let's practice.

1) T. models actions while asking the children to "Show me the actions for 'corner'. Now 'hat'. Corner. Hat. Corner. Hat. Three. My. Corner. Hat."

2) T. points to the word cards while asking the children to show the actions.

Sing the entire song with all actions.

Sing song again with all actions, but this time, remain silent on 'hat'. (inner hearing/word isolation)

Sing song again with all actions, and this time remain silent on 'hat' and 'three'.

Sing song again with all actions, and this time remain silent on 'hat', 'three' and 'corners'.

Sing song again with all actions, and this time remain silent on 'hat', 'three', 'corners' and 'my'.

Sing song again with all actions and all words.

If time: have children create a three cornered hat out of paper or add percussion instruments on the words 'hat', 'three', 'corners', 'my'

Closure: Today we reviewed our copy cats and discovered four more different words.

Lesson 3: Sound (Timbre) Recognition

Learning Target: We can identify different sounds of instruments.
Process: Warm-ups-Copy Cats (review what we learned the day before and continue preparation for syllabic work.)

Review: *My Hat it Has Three Corners*

- Review with actions
- Using infinite cloner in smart notebook, put word cards (my, three, corners, hat) in the correct order of the song.

T. presents Judy Clock and a mouse puppet and proceeds to share the nursery rhyme as follows:

Hickory Dickory Dock
The mouse ran up the clock.
The clock struck one
The mouse ran down.
Hickory Dickory Dock.

T. asks students to join in as they feel comfortable.

T. brings out a triangle and has students identify the shape.

T. presents the mallet and plays the triangle to demonstrate the sound; playing inside the triangle, like a dinner bell and outside the triangle with a strike.

T. has students identify which word she is playing the triangle on.

T. says the poem and adds the triangle on the word/number "one".

S. identify the triangle being played on the word/number "one".

S. practices with an "air triangle" while T. says the nursery rhyme.

T. has a student model what it looks like to come and get a triangle. (walking feet, not playing it and returning to the seat and placing the triangle on the floor).

T. shares the rule "If we play, before we say, the instrument gets taken away"

T. has the students copy her playing on the triangle using the same patterns from the copycat game; striking the triangle four times while saying "1-2-3-4". T. then proceeds to demonstrate placing the mallet inside the triangle and rolling the mallet around the inside.

T. has students play on the word/number "one" on *Hickory Dickory Dock.*

(*I would split this lesson into four different days, but because all of this demonstrates sound/timbre recognition, I have combined it all into one lesson here*).

T. brings out the gathering drum and asks students to identify the shape.

T. presents the new mallet and its two ends; the squishy end and the hard end.

T. asks students which end we should use to play the gathering drum.

S. identifies that the squishy side works best as the hard end could place a hole in the drum.

T. demonstrates the tick-tock of the clock on the gathering drum (the

steady beat).

T. looks for students that are playing the steady beat on their laps to join her at the gathering drum.

After the student has had their turn at the gathering drum, they give their mallets to another student that hasn't had a turn yet.

T: Notice the sound of the gathering drum compared to the triangle. Is it the same or different? How? Why?

T. presents the step-bells and has the students identify the shape of the bars as rectangles.

T. presents the new mallet and its two ends; the ball side and the stick side.

T. asks the students which end we should use to play the step bells.

S. identifies the ball side to get the best sound.

T. asks the students to identify which words of the nursery rhyme we add to the step-bell part.

S. identify "up" and "down".

S. practices with an "air step bell and mallet" .

T. has students join her in playing the step bells.

After the student has had their turn at the step-bells, the student gives his/her mallet to another student that hasn't had a turn yet.

T: Notice the sound of the step bells compared to the gathering drum. Is it the same or different? How? Why? Now think about the sound of the step bells and the triangle? Is it the same or different? How? Why?

During the final phase of this lesson, we will put all the instruments together. There is a triangle station to play on "one". There is a step bell station to play on "up" and "down". There is a gathering drum station to play the "tick-tock" or steady beat. There is a fourth station where students have a microphone and they speak the words of the nursery rhyme. All students will rotate through each station.

After all students have had a turn at each station, the children will stay in their small group for a short discussion.

T: In your small group, talk about how the instruments sounded the same and how or why they sounded different. (Listen for answers to determine understanding of the different sounds).

Closure: T: I heard many of you sharing how each of the instruments had different sounds. Listen today for the different sounds you hear in your classroom. Check tonight for some different sounds you hear in your home.

Lesson 4: Sound (Timbre) Recognition Lesson 2

Learning Target: We can identify different sounds of instruments.
Process: Warm-ups-Copy Cats (review what we learned the day before and continue preparation for syllabic work.)

> Review: *Hickory Dickory Dock* to review the different instruments.
> T: Today we have some new instruments and sounds to discover. Present the woodblock. Model how to play the woodblock; how to hold it and how to use the mallet.
> T: Can anyone figure out what this instrument is made out of? (wood)
> > Does it sound the same or different from the instruments we played yesterday? (different)
> > Teacher plays the steady beat on the woodblock while introducing the English folk song, *Tinker Tailor*.
> > As the teacher observes students who have the steady beat, she offers them a woodblock to play to accompany the song. After the student plays, he/she hands off her instrument to another student. After all the students have a turn playing the woodblock, the teacher presents the maraca/shaker.
> T: Does this instrument sound the same or different compared to the woodblock? (different) How? Why?
> > Teacher plays the shaker at the **end** of the song for a count of four.
> > Students pick up their "air maraca" and practice playing it at the **end** of the song.
> > Student models how to pick up a maraca and return to his/her seat without playing the maraca. The rest of the class follows.

Closure: T: You all have heard, played and seen different instruments. Are you ready for the super challenge? You sing the song and at the end I will play one of the instruments, but you need to figure out which instrument it is JUST BY LISTENING. (play the game several times and next time, have students play the mystery instrument for the class to guess).

Tinker, Tailor

Tin - ker,   tai - lor,   sol - dier,   sai - lor,   rich man,

poor   man,   beg - gar man,   thief!

Lesson 5: Sound (Vocal Timbre) Recognition

Learning Target: We can identify the sounds of our different voices.
Process: Warm-ups: Copy Cats (review what we learned and ask students to listen for our different voices in our copy cat patterns.)

       T: I talk like this.
       S: I talk like this.
       T: This is my speaking voice.
       S: This is my speaking voice.
       T: I whisper like this.
       S: I whisper like this.
       T: This is my whisper voice.
       S: This is my whisper voice.
       T: I sing like this.
       S: I sing like this.
       T: This is my singing voice. (sung on sol and mi)
       S: This is my singing voice.
       T: I shout like this!
       S: I shout like this!

       At this point, I discuss inside shouting voices vs. outside shouting voices and we
          all agree that we need to use inside shouting voices in school because
          others are learning.

       T: Show pictures of voice types on smartboard. Have students identify which one
          is singing, talking, shouting, and whispering.
          On the next smartboard screen, have students identify where and when
          they would use each of these voices. In the school hallway? (whisper) On
          a rollercoaster? (shouting) In the music room (singing) On the
          playground? (shouting) On the phone? (talking) etc.

       T: So we know where to use our different voices, but can you hear them in a new
          poem? T. shares the poem "Five Little Monkeys" using monkey finger
          puppets and a stuffed alligator.

              Five little monkeys swinging in a tree (talking voice)
              Whee! Whee! (singing voice)
              Teasing Mr. Alligator (talking voice)
              "You can't catch me!" (singing voice)
              Along came Mr. Alligator quiet as he could be (whisper)
              And SNAP! (shout) that monkey right out of the tree (talking
              voice)

          Students identify which voice (s) they heard during the poem and on
          which parts of the poem. *(Begin with identifying the text that matches the*

whisper voice, then the shouting voice, followed by the text that matches the singing voice).
Students present the poem using their own fingerplay, demonstrating all four voice types.

Closure: Yesterday we discovered the sounds of different instruments. Today we discovered the sounds of our voices. I challenge you to share with your parents tonight your four different voices and check if your parents have them too.

Lesson 6: Rhyme Recognition

Learning Target: We can identify words that sound the same at the end or rhyme.
Process: Warm-ups: Copy Cats (review what we have learned, including voice types and include vocal exploration)

Review: *Hickory Dickory Dock*

T. I noticed that in Hickory Dickory dock, that dock and clock have the same sounds at the end of their word. When we have words that have the same ending sounds, we say those words rhyme. Pat the steady beat on your legs and listen for words that rhyme or have the same ending sounds in this new poem.

> 1-2 Buckle my shoe.
> 3-4 Shut the door.
> 5-6 Pick up sticks.
> 7-8 Lay them straight.
> 9-10 Sing it again!

T: Did you hear any words that rhymed? Any words that had the same sounds at the end of them? Listen again but this time, say the numbers with me while you pat the beat.

> **1-2** Buckle my shoe.
> **3-4** Shut the door.
> **5-6** Pick up sticks.
> **7-8** Lay them straight.
> **9-10** Sing it again!

T: Let's try to figure out which word rhymes with two. Look at my mouth as I say two. Was there another word that made my mouth look the same? (T. repeats 1-2 buckle my shoe) Yes! Shoe rhymes with two. Turn and share with your neighbor the word that rhymes with four? (door) Look at your neighbor's mouth. Do both words look and sound the same at the end of them? Turn and check with your other neighbor to find the rhyming word

with six.(sticks). Look at their mouths. Does it make the same shape and sounds at the end of both six and sticks? What word rhymes with eight? (gate!) 10? (again!) This time let's play the numbers on the hand drums and clap the rhyming words. (Have a student model picking up a hand drum and returning to his/her seat without playing it. Then have the entire class get a hand drum).

T: Remember how we heard the difference in sound between the drum, triangle, woodblock and shakers? Well even the drum itself can make different sounds. Watch as I rub the drum with my hand-now you try. Let's switch to our fingernails. (sounds like rain) We can also tap it on the side and move to the top. Let's try some copy cats on the drum. (tap a few patterns for students to copy.

Now let's play just the numbers of "1-2 Buckle my shoe" and clap the words.

Closure: Today we discovered words that rhyme. Be listening for more rhyming words today and be ready to share them with me when you come back to class next time.

