



It's All About the Brain!

How to Use Music to Unlock Baby's Brain for Reading



Early Childhood Investigations, August 19, 2026

Ann C. Kay, Co-Founder & Education Coordinator

Rock 'n' Read Project

rocknreadproject.org

ann@mrproject.org

I'm all about that bass, or...



[Video](#)

*I'm all about the brain, 'bout the brain,
no trouble!*

Why make music?

For fun, motivation, joy, cultural, self-expression, identity, creativity, social skills, persistence, discipline, confidence, sense of accomplishment, challenge...

And now science has added another:

Brain development

Music activates the brain

The effect of music is "like fireworks going off in the brain. No other activity has been seen to have such an effect on the whole brain. Music is a whole brain workout."

- Dr Anita Collins



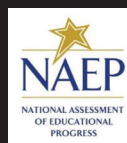
Daniel's story



[Video](#)

The Injustice of Illiteracy

More than 1/3 of American 4th graders
cannot read at a basic level



2024

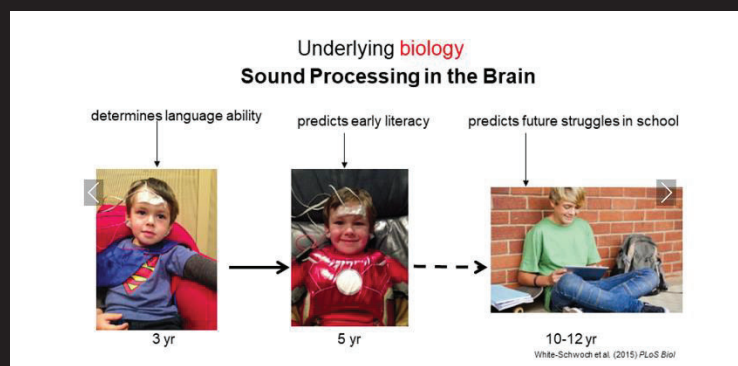
A research-based solution

Use singing and basic music skills to develop auditory processing, the foundation of language and literacy.

What is more important for reading...

sight or sound?

Language is sound



Neurobiologist Dr. Nina Kraus
Auditory Neuroscience Laboratory
Northwestern University, IL

Sound processing begins in womb



Photo: Andre Adjahoe/Unsplash

Singing develops sound processing



Singing is natural



[Video](#)

Singing precedes talking



[Video](#)

Your turn!

1. Share a song or singing game from your childhood.
2. Why do you think you remember it?
3. What feelings do you associate with your song?

Research

These brain functions are correlated
with reading achievement

- Auditory processing
- Auditory memory
- Phonological awareness
- Beat synchronization

Kareem Weaver

Reading activist, former principal and teacher
Produced award-winning documentary *Right to Read*



[Online interview](#)

Children who cannot pat a steady beat are likely to struggle with reading.



Auditory Neuroscience Laboratory
Northwestern University, IL



Rock 'n' Read Project

MN nonprofit founded in 2014

Vision

Every child is nurtured with singing and music-making because adults in their lives understand how music builds the brain for reading.

Mission

We help families, educators, and organizations use singing and basic music skills to develop young brains for reading by providing training and resources.



State-Funded 5-Year Project

Summer pilot

- Mobile computer lab
- Tune into Reading (TIR) software
- Students made ½-year gain in reading after 10 hours of singing

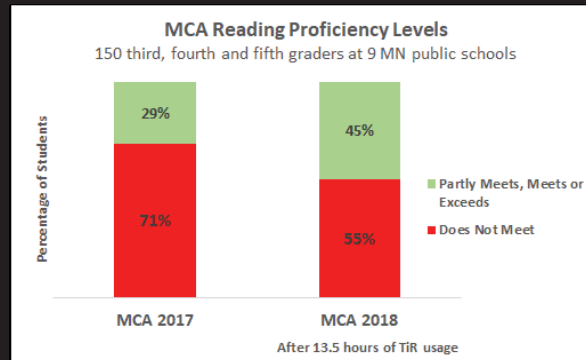


5-year state project

- \$600,000 from MN Legislature
- 2500 2nd-5th graders in 25 schools

Results

1/3 of 4th and 5th graders improved from Does Not Meet to Partly Meets proficiency on the state reading test (MCA). This affirmed existing research: students gain 1 year (avg.) in reading achievement after 13.5 hours of usage.



Rock 'n' Read Project has now shifted to helping parents and early childhood educators teach:

Basic music skills

1. Pat a steady beat.
2. Clap the rhythm of the words of a song.
3. Match a pitch.
4. Sing in tune.

Myths

#1 Music is a special talent that only some people have.

Not true. Music is a human ability that develops through practice. Every culture makes music, and every baby is born with the capacity to be musical. Songs are a powerful way to learn language.

#2 Adults who can't keep a beat/sing in tune are hopeless.

Also false. Adults can improve their rhythm and pitch skills by practicing with apps, programs, or lessons. Like any skill, musical fitness grows with experience.

Rock Your Baby!

by Ann C. Kay

Mama, rock your baby, rock your baby so sweet,
Sing a song and tap along on baby to the beat.
Daddy, bounce your baby, bounce your baby so sweet,
Dance to the music, put the beat in your feet.

Have your child pat the beat, this is how it trains
A vital neuro network that the brain retains.
Children who sing songs develop smarter brains
That know more words and make greater gains.

So, Mama, rock your baby, rock your baby so sweet,
Sing a song and tap along on baby to the beat.
Daddy, bounce your baby, bounce your baby so sweet,
Dance to the music, put the beat in your feet.



Photo: William Fortunato/Pexels

Sing your day away!

From prenatal on



[Video from Baby in Tune](#)

Sing-read illustrated song tales

Available in most languages



Feel the beat

5-month old



[Video](#)

Keep the beat

10-month old with 3 year-old



[Video](#)

Hand-clap the beat



[Video](#)

Pat the beat



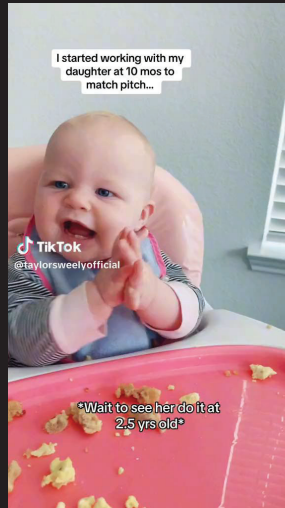
- Metronome
Free app: <https://youtu.be/l7mFvUI9HiA>
Free online: <https://www.online-stopwatch.com/online-metronome/>
- Choose a speed (such as 120 beats/min.).
- Pat beat with two hands on laps.
- Choose a faster beat and match. Slower beat.
- Pat beat with two hands on other body parts.
- Chant a rhyme or sing a song while patting underlying beat (any language, any culture!)

Clap the rhythm

- Clap the rhythm of the words—every syllable
- Alternate between patting the beat