Lesson 7: Rhyme Recognition Lesson 2

Learning Target: We can identify words that rhyme. (sound the same at the end).
Process: Warm-ups: Copy Cats (review what we have learned, including voice types vocal exploration and rhyming patterns such as "steady Eddy" or "walking talking")

Review: *1-2 Buckle My Shoe*
   - Pat beat on numbers and clap on words
   - Add rhythm sticks on words

New: *Starlight Starbright*
T: Pat the steady beat while I sing a new song.

This time, listen for words that rhyme. Remember words that rhyme are words that have the same sound at the end. (light, bright, night, might)

Now, clap on each of these rhyming words while I sing the song. Watch how I change the clap. (T. Transfers clap to a glissando on the soprano glockenspiels. Model how to use the mallet by playing gently over the bars.)

These instruments are called glockenspiels. They come from Germany. Glockenspiel in the German language means bell play or little bells. Do you hear the bell sounds? Show me your "air glockenspiels" (T. sings song again while students "air play" on

the rhyming words).

 I noticed ____(student's name)_____ played their glockenspiel on each rhyming word. Can you come up and join me on the glockenspiels. Let's look for more children that have those rhyming words. (T. and students hand off mallets after having a turn playing).

I noticed some children already singing the song with me too.

If time: Add finger cymbals on the word 'wish' to focus on the /w/ sound and practice isolating words. You could also add a bordune on the steady beat (C and G). Play a circle game with a star wand and at the end of the song add "What do you wish for?" on s-m-l-s-m. Have the students share their wishes.

Closure: Today we identified rhyming words in a brand new song and were able to transfer those rhyming words to an instrument. Tomorrow we will begin to create our own rhyming words.

Star Light, Star Bright

Folk song

Star light, star bright, first star I   see to-night, Wish I may, wish I might, have the wish I   wish to-night.
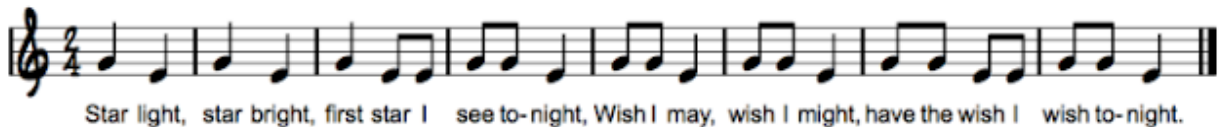
Lesson 8: Rhyme Production

Learning Target: We can create our own words that rhyme. (sound the same at the end)

Process: Warm-ups: Copy Cats (review what we have learned, including voice types vocal exploration and rhyming patterns such as "steady Eddy" or "walking talking")

Review: *Starlight Star Bright*
- Pat beat while singing the song.
- Clap on rhyming words while singing the song.
- Snap on the word 'wish' while singing the song.

T: Yesterday we found all the rhyming words in Starlight, Starbright. Can you think of any other words that rhyme with light? (kite, bite, sight, right, etc.) How do we know these words are rhyming? (because the ending sounds of each word is the same).

Review: *Hickory Dickory Dock*

● Pat beat while saying the poem

T: Let's look at the clock. There are more numbers here than just one o'clock. What if the mouse ran up the clock when the clock struck two? What could we come up with that rhymes with the word two'? (blue, shoe, new, etc.)

We could change the poem to the following:

Hickory Dickory Dock
The mouse ran up the clock
The clock struck two
He lost his shoe
Hickory Dickory Dock

T: What if the clock struck three? What are some rhyming words that rhyme with the word 'three'? (bee, knee, see, me, etc). Let's choose the word 'knee'. Can anyone come up with something about the mouse that includes the word 'knee'? (He fell on his knee, he bumped his knee, the bee stung his knee, etc.)

Let's change the poem again:

Hickory Dickory Dock
The mouse ran up the clock
The clock struck three
A bee stung his knee
Hickory Dickory Dock.

T: Work with your neighbor now and come up with some rhyming words for the number I give you. After creating at least FOUR rhyming words that match your number, try to create something about the mouse that would include one of your rhyming words. Be ready to share your ideas with me and the class.

Closure: Today we worked on rhyming and creating our own rhyming words. Next time we will share our rhymes and new versions of Hickory Dickory Dock with the class.

Lesson 9: Rhyme Production and Syllable Segmentation

Learning Target: We can create our own words that rhyme. (sound the same at the end)
We can identify the parts or chunks of words. (syllables)
Process: Warm-ups: Copy Cats (review what we have learned, including voice types vocal exploration and rhyming patterns such as "steady Eddy" or "walking talking")
Review: *Hickory Dickory Dock*

● Pat the beat while saying the words to the poem.

- Allow time for students to practice their rhyme creation of Hickory Dickory Dock.
- Students present their creations to the class.

Review: *Tinker Tailor*

- Pat the beat while singing the song.
- Clap the rhythm (how the words go) while singing the song.
- Place the beat in your feet while sitting in your spot and singing the song.
- Clap how the words go while singing the song..
- Place the beat in your feet while standing up in your spot and singing the song.
- Stand and clap how the words go while singing the song.
- Place the beat in your feet while moving the room and singing the song.
- Freeze your feet and clap how the words go while singing the song.

T: As you were singing the song, did you notice, were your feet and hands doing the same thing? Let's check. (Have students move to the beat while singing the song. Have students freeze and clap the rhythm while singing the song.) Were they the same? (no). In music, the beat is the steady underlying pulse of the music. Similar to your heart beat. It is always beating steadily. In gym class, it beats fast, but it still beats steady. When you are sleeping, your heart beats slow, but it still beats steady. That is why we call it the steady beat. The words are different and we call that the rhythm. The rhythm matches the chunks or parts of the words. Let's try finding the beat and the rhythm in *1-2 Buckle My Shoe*. (T. displays a paper plate with the word beat and a heart written on one side of the plate and the word rhythm written on the other side of the plate)

- Pat beat while saying the words. (show the beat side of the plate)
- Clap the rhythm while saying the words. (show the rhythm side of the plate)
- Place the beat in your feet while sitting in your spot and saying the words. (show the beat side of the plate)
- Clap how the words go while sitting in your spot and saying the words. (show the rhythm side of the plate)
- Place the beat in your feet while standing up in your pot

and saying the words. (show the beat side of the plate)
- Stand and clap how the words go while saying the words (show the rhythm side of the plate)
- Place the beat in your feet while moving the room and saying the words. (show the beat side of the plate)
- Freeze your feet and clap how the words go while saying the words to *1-2 Buckle My Shoe.* (show the rhythm side of the plate).

T: Looking up here at the board, I have a T-chart. On the one side I have the number 1, on the other side I have the number 2. Looking at the picture words below the chart, I see a bunch of words and pictures from our poem *1-2 Buckle My Shoe.* Let's clap the rhythm of each of these and discover if they have one chunk or two chunks. *(Check with classroom teachers to determine the vocabulary they use to describe syllables, so you are using the same vocabulary for the children).* Clap shoe. (shoe) Does that have one clap or two claps? (one) So I draw a line from the shoe to the "1" side of the t-chart. Now let's look at the buckle. Clap buckle. (buck-le) How many claps does buckle have? (two) That means I have to draw a line from the buckle to the "2" side of the t-chart. Now I see a door. Clap door. (door) How many claps does the word door have? (one) _____ please come up and show us where I need to draw my line for door. *(Continue to go through all the pictures to determine the syllables for each picture).*

Closure: Today we were able to present our own rhyme creations to Hickory Dickory Dock and then discovered the difference between the beat and rhythm. Tomorrow, we will identify some more words to decide if they have two syllables or one syllable-but we will do it on our own.

Lesson 10: Syllable Segmentation and Phoneme Isolation of Initial Sounds

Learning Target: We can identify the parts or chunks of words. (syllables)
                                   We can identify the beginning sounds and letters of our names.
Process: Warm-ups: Copy Cats (review what we have learned, including voice types vocal exploration and rhyming patterns such as "steady Eddy" or "walking talking" and "beat beat steady beat" and "words are different" and "rhythms how the words go")
          Review: *Starlight Starbright*
- Pat the beat while singing the song

- Clap the rhythm while singing the song.
- Review that they are different
- Distribute individual sheets (and clipboards and pencils) that have the t-chart on them with new picture/words. (star, moon, sun, planet, rocket, earth, diamond)
- Review how to determine if the word has one chunk or two by clapping it and then drawing the line from the picture to its corresponding column.

New: *Mrs. Macaroni*

- T. models galloping around the class circle on the white stick horse while singing the words of the song. At the end of the phrase "This is _____special day", T. freezes. The person that the T. stopped by then says their name for all to hear, **WAITS** for all to try to identify the beginning sound of the name, then the student shares orally their answer to the beginning sound of their name. The rest of the class gives a thumbs up or thumbs down to agree or disagree with the student's identification of the first sound in their name. Observe who agrees and disagrees while scoring the individuals on the seating chart or table provided.

Name	Yes/No (notes)
	Y=Yes: identified the ending sound of their name
	N=No: did not identify the ending sound of their name.

Mrs. Macaroni

Folk song

Here comes Mrs._ Ma-ca-ro-ni   Ri-ding on her snow white po-ny   In the land of   glo-ry, glo-ry,

This   is   A-dam's* spe-cial   day.   A,   A,   A   for   A-dam,   A,   A,

bethsnotes.com

A   for   A-dam,   A,   A,   A   for   A-dam,   This   is   A-dam's* spe-cial   day.

*Insert child's name (and later, sing the first letter of that child's name)

Closure: Today we reviewed the difference between the beat and the rhythm and were able to complete our own worksheet on the parts of words or syllables. In addition, we were able to identify the first sound and its matching letter our first names. Check tonight to see if you can figure out the sound and first letter of your mom and dad's first names.

Appendix B: Assessment Instruments

P.A.S.T Assessment Recording and Scoring Guide

ADMINISTERING:
- See Task/Scoring Sheet for specific directions.
- You may reteach the directions/examples as necessary.

  Kindergarten and Grade 1: all students
  - Begin administering the first subtest. You may stop administering a subtest if the child misses three (3) consecutive items. Go to the next subtest. You must administer the first seven subtests. After administering the first seven subtests, you may stop the assessment if a child does not show mastery of two (2) consecutive subtests.

  Grade 2: some students (not yet reading at grade level)
  - Begin administering the seventh subtest: phoneme isolation of initial sound. You may stop administering a subtest if the child misses three (3) consecutive items. Go to the next subtest: phoneme isolation of final sound. You may stop administering a subtest if the child misses three (3) consecutive items. Continue administration of subsets until you finish the assessment or the child does not show mastery of two (2) consecutive subsets.

  Grade 3 and above: few students (not yet reading at GR level J)
  - Begin administering the seventh subtest: phoneme isolation of initial sound. You may stop administering a subtest if the child misses three (3) consecutive items. Go to the next subtest: phoneme isolation of final sound. You may stop administering a subtest if the child misses three (3) consecutive items. Continue administration of subsets until you finish the assessment or the child does not show mastery of two (2) consecutive subsets.

- The next time you assess, begin with the last skill in which the child had difficulty. You will want to assess throughout the year to monitor progress and guide your instruction.
- At the end of the year, begin with the last skill in which the child had difficulty and continue until you have finished all the tests for that grade level.

RECORDING AND SCORING:
- If the student's response is correct, record a checkmark (✓) on the line.
- If the student makes no response or an incorrect response, leave the line blank.
  - Note how long a student takes to respond. Typically, wait 2-3 seconds before moving on, and do not give the correct response.
- Record ongoing and end of the year assessments on the same form and note the date.
- Total up the number of checkmarks(✓) in each section.
  - 5/6 is considered mastery.

Phonological Awareness Skills Test (P.A.S.T)

Name_____ Date_____

Teacher_____ Grade_____

Concept of Spoken Word (Sentence Segmentation)

Say: We are going to play a game with words and colored chips. (Say the sentence *Joey likes cake*. As you say each word of the sentence, push a colored chip forward-one chip per word.)

Now it's your turn. I'll say the sentence and you'll repeat the sentence and push up a chip as you say each word. Say-*Joey likes cake*. (Once the student understands the skill, read each sentence to the student and ask him/her to repeat the sentence while pushing up one chip for each word. Put a check in the box to the right of the sentence if the child does it correctly.)

1. Tom ran home. (3)	☐	☐	☐	☐	☐	☐
2. I have two pets. (4)	☐	☐	☐	☐	☐	☐
3. Did you eat lunch? (4)	☐	☐	☐	☐	☐	☐
4. What are you doing? (4)	☐	☐	☐	☐	☐	☐
5. Terry loves to play soccer. (5)	☐	☐	☐	☐	☐	☐
6. Yesterday it rained. (3)	☐	☐	☐	☐	☐	☐
Mastery 5/6	/6	/6	/6	/6	/6	/6
Date:	____	____	____	____	____	____

Rhyme Recognition

Say: Two words that sound the same at the end are rhyming words, such as hat and *sat*. Do *sit* and *bit* rhyme? (Yes) Do *chair* and *boy* rhyme? (No) (If the child appears to grasp the skill, do the same for the following pairs of words. Put a check in the box to the right of the pair if the child answers correctly.)

1. bed---fed (yes)	☐	☐	☐	☐	☐	☐
2. top---hop (yes)	☐	☐	☐	☐	☐	☐
3. run---soap (no)	☐	☐	☐	☐	☐	☐
4. hand---sand (yes)	☐	☐	☐	☐	☐	☐
5. funny---bunny (yes)	☐	☐	☐	☐	☐	☐
6. girl---giant (no)	☐	☐	☐	☐	☐	☐
Mastery 5/6	/6	/6	/6	/6	/6	/6
Date:	____	____	____	____	____	____

1

Phonological Awareness Skills Test (P.A.S.T) continued

Rhyme Production

Say: I'm going to say a word and I want you to tell me a word that rhymes with it. (The answer can be a real word or a nonsense word.) Can you tell me a word that rhymes with *sit*? (Possible answers may include: *bit, fit, mit, pit, dit, jit,* etc. Put a check in the box to the right if the child answers correctly. Write down his/her answers on the lines provided.

1. pan _____	☐	☐	☐	☐	☐	☐
2. cake_____	☐	☐	☐	☐	☐	☐
3. hop_____	☐	☐	☐	☐	☐	☐
4. see_____	☐	☐	☐	☐	☐	☐
5. dark_____	☐	☐	☐	☐	☐	☐
6. candy_____	☐	☐	☐	☐	☐	☐
Mastery 5/6	/6	/6	/6	/6	/6	/6
Date:						

Syllable Blending

Say: I'm going to say a word in a funny way. Your job is to put the parts together and say the whole word. (Give the following examples, pausing between syllables and have the student say the words normally.)
Say: *Out-side (outside), ro-bot (robot)* (If the child grasps the skill, do the following words and put a check in the box if the child says them correctly.)

1. pen-cil	☐	☐	☐	☐	☐	☐
2. rain-bow	☐	☐	☐	☐	☐	☐
3. pop-corn	☐	☐	☐	☐	☐	☐
4. black-board	☐	☐	☐	☐	☐	☐
5. side-walk	☐	☐	☐	☐	☐	☐
6. pa-per	☐	☐	☐	☐	☐	☐
Mastery 5/6	/6	/6	/6	/6	/6	/6
Date:						

2

Phonological Awareness Skills Test (P.A.S.T) continued

Syllable Segmentation

Say: I'm going to say a word and then break it into parts, or syllables. Say: *rainbow* (Say it normally and clap out the two parts in rainbow while saying each part.) Then say: *Rainbow* (This time, push up a chip as you say each syllable.)

Say: I'm going to say some more words and I want you to push up a chip as you say each syllable. (It is not necessary to clap the syllables again unless the skill needs to be retaught. Put a check in the box to the right if the child does it correctly.)

1. sometime (2)	☐	☐	☐	☐	☐	☐
2. basket (2)	☐	☐	☐	☐	☐	☐
3. bedroom (2)	☐	☐	☐	☐	☐	☐
4. fantastic (3)	☐	☐	☐	☐	☐	☐
5. maybe (2)	☐	☐	☐	☐	☐	☐
6. helicopter (4)	☐	☐	☐	☐	☐	☐
Mastery 5/6	/6	/6	/6	/6	/6	/6
Date:	___	___	___	___	___	___

Syllable Deletion

Say: We are going to play a game with words where one part of the word is left out. For example, *sunshine* without the *shine* is *sun*. Now you say *airline* without *air*. (The child should say *line*.) Now we will do some more words like this (Using the words below, tell the child the syllable to leave off. Use this sentence structure: "Say *downtown* without *down*.", "Say *inside* without *in*." etc. (Put a check in the box to the right if the student deletes the correct syllable.)

1. (down)town	town	☐	☐	☐	☐	☐	☐
2. (in)side	side	☐	☐	☐	☐	☐	☐
3. for(get)	for	☐	☐	☐	☐	☐	☐
4. bas(ket)	bas	☐	☐	☐	☐	☐	☐
5. af(ter)	af	☐	☐	☐	☐	☐	☐
6. (skate)board	board	☐	☐	☐	☐	☐	☐
Mastery 5/6		/6	/6	/6	/6	/6	/6
Date:		___	___	___	___	___	___

3

Phonological Awareness Skills Test (P.A.S.T) continued

Phoneme Isolation of Initial Sounds

Say: I'm going to say a word and I want you to tell me the **first** sound of the word I say. Are you ready? What is the first sound in the word *top*? (The child should say /t/. Do the same with the words below and put a check in the box to the right if the child says the first sound correctly.)

1. big /b/	☐	☐	☐	☐	☐	☐
2. land /l/	☐	☐	☐	☐	☐	☐
3. farm /f/	☐	☐	☐	☐	☐	☐
4. apple /a/	☐	☐	☐	☐	☐	☐
5. desk /d/	☐	☐	☐	☐	☐	☐
6. ship /sh/	☐	☐	☐	☐	☐	☐
Mastery 5/6	/6	/6	/6	/6	/6	/6
Date:	___	___	___	___	___	___

Phoneme Isolation of Final Sounds

Say: I'm going to say a word and I want you to tell me the **last** sound of the word I say. Are you ready? What is the last sound in the word *pot*? (The child should say /t/. Do the same for the words below and put a check in the box to the right if the child says the last sound correctly.)

1. pick /k/	☐	☐	☐	☐	☐	☐
2. ran /n/	☐	☐	☐	☐	☐	☐
3. fill /l/	☐	☐	☐	☐	☐	☐
4. bug /g/	☐	☐	☐	☐	☐	☐
5. same /m/	☐	☐	☐	☐	☐	☐
6. tooth /th/	☐	☐	☐	☐	☐	☐
Mastery 5/6	/6	/6	/6	/6	/6	/6
Date:	___	___	___	___	___	___

4

Phonological Awareness Skills Test (P.A.S.T) continued

Phoneme Blending

Say: I am going to separate all the sounds in a word and I want you to say the whole word. For example, if I say /s/ /i/ /t/ the whole word is _____ . (The child should say *sit*.) Let's do another example. If I say /s/ /t/ /o/ /p/, the whole word is _____ . (The child should say *stop*.) Let's do some more words just like this. (Read each word segmented. Put a check in the box to the right if the child says the whole word correctly.)

1. /m/ /e/	me	☐	☐	☐	☐	☐	☐
2. /b/ /e/ /d/	bed	☐	☐	☐	☐	☐	☐
3. /h/ /a/ /t/	hat	☐	☐	☐	☐	☐	☐
4. /m/ /u/ /s/ /t/	must	☐	☐	☐	☐	☐	☐
5. /sh/ /o/ /p/	shop	☐	☐	☐	☐	☐	☐
6. /p/ /l/ /a/ /n/ /t/	plant	☐	☐	☐	☐	☐	☐
Mastery 5/6		/6	/6	/6	/6	/6	/6
Date:							

Phoneme Segmentation

Say: We're going to play a game with all the sounds in the words. (Show the child the three sounds in *dime*. Push a chip up for each sound you say---- /d/ /i/ /m/.)

Say: Now you try it. Push up a chip as you say each sound in the word *hat*. (The child should push up a chip while saying each sound in the word hat--- /h/ /a/ /t/---3 chips.) Now let's do some more words just like this. I'll say some more words and I want you to push up a chip for each sound in the words I say. Are you ready? (Read each of the following words one at a time. The child should push up a chip for each sound in each word. Put a check in the box to the right if he/she does it correctly.)

1. in (2)	☐	☐	☐	☐	☐	☐
2. at (2)	☐	☐	☐	☐	☐	☐
3. name (3)	☐	☐	☐	☐	☐	☐
4. ship (3)	☐	☐	☐	☐	☐	☐
5. sock (3)	☐	☐	☐	☐	☐	☐
6. chin (3)	☐	☐	☐	☐	☐	☐
Mastery 5/6	/6	/6	/6	/6	/6	/6
Date:						

5

Phonological Awareness Skills Test (P.A.S.T) continued

Phoneme Deletion of Initial Sounds

Say: We're going to play a word game where the beginning sound of a word is left off. For example, *bed* without /b/ is *ed*. Now you try. What is *can* without /c/? (The child should say *an*.)

Say: Let's do some more words just like this. (Read each word and tell the child the beginning sound to leave off. Use this sentence pattern… What is *sun* without /s/? What is *pig* without /p/?, etc. Put a check in the box to the right if the child answers correctly.)

1. (s)un	un	☐	☐	☐	☐	☐	☐
2. (p)ig	ig	☐	☐	☐	☐	☐	☐
3. (m)op	op	☐	☐	☐	☐	☐	☐
4. (n)eck	eck	☐	☐	☐	☐	☐	☐
5. (b)at	at	☐	☐	☐	☐	☐	☐
6. (t)ape	ape	☐	☐	☐	☐	☐	☐
Mastery 5/6		/6	/6	/6	/6	/6	/6
Date:		____	____	____	____	____	____

Phoneme Deletion of Final Sounds

Say: In our next word game, the final sound of a word is left off. For example, *goat* without /t/ is *go*. What is *meat* without /t/? (The child should say *me*.)

Say: Now let's do some more words just like this. (Read each word and tell the child the ending sound to leave off. Use this sentence pattern… What is *rose* without /s/? What is *train* without /n/?, etc. Put a check in the box to the right if the child answers correctly.)

1. ro /s/ e	row	☐	☐	☐	☐	☐	☐
2. trai /n/	tray	☐	☐	☐	☐	☐	☐
3. grou /p/	grew	☐	☐	☐	☐	☐	☐
4. sea /t	sea	☐	☐	☐	☐	☐	☐
5. ba /k/ e	bay	☐	☐	☐	☐	☐	☐
6. in /ch/	in	☐	☐	☐	☐	☐	☐
Mastery 5/6		/6	/6	/6	/6	/6	/6
Date:		____	____	____	____	____	____

6

Phonological Awareness Skills Test (P.A.S.T) continued

Phoneme Deletion of First Sound in Consonant Blend

Say: You're going to make new words by taking the first sound off of a consonant blend. For example: The word *crow* without /k/ is *row*. Say *still* without /s/? (The child should say *till*. Do the following words with the student and put a check in the box on the right if the child does each correctly.)

1. Say *clap* without /k/	lap	☐	☐	☐	☐	☐	☐
2. Say *stop* without /s/	top	☐	☐	☐	☐	☐	☐
3. Say *trust* without /t/	rust	☐	☐	☐	☐	☐	☐
4. Say *black* without /b/	lack	☐	☐	☐	☐	☐	☐
5. Say *drip* without /d/	rip	☐	☐	☐	☐	☐	☐
6. Sat *smile* without /s/	mile	☐	☐	☐	☐	☐	☐
Mastery 5/6		/6	/6	/6	/6	/6	/6
Date:		——	——	——	——	——	——

Phoneme Substitution

Say: Now we will play a very different game with sounds of words. I'm going to have you take off the first sound of a word and replace it with another sound. For example: Replace the first sound in *pail* with /m/. The new word is *mail*.

Now it is your turn. Replace the first sound in *top* with /h/. (The child should say *hop*. Do the following words with the student and put a check in the box on the right if the child does each correctly.)

1. Replace the first sound in *man* with /k/	can	☐	☐	☐	☐	☐	☐
2. Replace the first sound in *pig* with /d/	dig	☐	☐	☐	☐	☐	☐
3. Replace the first sound in *sack* with /t/	tack	☐	☐	☐	☐	☐	☐
4. Replace the first sound in *well* with /f/	fell	☐	☐	☐	☐	☐	☐
5. Replace the first sound in *bed* with /r/	red	☐	☐	☐	☐	☐	☐
6. Replace the first sound in *shop* with /ch/	chop	☐	☐	☐	☐	☐	☐
Mastery 5/6		/6	/6	/6	/6	/6	/6
Date:		——	——	——	——	——	——

7

Appendix C: Parent Information Letter

Dear Kindergarten Parents/Guardians,

      Because of our commitment to helping our students become readers, we will be

employing more of an interdisciplinary approach during music class. Beginning January

11, 2022, the Kindergarten music class lessons will focus on phonics and phonemic

awareness skills. This unit will culminate in approximately six weeks. Thanks for all

you do to support your child's education!

Lisa Poncelet   Paul Bakker
Pinecrest Music Specialist   Pinecrest Elementary
Principal

Appendix D

Minnesota Academic Standards in English Language Arts: Kindergarten

Reading

1. Literature

Code	Standards	Benchmarks
0.1.1.1	1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.	1. With prompting and support, ask and answer questions about key details in a text.
0.1.2.2	2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.	2. With prompting and support, retell familiar stories, including key details.
0.1.3.3	3. Analyze how and why individuals, events, and ideas develop and interact over the course of a text.	3. With prompting and support, identify characters, settings, and major events in a story.
0.1.4.4	4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.	4. Ask and answer questions about unknown words in a text.
0.1.5.5	5. Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.	5. Recognize common types of texts (e.g., storybooks, poems).
0.1.6.6	6. Assess how point of view or purpose shapes the content and style of a text.	6. With prompting and support, name the author and illustrator of a story and define the role of each in telling the story.
0.1.7.7	7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.	7. With prompting and support, describe the relationship between illustrations and the story in which they appear (e.g., what moment in a story an illustration depicts).
0.1.9.9	9. Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.	9. With prompting and support, compare and contrast the adventures and experiences of characters in familiar stories.

0.10.10	10. Read and comprehend complex literary and informational texts independently and proficiently.	10. Actively engage in group reading activities with purpose and understanding, including the appropriate selection of texts for personal enjoyment, interest, and academic tasks.

. 2. Informational Text

Code	Standards	Benchmarks
0.2.1.1	1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.	1. With prompting and support, ask and answer questions about key details in a text.
0.2.2.2	2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.	2. With prompting and support, identify the main topic and retell key details of a text.
0.2.3.3	3. Analyze how and why individuals, events, and ideas develop and interact over the course of a text.	3. With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.
0.2.4.4	4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.	4. With prompting and support, ask and answer questions about unknown words in a text.
0.2.5.5	5. Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole	5. Identify the front cover, back cover, and title page of a book.
0.2.6.6	6. Assess how point of view or purpose shapes the content and style of a text	6. Name the author and illustrator of a text and define the role of each in presenting the ideas or information in a text.
0.2.7.7	7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.	7. With prompting and support, describe the relationship between illustrations and the text in which they appear (e.g., what person, place, thing, or idea in the text an illustration depicts)
0.2.8.8	8. Delineate and evaluate the argument and specific	8. With prompting and

	claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.	support, identify the reasons an author gives to support points in a text.
0.2.9.9	9. Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.	9. With prompting and support, identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures)
0.2.10.10	10. Read and comprehend complex literary and informational texts independently and proficiently.	10. Actively engage in group reading activities with purpose and understanding, including the appropriate selection of texts for personal enjoyment, interest, and academic tasks.

3. Foundational Skills
No Anchor Standards

Code	Benchmarks
0.3.0.1	1. Demonstrate understanding of the organization and basic features of print: (a) Follow words from left to right, top to bottom, and page by page. (b) Recognize that spoken words are represented in written language by specific sequences of letters. (c) Understand that words are separated by spaces in print. (d) Recognize and name all upper- and lowercase letters of the alphabet.
0.3.0.2	2. Demonstrate understanding of spoken words, syllables, and sounds (phonemes): (a) Recognize and produce rhyming words. (b) Count, pronounce, blend, and segment syllables in spoken words. (c) Blend and segment onsets and rimes of single-syllable spoken words. (d) Isolate and pronounce the initial, medial vowel, and final sounds (phonemes) in three-phoneme (consonant-vowel-consonant, or CVC) words. (This does not include CVCs ending with /l/, /r/, or /x/.) (e) Add or substitute individual sounds (phonemes) in simple, onesyllable words to make new words.
0.3.0.3	3. Know and apply grade-level phonics and word analysis skills in decoding words: (a) Demonstrate basic knowledge of one-to-one letter-sound correspondences by producing the primary or many of the most frequent sound for each consonant. (b) Associate the long and short sounds with common spellings (graphemes) for the five major vowels. (c) Read common high-frequency words by sight (e.g., the, of, to, you, she, my, is, are, do, does). (d) Distinguish between similarly spelled words by identifying the sounds of the letters that differ.
0.3.0.4	4. Read emergent-reader texts with purpose and understanding.

Writing

6.Writing

Code	Standards	Benchmarks
0.6.1.1	1. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.	1. Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book (e.g., My favorite book is ...)
0.6.2.2	2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.	2. Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic
0.6.3.3	3. Write narratives and other creative texts to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences	3. Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.
0.6.5.5	5. Use a writing process to develop and strengthen writing as needed by planning, drafting, revising, editing, rewriting, or trying a new approach.	5. With guidance and support from adults, respond to questions and suggestions from adults and peers and add details to strengthen writing as needed.
0.6.6.6	6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.	6. With guidance and support from adults, explore a variety of digital tools to produce and publish writing, including in collaboration with peers.
0.6.7.7	7. Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.	7. Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them)
0.6.8.8	8. Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.	8. With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

Speaking

8. Speaking, Viewing, Listening and Media Literacy

Code	Standards	Benchmarks
0.8.1.1	1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others'	1. Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger

	ideas and expressing their own clearly and persuasively	groups: (a) Follow agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about the topics and texts under discussion). (b) Continue a conversation through multiple exchanges. (c) Listen to others and name emotions by observing facial expression and other nonverbal cues. (d) Follow basic oral directions.
0.8.2.2	2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.	2. Confirm understanding of a text read aloud or information presented orally or through other media (e.g., poems, rhymes, songs) by asking and answering questions about key details and requesting clarification if something is not understood.
0.8.3.3	3. Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric	3. Ask and answer questions in order to seek help, get information, or clarify something that is not understood.
0.8.4.4	4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.	4. Describe familiar people, places, things, and events and, with prompting and support, provide additional detail.
0.8.5.5	5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations	5. Add drawings or other visual displays to descriptions as desired to provide additional detail.
0.8.6.6	6. Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.	6. Speak audibly and express thoughts, feelings, and ideas clearly, and respond to poems, rhymes, and songs
0.8.7.7	7. Critically analyze information found in electronic, print, and mass media and use a variety of these sources.	7. Distinguish among different types of print, digital, and multimodal media: (a) Recognize common signs and logos. (b) Identify commercials or advertisements
0.8.8.8	8. Communicate using traditional or digital multimedia formats and digital writing and publishing for a specific purpose.	8. With prompting and support, create an individual or shared multimedia work for a specific purpose (e.g., to share lived or imagined experiences, to present information, to entertain, or as artistic expression.

Language

10. Language

Code	Standards	Benchmark
0.10.1.1	1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.	1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking: (a) Print many upper- and lowercase letters. (b) Use frequently occurring nouns

		and verbs. (c) Form regular plural nouns orally by adding /s/ or /es/ (e.g., dog, dogs; wish, wishes). (d) Understand and use question words (interrogatives) (e.g., who, what, where, when, why, how). (e) Use the most frequently occurring prepositions (e.g., to, from, in, out, on, off, for, of, by, with). (f) Produce and expand complete sentences in shared language activities.
0.10.2.2	2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing	2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing: (a) Capitalize the first word in a sentence and the pronoun I. (b) Recognize and name end punctuation. (c) Write a letter or letters for most consonant and short-vowel sounds (phonemes). (d) Spell simple words phonetically, drawing on knowledge of sound-letter relationships.
0.10.4.4	4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate	4. Determine or clarify the meaning of unknown and multiple meaning words and phrases based on kindergarten reading and content: (a) Identify new meanings for familiar words and apply them accurately (e.g., knowing duck is a bird and learning the verb to duck). (b) Use the most frequently occurring inflections and affixes (e.g., -ed, -s, re-, un-, pre-, -ful, -less) as a clue to the meaning of an unknown word.
0.10.5.5	5. Demonstrate understanding of figurative language, word relationships and nuances in word meanings	5. With guidance and support from adults, explore word relationships and nuances in word meanings to develop word consciousness: (a) Sort common objects into categories (e.g., shapes, foods) to gain a sense of the concepts the categories represent. (b) Demonstrate understanding of frequently occurring verbs and adjectives by relating them to their opposites (antonyms). (c) Identify real-life connections between words and their use (e.g., note places at school that are colorful). (d) Distinguish shades of meaning among verbs describing the same general action (e.g., walk, march, strut, prance) by acting out the meanings.
0.10.6.6	6. Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.	6. Use words and phrases acquired through conversations, reading and being read to, and responding to texts.

Appendix E

2018 Minnesota Academic Standards in Arts Education: Music

Code	Arts Area	Grade	Strand	Anchor Standard	Benchmark
3.A.1.1	3. Music	ALL	*1.Foundations*	1. Use foundational knowledge and skills while responding to, creating, and presenting artistic work.	*The benchmarks are integrated across the other strands, highlighted in bold.*
3.0.2.2.1	3. Music	0	2.Create	2. Generate and develop original artistic ideas.	1. *Improvise* musical sounds in response to teacher cues
3.0.2.3.1	3. Music	0	2.Create	3. Create original artistic work.	1. Choose a musical sound to share.
3.0.2.4.1	3. Music	0	2.Create	4. Revise and complete original artistic work.	1. Change selected musical sounds using teacher feedback.
3.0.3.5.1	3. Music	0	3. Perform	5. Develop and refine artistic techniques and work for performance.	1. Demonstrate **moving, singing** and **playing instruments** with others.
3.0.4.6.1	3. Music	0	3. Perform	6. Make artistic choices in order to convey meaning through performance.	1. Make a musical choice while **singing, playing instruments,** or **moving** to explore the effects of musical *elements*. For example: **High/low; loud/soft; fast/slow.**
3.0.4.7.1	3. Music	0	4. Repond	7. Analyze and construct interpretations of artistic work.	1. Identify musical opposites while **listening** to and interacting with a variety of music.
3.0.4.8.1	3. Music	0	4. Respond	8. Evaluate artistic work by applying criteria.	1. Identify which of two contrasting *musical selections* is preferred, and tell why.
3.0.5.9.1	3. Music	0	5. Connect	9. Integrate knowledge and personal experiences while responding to, creating, and presenting artistic work.	**1. Sing** or **play instruments** using a familiar song that you have learned.
3.0.5.10.1	3. Music	0	5. Connect	10. Demonstrate an understanding that artistic works influence and are influenced by personal, societal, cultural, and historical contexts, including the contributions of Minnesota American Indian tribes and communities.	1. **Sing, play instruments**, or **listen** to music from various *cultures*.

Appendix F

P.A.S.T. Data

Hanson (McAuliffe) Class Data-Control Group 1

Control Group McAuliffe - Hanson	Concept of Word Pre-Test	Concept of Word Post-Test	Rhyme Recognition Pre-Test	Rhyme Recognition Post-Test	Rhyme Prodution Pre-Test	Rhyme Prodution Post-Test	Syllable Blending Pre-Test	Syllable Blending Post-Test	Syllable Segmentation Pre-Test	Syllable Segmentation Post-Test	Syllable Deletion Pre-Test	Syllable Deletion Post-Test	Phoneme Isolation of Initial Sound Pre-Test	Phoneme Isolation of Initial Sound Post-Test	Phoneme Isolation of Final Sound Pre-Test	Phoneme Isolation of Final Sound Post-Test	Phoneme Blending Pre-Test	Phoneme Blending Post-Test	Phoneme Segmentation Pre-Test	Phoneme Segmentation Post-Test
C	1	4	1	6	5	X	6	X	4	6	3	6	0	6	X	6	X	X	X	X
V	5	X	5	X	6	X	6	X	4	5	6	X	5	X	0	5	X	X	X	X
S	5	X	5	X	3	6	6	X	6	X	2	6	6	X	5	X	6	X	6	X
Q	5	X	6	X	6	X	6	X	4	6	3	6	6	X	5	X	X	5	X	6
G	3	5	6	X	5	X	6	X	5	X	6	X	2	6	1	6	X	5	X	6
E	4	6	5	X	5	X	6	X	5	X	5	X	5	X	6	X	1	3	X	6
L	3	5	4	6	0	6	6	X	4	5	4	4	0	6	X	5	X	X	X	X
L	1	6	6	X	6	X	6	X	3	5	4	5	5	X	X	5	X	2	X	1
M	4	5	3	6	1	6	6	X	4	6	2	6	4	6	X	6	X	X	X	X
A	5	X	6	X	6	X	6	X	4	6	4	6	5	X	4	5	3	5	5	X
T	4	5	4	5	1	6	6	X	3	5	2	4	2	6	X	1	X	X	X	X
N	2	5	0	6	0	1	6	X	5	X	0	0	0	6	X	6	X	X	X	X
J	1	6	1	6	5	X	6	X	4	5	2	6	4	6	X	6	X	X	X	X
A	5	X	5	X	4	6	6	X	6	X	6	X	6	X	0	6	5	X	3	6
B	4	4	1	3	0	0	6	X	0	6	1	2	2	6	X	0	X	X	X	X
C	4	6	6	X	6	X	6	X	6	X	6	X	3	6	3	6	X	5	X	6
F	4	5	6	X	6	X	6	X	5	X	6	X	6	X	2	6	5	X	6	X
G	3	6	1	6	1	6	6	X	0	6	3	5	0	6	X	5	X	5	X	X
T	5	X	4	5	4	6	6	X	6	X	4	6	4	6	0	5	2	5	X	6
Total 19																				
Pass:	6	17	10	18	10	18	19	19	8	19	6	15	8	19	3	17	3	9	3	9
Fail/Did not	13	2	9	1	9	1	0	0	11	0	13	4	11	0	16	2	16	10	16	10

Jonely (McAuliffe) Class Data-Control Group 2

Control Group McAuliffe - Jonely	Concept of Word Pre-Test	Concept of Word Post-Test	Rhyme Recognition Pre-Test	Rhyme Recognition Post-Test	Rhyme Prodution Pre-Test	Rhyme Prodution Post-Test	Syllable Blending Pre-Test	Syllable Blending Post-Test	Syllable Segmentation Pre-Test	Syllable Segmentation Post-Test	Syllable Deletion Pre-Test	Syllable Deletion Post-Test	Phoneme Isolation of Initial Sound Pre-Test	Phoneme Isolation of Initial Sound Post-Test	Phoneme Isolation of Final Sound Pre-Test	Phoneme Isolation of Final Sound Post-Test	Phoneme Blending Pre-Test	Phoneme Blending Post-Test	Phoneme Segmentation Pre-Test	Phoneme Segmentation Post-Test
L	5	3	5	6	0	6	6	6	4	6	0	5	2	6	X	5	X	1	X	2
G	6	X	6	X	6	X	6	X	6	X	6	X	6	X	0	6	2	6	X	6
A	3	6	6	X	3	6	6	X	4	5	5	X	5	X	4	6	3	6	0	5
H	3	6	3	6	2	6	6	X	5	X	0	5	0	6	X	3	X	3	X	2
O	X	3	X	6	X	5	X	6	X	6	X	6	X	6	X	6	X	6	X	6
O	6	X	6	X	5	X	6	X	2	2	0	5	0	6	X	5	X	6	X	2
M	6	X	6	X	6	X	6	X	4	6	4	6	6	X	1	6	X	6	X	6
M	1	6	2	6	0	5	6	X	4	3	0	4	0	6	X	5	X	5	X	5
T	3	6	5	X	5	X	3	6	6	X	5	X	5	X	0	6	X	6	X	6
M	2	5	5	X	6	X	0	6	4	5	3	6	6	X	4	6	0	6	X	4
L	5	X	6	X	6	X	6	X	5	X	5	X	6	X	0	6	6	X	6	X
L	5	X	5	X	6	X	6	X	3	6	3	5	5	X	3	6	6	X	6	X
C	5	X	6	X	6	X	6	X	4	6	4	6	6	X	0	6	6	X	6	X
W	5	X	6	X	5	X	6	X	1	5	4	5	0	6	0	5	X	6	X	6
A	0	5	1	6	0	3	6	X	0	0	0	0	0	5	X	0	X	X	X	X
Total 15																				
Pass	8	13	11	15	9	14	12	15	4	12	4	13	8	15	0	13	3	12	3	10
Fail/Did not	7	2	4	0	6	1	3	0	11	3	11	2	7	0	15	2	12	3	12	5

Elthon (McAuliffe) Class Data-Control Group 3

Control Group	Concept of Word	Concept of Word	Rhyme Recognition	Rhyme Recognition	Rhyme Prodution	Rhyme Prodution	Syllable Blending	Syllable Blending	Syllable Segmentation	Syllable Segmentation	Syllable Deletion	Syllable Deletion	Phoneme Isolation of Initial Sound	Phoneme Isolation of Initial Sound	Phoneme Isolation of Final Sound	Phoneme Isolation of Final Sound	Phoneme Blending	Phoneme Blending	Phoneme Segmentation	Phoneme Segmentation
McAuliffe - Elthon	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
I	4	4	6	X	4	6	6	X	4	4	5	X	2	6	0	1	X	6	X	6
K	5	X	5	X	3	5	6	X	5	X	2	3	5	X	X	5	X	6	X	6
R	5	X	5	X	4	5	6	X	5	X	5	X	6	X	4	6	0	6	X	5
J	5	X	5	X	4	4	6	X	6	X	3	4	6	X	0	5	3	6	X	4
V	5	X	4	6	3	6	6	X	3	4	4	5	6	X	X	6	X	6	X	6
L	2	6	5	X	4	6	6	X	4	6	4	4	6	X	X	5	X	5	X	4
C	2	6	4	6	1	6	6	X	6	X	6	X	6	X	X	5	X	5	X	3
A	1	6	4	6	4	5	6	X	4	5	6	X	6	X	X	6	X	6	X	4
A	2	6	4	6	3	6	6	X	5	X	3	5	3	5	X	5	X	6	X	3
R	3	5	4	5	0	2	6	X	5	X	0	0	0	5	X	1	X	4	X	5
S	2	4	5	X	2	6	6	X	6	X	1	2	2	0	X	X	X	X	X	X
A	5	X	3	X	2	X	4		4		0		0	X	X	X	X	X	X	X
D	2	5	6	X	0	6	6	X	3	6	0	6	0	5	X	1	X	4	X	2
S	4	5	5	X	0	3	6	X	4	6	0	3	2	4	X	2	X	X	X	X
E	5	X	5	X	2	5	6	X	6	X	0	5	4	6	X	6	X	5	X	4
H	4	6	6	X	5	X	6	X	6	X	6	X	6	X	0	6	2	5	X	4
H	5	X	5	X	6	X	6	X	6	X	6	X	6	X	0	5	5	X	5	X
Total: 17																				
Pass	7	15	11	16	2	13	16	16	10	14	6	10	9	14	0	11	1	13	1	6
Fail/Did not	10	2	6	1	15	4	1	1	7	3	11	7	8	3	17	6	16	4	16	11

Schulte (McAuliffe) Class Data-Control Group 4

Control Group	Concept of Word	Concept of Word	Rhyme Recognition	Rhyme Recognition	Rhyme Prodution	Rhyme Prodution	Syllable Blending	Syllable Blending	Syllable Segmentation	Syllable Segmentation	Syllable Deletion	Syllable Deletion	Phoneme Isolation of Initial Sound	Phoneme Isolation of Initial Sound	Phoneme Isolation of Final Sound	Phoneme Isolation of Final Sound	Phoneme Blending	Phoneme Blending	Phoneme Segmentation	Phoneme Segmentation
McAuliffe - Schulte	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
B	4	5	3	6	1	1	6	X	6	X	0	0	3	5	X	0	X	0	X	X
J	0	3	3	2	0	3	6	X	3	4	0	1	0	0	X	0	X	X	X	X
W	4	5	5	X	1	6	6	X	5	X	0	1	0	3	X	0	X	X	X	X
A	3	6	4	6	1	6	5	X	6	X	6	X	6	X	0	3	X	4	X	6
N	3	4	6	X	1	3	6	X	6	X	4	0	6	X	0	6	X	3	X	3
M	3	6	4	6	3	6	6	X	4	6	1	5	3	6	X	6	X	5	X	3
L	6	X	6	X	6	6	6	X	5	X	6	X	5	X	4	6	4	4	X	6
L	0	6	6	X	5	5	6	X	5	X	4	2	0	6	X	6	X	3	X	4
M	5	X	5	X	6	6	6	X	5	X	5	X	1	6	X	5	X	2	X	4
E	4	6	6	X	4	6	6	X	6	X	4	6	6	X	2	6	X	5	X	6
E	3	6	4	4	0	1	6	X	5	X	5	X	1	6	0	6	X	6	X	6
M	5	X	6	X	5	5	6	X	6	X	6	X	5	X	0	6	X	4	X	6
S	4	6	3	3	0	1	6	X	5	X	0	4	0	6	X	2	X	0	X	X
R	4	6	5	X	0	6	6	X	4	6	3	2	6	X	X	6	X	5	X	6
C	4	6	5	X	6	6	6	X	3	4	4	6	6	X	0	5	X	6	X	6
D	4	6	5	X	5	5	6	X	4	6	5	X	6	X	0	6	X	2	X	6
A	3	5	6	X	6	6	6	X	6	X	6	X	6	X	5	5	X	4	X	6
A	1	5	4	3	0	0	6	X	4	5	1	2	0	X	X	0	X	0	X	X
Total:18																				
Pass	3	16	11	14	7	12	18	18	12	16	7	10	9	15	1	12	0	5	0	9
Fail/Did not	15	2	7	4	11	6	0	0	6	2	11	8	9	3	17	6	18	13	18	9

Brandt (McAuliffe) Class Data-Control Group 5

Control Group McAuliffe - Brandt	Concept of Word Pre-Test	Concept of Word Post-Test	Rhyme Recognition Pre-Test	Rhyme Recognition Post-Test	Rhyme Prodution Pre-Test	Rhyme Prodution Post-Test	Syllable Blending Pre-Test	Syllable Blending Post-Test	Syllable Segmentation Pre-Test	Syllable Segmentation Post-Test	Syllable Deletion Pre-Test	Syllable Deletion Post-Test	Phoneme Isolation of Initial Sound Pre-Test	Phoneme Isolation of Initial Sound Post-Test	Phoneme Isolation of Final Sound Pre-Test	Phoneme Isolation of Final Sound Post-Test	Phoneme Blending Pre-Test	Phoneme Blending Post-Test	Phoneme Segmentation Pre-Test	Phoneme Segmentation Post-Test
Q	1	5	3	6	1	4	6	X	5	X	4	6	4	6	1	4	0	5	X	1
Z	4	5	0	6	0	6	6	X	5	X	3	6	0	6	X	5	X	5	X	2
E	5	X	6	X	3	6	6	X	6	X	5	X	6	6	2	6	0	6	X	6
N	1	6	5	X	0	6	6	X	6	X	3	6	4	6	5	X	5	X	2	6
E	6	6	1	1	0	0	6	X	5	X	3	3	5	5	4	4	5	X	0	0
A	0	0	6	X	3	3	6	X	4	4	4	4	4	4	5	X	5	X	3	3
B	1	1	3	3	4	4	6	X	3	3	3	3	5	5	4	4	3	3	0	0
C	6	6	3	6	0	4	6	X	4	3	2	6	4	6	0	6	0	6	X	5
J	2	3	5	X	6	X	6	X	5	X	1	2	1	6	X	6	X	6	X	4
A	6	X	6	X	4	6	6	X	4	5	5	X	6	6	4	6	5	X	0	6
F	4	5	5	X	0	0	6	X	5	X	0	3	0	6	X	3	X	4	X	4
E	5	X	5	X	4	6	6	X	6	X	6	X	5	X	6	X	5	6	2	6
H	3	6	6	X	2	4	5	X	6	X	6	X	0	5	2	5	X	4	X	2
R	5	X	4	4	0	0	6	X	6	X	6	X	0	6	0	3	X	4	X	4
E	5	X	6	X	6	X	6	X	6	X	6	X	6	6	5	X	5	6	0	5
M	4	6	3	5	1	2	6	X	5	X	4	6	5	4	4	4	1	2	0	X
T	5	X	6	X	6	6	6	X	5	X	5	X	6	6	0	6	3	6	X	6
S	6	X	6	X	1	1	6	X	6	X	2	6	3	6	0	6	X	6	X	6
C	X	6	X	6	X	4	X	5	X	6	X	4	X	5	X	5	X	3	X	2
Total: 19																				
Pass	9	16	11	16	3	8	18	19	14	16	7	13	8	17	4	13	6	13	0	8
Fail/did not	10	3	8	3	16	11	1	0	5	3	12	6	11	2	15	6	13	6	19	11

Maul (Kennedy) Class Data-Control Group 6

Control Group Kennedy - Maul	Concept of Word Pre-Test	Concept of Word Post-Test	Rhyme Recognition Pre-Test	Rhyme Recognition Post-Test	Rhyme Prodution Pre-Test	Rhyme Prodution Post-Test	Syllable Blending Pre-Test	Syllable Blending Post-Test	Syllable Segmentation Pre-Test	Syllable Segmentation Post-Test	Syllable Deletion Pre-Test	Syllable Deletion Post-Test	Phoneme Isolation of Initial Sound Pre-Test	Phoneme Isolation of Initial Sound Post-Test	Phoneme Isolation of Final Sound Pre-Test	Phoneme Isolation of Final Sound Post-Test	Phoneme Blending Pre-Test	Phoneme Blending Post-Test	Phoneme Segmentation Pre-Test	Phoneme Segmentation Post-Test
L	4	6	5	X	6	X	6	X	5	X	3	6	6	X	0	6	0	6	0	6
A	4	6	5	X	3	5	6	X	4	5	6	X	6	X	0	5	0	3	2	6
K	6	X	0	6	0	6	6	X	4	6	3	6	5	X	6	X	X	6	X	6
W	4	6	6	X	6	X	6	X	4	6	5	X	6	X	1	6	2	5	4	6
S	3	6	5	X	2	6	6	X	6	X	5	X	5	X	4	6	3	6	5	X
R	6	X	5	X	6	X	6	X	5	X	6	X	6	X	6	X	6	X	6	X
L	5	X	6	X	6	X	6	X	6	X	6	X	6	X	5	X	4	6	4	6
W	4	6	6	X	6	X	6	X	4	6	6	X	4	6	3	3	1	5	X	4
K	2	6	3	6	1	3	6	X	6	X	4	6	6	X	X	5	X	6	X	6
G	5	X	6	X	4	4	6	X	4	4	4	5	0	6	0	6	X	5	X	5
L	4	4	4	6	0	0	X	6	X	5	X	5	X	3	X	0	X	4	X	4
W	5	X	6	X	6	X	5	X	6	X	5	X	6	X	1	3	2	4	0	6
J	4	5	4	5	1	0	6	X	X	6	X	6	X	6	X	6	X	3	X	4
A	1	5	3	6	0	3	6	X	4	5	2	3	0	5	X	5	X	5	X	4
P	4	6	4	6	0	0	X	6	X	4	X	3	X	6	X	2	X	3	X	2
D	3	6	6	X	5	X	6	X	0	3	4	4	5	X	0	4	0	5	0	4
M	2	4	6	X	5	X	6	X	3	6	1	5	0	6	X	6	X	3	X	4
T	2	6	2	6	3	3	X	6	X	6	X	4	X	6	X	0	X	6	X	5
L	4	5	2	5	2	5	6	X	X	6	X	4	X	6	X	3	X	2	X	2
N	5	X	4	X	0	X	5	X	1	X	X	X	X	X	X	X	X	X	X	X
P	4	6	6	X	6	X	6	X	3	6	5	X	5	X	1	6	4	6	0	6
Total: 21																				
Pass	6	19	12	21	9	13	19	21	6	18	8	16	11	20	3	13	1	13	1	13
Fail/did not	15	2	9	0	12	8	2	0	15	3	13	5	10	1	18	8	20	8	20	8

Regenfuss (Kennedy) Class Data-Control Group 6

Control Group	Concept of Word	Concept of Word	Rhyme Recognition	Rhyme Recognition	Rhyme Prodution	Rhyme Prodution	Syllable Blending	Syllable Blending	Syllable Segmentation	Syllable Segmentation	Syllable Deletion	Syllable Deletion	Phoneme Isolation of Initial Sound	Phoneme Isolation of Initial Sound	Phoneme Isolation of Final Sound	Phoneme Isolation of Final Sound	Phoneme Blending	Phoneme Blending	Phoneme Segmentation	Phoneme Segmentation
Kennedy-Regenfuss	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
K	4	6	6	X	1	4	6	X	5	X	3	4	4	X	0	5	1	6	X	6
J	1	6	6	X	5	X	6	X	3	6	2	5	0	6	X	6	X	6	X	6
E	4	3	2	6	0	6	6	X	0	6	0	4	X	6	X	3	X	6	X	6
H	5	X	4	6	0	6	6	X	6	X	4	6	5	X	0	6	0	6	X	6
A	4	5	4	4	3	0	6	X	5	X	2	1	3	5	X	2	X	2	X	1
S	X	6	X	6	X	6	X	6	X	6	X	6	X	6	X	6	X	6	X	6
C	4	6	5	X	0	5	6	X	3	5	1	0	X	6	X	3	X	3	X	4
W	1	4	4	6	1	6	6	X	0	2	0	0	0	X	X	X	X	X	X	X
S	3	6	3	6	1	4	6	X	6	X	4	5	5	X	X	6	X	6	X	6
L	6	X	5	X	2	5	6	X	6	X	4	4	5	X	0	6	5	X	1	6
S	5	X	4	5	5	X	6	X	4	6	6	X	6	X	1	6	6	X	6	X
B	3	6	4	6	5	X	6	X	6	X	5	X	4	6	5	X	0	6	0	6
C	2	5	4	5	0	0	3	6	3	6	0	1	0	5	X	6	X	4	X	5
H	6	X	5	X	4	5	6	X	6	X	5	X	5	X	0	5	1	6	X	5
E	6	X	6	X	5	X	6	X	6	X	6	X	6	X	1	5	4	5	1	6
B	3	6	4	6	5	X	0	6	0	5	1	5	0	6	X	2	X	3	X	6
Q	5	X	6	X	5	X	6	X	6	X	6	X	5	X	0	6	0	5	X	6
P	4	6	6	X	5	X	6	X	5	X	4	6	6	X	1	6	4	6	X	5
H	5	X	6	X	2	5	6	X	6	X	2	6	6	X	1	6	2	6	X	6
D	5	X	3	6	0	2	6	X	0	5	1	4	0	6	X	1	X	2	X	1
S	5	X	6	X	5	X	6	X	5	X	6	X	6	X	0	6	4	5	3	6
Total: 21																				
Pass	9	19	10	20	8	16	18	21	12	20	6	13	10	21	1	16	2	15	1	17
Fail/did not	12	2	11	1	13	5	3	0	9	1	15	8	11	0	20	5	19	6	20	4

Corneliussen (Kennedy) Class Data-Control Group 7

Control Group	Concept of Word	Concept of Word	Rhyme Recognition	Rhyme Recognition	Rhyme Prodution	Rhyme Prodution	Syllable Blending	Syllable Blending	Syllable Segmentation	Syllable Segmentation	Syllable Deletion	Syllable Deletion	Phoneme Isolation of Initial Sound	Phoneme Isolation of Initial Sound	Phoneme Isolation of Final Sound	Phoneme Isolation of Final Sound	Phoneme Blending	Phoneme Blending	Phoneme Segmentation	Phoneme Segmentation
Kennedy-Corneliussen	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
B	2	3	5	4	1	0	6	X	4	4	1	2	1	5	3	2	X	5	X	3
F	2	2	6	X	0	0	0	4	3	1	0	1	0	3	0	3	X	0	X	0
E	2	6	4	5	3	5	6	X	4	5	0	6	1	6	6	X	4	5	6	3
H	2	3	6	X	0	0	6	X	0	4	0	0	3	6	6	X	X	0	X	2
A	5	X	6	X	2	4	6	X	4	4	3	1	0	6	X	4	X	6	X	5
W	4	6	5	X	2	6	6	X	6	X	6	X	5	X	0	5	1	5	X	5
B	3	6	4	6	0	5	6	X	6	X	3	5	0	X	4	5	X	6	X	2
J	5	X	6	X	6	X	6	X	6	X	6	X	5	X	6	X	X	3	X	4
D	5	X	6	X	4	6	6	X	6	X	6	X	6	X	6	X	X	6	X	6
N	2	6	5	X	4	5	6	X	4	6	6	X	6	X	4	6	3	6	X	6
A	4	5	3	4	0	6	6	X	2	0	5	X	0	6	0	1	X	4	X	4
Total: 11																				
Pass	3	8	8	9	1	7	10	10	4	6	5	7	4	9	4	7	0	7	1	4
Fail/did not tes	8	3	3	2	10	4	1	1	7	5	6	4	7	2	7	4	11	4	10	7

Wenzel (Kennedy) Class Data-Control Group 6

Control Group Kennedy-Wenzel	Concept of Word Pre-Test	Concept of Word Post-Test	Rhyme Recognition Pre-Test	Rhyme Recognition Post-Test	Rhyme Prodution Pre-Test	Rhyme Prodution Post-Test	Syllable Blending Pre-Test	Syllable Blending Post-Test	Syllable Segmentation Pre-Test	Syllable Segmentation Post-Test	Syllable Deletion Pre-Test	Syllable Deletion Post-Test	Phoneme Isolation of Initial Sound Pre-Test	Phoneme Isolation of Initial Sound Post-Test	Phoneme Isolation of Final Sound Pre-Test	Phoneme Isolation of Final Sound Post-Test	Phoneme Blending Pre-Test	Phoneme Blending Post-Test	Phoneme Segmentation Pre-Test	Phoneme Segmentation Post-Test
A	6	X	3	6	0	6	6	X	3	3	3	6	5	X	X	6	X	6	X	6
K	2	5	6	X	6	X	6	X	5	X	5	X	0	6	1	6	X	5	X	6
R	6	X	3	6	0	1	6	X	4	6	5	X	5	X	X	6	X	3	X	6
L	4	6	6	X	6	X	6	X	4	6	6	X	5	X	0	4	2	6	X	6
H	3	6	5	X	3	4	6	X	2	6	4	6	6	X	0	6	4	6	X	6
S	6	X	6	X	6	X	6	X	5	X	5	X	6	X	6	X	6	X	6	X
C	3	6	6	X	5	X	6	X	3	4	3	5	6	X	X	5	X	5	X	5
W	0	6	6	X	2	5	5	X	0	6	1	5	6	X	X	4	X	5	X	6
G	3	6	6	X	5	X	6	X	6	X	3	6	5	X	0	4	4	6	X	5
R	2	6	4	6	1	6	5	X	5	X	4	6	4	6	3	6	X	6	X	5
B	4	5	6	X	5	X	6	X	3	6	3	5	3	6	0	6	X	6	X	6
L	1	6	3	6	1	6	5	X	2	6	0	4	0	6	X	2	X	5	X	5
L	3	6	2	6	0	2	6	X	4	6	4	5	0	6	X	6	X	6	X	6
P	3	6	5	X	5	X	6	X	6	X	5	X	3	6	0	4	X	6	X	6
A	1	6	3	4	1	4	6	X	0	6	0	0	0	6	X	5	X	6	X	6
A	1	5	6	X	6	X	6	X	4	4	3	3	6	X	X	6	X	6	X	6
I	6	X	4	6	0	4	2	6	3	6	1	4	1	6	X	5	X	6	X	5
S	0	3	2	4	0	0	6	X	3	6	0	1	0	6	X	3	X	6	X	6
K	4	6	4	5	0	3	6	X	6	X	1	4	0	6	X	5	X	6	X	6
L	X	4	X	4	X	4	X	6	X	6	X	6	X	5	X	1	X	6	X	4
R	X	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
H	2	3	4	6	0	4	0	6	5	X	1	X	6	X	X	X	X	X	X	X
Total: 22																				
Pass	4	18	10	18	8	12	18	21	8	18	54	14	10	21	1	13	1	19	1	19
Fail/did no	18	4	12	4	14	10	4	1	14	4	17	8	12	1	21	9	21	3	21	3

Hvidhyld (Pinecrest) Class Data-Treatment Group 1

Treatment Group	Concept of Word	Concept of Word	Rhyme Recognition	Rhyme Recognition	Rhyme Prodution	Rhyme Prodution	Syllable Blending	Syllable Blending	Syllable Segmentation	Syllable Segmentation	Syllable Deletion	Syllable Deletion	Phoneme Isolation of Initial Sound	Phoneme Isolation of Initial Sound	Phoneme Isolation of Final Sound	Phoneme Isolation of Final Sound	Phoneme Blending	Phoneme Blending	Phoneme Segmentation	Phoneme Segmentation
Pinecrest-Hvidhyld	72	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
S	2	5	4	6	2	5	6	X	4	6	5	X	6	X	0	6	X	6	X	5
A	2	5	6	X	3	5	4	6	5	X	1	6	1	6	X	6	X	6	X	6
E	2	6	6	X	1	0	2	6	4	6	X	1	3	6	1	4	X	5	X	4
G	4	5	6	X	3	5	6	X	6	X	5	X	4	6	0	6	0	6	X	6
L	5	X	5	X	2	5	5	X	4	6	3	6	5	X	0	6	2	6	X	6
M	5	X	6	X	5	X	6	X	5	6	6	X	6	X	6	X	4	5	2	6
R	1	5	6	X	6	X	6	X	4	5	3	6	6	X	0	6	0	6	X	6
K	3	5	6	X	6	X	6	X	5	X	4	6	6	X	6	X	2	6	2	6
M	4	5	6	X	1	5	6	X	6	X	5	X	6	X	5	X	6	X	5	X
A	6	X	6	X	6	X	6	X	4	5	6	X	6	X	6	X	6	X	5	X
B	6	X	6	X	6	X	6	X	5	X	6	X	6	X	6	X	6	X	5	X
B	2	6	2	5	0	6	0	6	4	6	3	5	0	6	X	5	X	4	X	6
T	1	5	6	X	2	6	6	X	4	6	4	6	5	X	1	6	X	6	X	5
C	5	X	6	X	0	6	6	X	6	X	5	X	3	5	4	6	X	6	X	6
B	3	6	3	6	1	6	6	X	3	6	1	6	0	6	X	5	X	6	X	6
P	5	X	5	X	0	5	5	X	6	X	6	X	0	5	1	6	X	4	X	4
S	3	5	3	6	0	5	6	X	4	6	4	6	2	6	X	6	X	5	X	6
K	0	5	5	X	1	5	2	6	3	6	0	6	0	6	X	5	X	5	X	5
B	1	6	6	X	6	X	0	6	4	6	0	6	0	5	2	6	X	6	X	5
L	3	5	5	X	5	X	5	X	5	X	6	X	0	6	0	6	X	6	X	6
G	2	6	6	X	2	6	6	X	4	6	3	6	3	6	X	6	X	6	X	4
Total: 21																				
Pass	6	21	16	21	7	20	15	21	9	21	8	20	9	21	5	20	3	19	3	18
Fail/did not t	15	0	5	0	14	1	6	0	12	0	13	1	12	0	16	1	18	2	18	3

Leontovich (Pinecrest) Class Data-Treatment Group 2

Treatment Group	Concept of Word	Concept of Word	Rhyme Recognition	Rhyme Recognition	Rhyme Prodution	Rhyme Prodution	Syllable Blending	Syllable Blending	Syllable Segmentation	Syllable Segmentation	Syllable Deletion	Syllable Deletion	Phoneme Isolation of Initial Sound	Phoneme Isolation of Initial Sound	Phoneme Isolation of Final Sound
Pinecrest-Leontovich	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test
K	4	5	4	6	0	5	6	X	6	X	1	5	0	6	0
J	1	4	5	X	0	0	5	X	2	6	1	4	0	4	X
L	1	5	4	4	0	4	5	X	4	5	0	1	0	6	X
R	3	5	1	6	0	5	6	X	4	5	2	4	1	3	0
F	6	X	6	X	6	X	6	X	4	6	6	X	6	X	6
S	5	X	6	X	6	X	6	X	5	X	6	X	6	X	6
B	6	X	6	X	5	X	6	X	4	5	4	6	6	X	0
L	2	6	3	6	0	6	5	6	3	5	0	6	0	6	1
R	1	6	4	6	5	X	5	X	4	6	2	6	0	6	3
A	1	5	2	6	0	6	6	X	4	6	0	5	0	6	X
K	6	X	6	X	6	X	6	X	6	X	5	X	6	X	3
D	4	6	6	X	0	6	6	X	6	X	4	6	6	X	5
A	5	X	5	X	5	X	6	X	6	X	2	6	6	X	5
B	4	5	3	5	1	5	6	X	5	X	5	X	6	X	1
A	5	X	4	6	5	6	6	X	4	5	5	X	6	X	1
E	6	X	6	X	4	6	6	X	4	6	4	6	0	6	5
M	3	6	6	X	6	X	6	X	6	X	6	X	6	X	5
Total: 17															
Pass	7	16	9	16	8	15	17	17	7	17	6	14	9	15	6
Fail/Did not	10	1	8	1	9	2	0	0	10	0	11	3	8	2	11

Brenny (Pinecrest) Class Data-Treatment Group 3

Treatment Group	Concept of Word	Concept of Word	Rhyme Recognition	Rhyme Recognition	Rhyme Production	Rhyme Production	Syllable Blending	Syllable Blending	Syllable Segmentation	Syllable Segmentation	Syllable Deletion	Syllable Deletion	Phoneme Isolation of Initial Sound	Phoneme Isolation of Initial Sound	Phoneme Isolation of Final Sound	Phoneme Isolation of Final Sound	Phoneme Blending	Phoneme Blending	Phoneme Segmentation	Phoneme Segmentation
Pinecrest-Brenny	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
L	0	0	3	3	0	1	0	0	0	X	0	X	0	X	X	X	X	X	X	X
D	4	4	2	6	0	6	6	X	4	6	1	5	0	6	X	6	X	5	X	4
B	5	X	6	X	6	X	6	X	4	6	6	X	6	X	0	6	1	6	X	6
A	4	6	6	X	5	X	6	X	6	X	5	X	6	X	5	X	2	6	2	6
I	2	5	6	X	6	X	6	X	5	X	3	6	6	X	0	5	0	5	X	5
N	4	6	6	X	6	X	6	X	6	X	3	6	6	X	1	6	2	6	X	6
A	4	5	6	X	6	X	6	X	5	X	3	6	6	X	6	X	1	6	X	5
B	4	6	6	X	6	X	6	X	6	X	6	X	6	X	4	6	5	X	6	X
C	3	5	6	X	4	6	6	X	3	4	6	X	6	X	6	X	5	X	2	6
L	6	X	6	X	6	X	6	X	5	X	6	X	6	X	6	X	5	X	2	6
A	6	X	6	X	6	X	6	X	2	5	2	4	5	X	4	6	4	6	X	6
D	5	X	6	X	6	X	6	X	6	X	6	X	6	X	0	6	5	X	5	X
W	5	X	6	X	4	6	6	X	0	6	6	X	6	X	0	6	6	X	6	X
M	5	X	6	X	5	X	6	X	4	6	4	5	6	X	5	X	3	6	1	6
L	5	X	6	X	1	5	6	X	5	X	1	6	0	5	X	6	X	6	X	5
R	1	5	0	6	0	5	0	6	2	6	0	4	0	6	X	6	X	5	X	5
R	4	6	6	X	6	X	6	X	4	6	2	5	6	X	0	6	1	6	X	6
C	2	6	5	X	2	6	5	X	2	6	2	6	6	X	1	6	X	6	X	5
J	4	6	3	6	0	6	6	X	5	6	0	6	0	4	X	0	X	5	X	4
H	5	X	6	X	4	5	6	X	4	6	3	6	4	6	0	4	X	5	X	5
Total: 20																				
Pass	8	18	16	19	11	19	18	19	9	18	7	17	14	18	5	17	5	19	2	17
Fail/Did not	12	2	4	1	9	1	2	1	11	2	13	3	6	2	15	3	15	1	18	3

Miller (Pinecrest) Class Data-Treatment Group 4

Treatment Group	Concept of Word	Concept of Word	Rhyme Recognition	Rhyme Recognition	Rhyme Production	Rhyme Production	Syllable Blending	Syllable Blending	Syllable Segmentation	Syllable Segmentation	Syllable Deletion	Syllable Deletion	Phoneme Isolation of Initial Sound	Phoneme Isolation of Initial Sound	Phoneme Isolation of Final Sound
Pinecrest-Miller	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test
K	2	6	6	X	2	6	4	6	2	6	0	3	1	6	X
E	2	5	6	X	3	5	6	X	0	5	0	4	3	6	0
C	5	X	0	5	0	6	6	X	3	6	3	6	6	X	4
I	3	2	3	5	1	6	2	6	1	3	1	4	2	6	0
C	5	X	6	X	4	5	6	X	5	X	3	3	3	5	0
L	2	6	6	X	5	X	6	X	3	5	3	6	5	X	0
S	2	6	6	X	0	5	6	X	4	6	3	5	5	X	0
W	4	6	5	X	4	6	X	6	3	6	4	6	0	6	X
L	1	5	4	6	1	3	6	X	4	6	1	5	0	6	2
C	5	X	6	X	0	4	6	X	4	5	1	4	0	6	X
B	1	6	6	X	4	6	6	X	2	4	4	6	6	X	0
O	6	X	6	X	5	X	6	X	4	5	5	X	6	X	6
E	4	5	6	X	0	6	6	X	6	X	0	6	6	X	0
A	4	6	6	X	5	X	6	X	4	6	6	X	5	6	0
B	2	6	5	X	3	6	6	X	6	X	4	6	6	X	2
B	6	X	6	X	5	X	6	X	3	6	5	X	6	X	0
G	5	X	6	X	5	X	6	X	4	6	6	X	6	X	4
Total: 17															
Pass	6	17	14	17	5	15	14	17	3	16	4	12	10	17	1
Fail/Did not	11	0	3	0	12	2	3	0	14	1	13	5	7	0	16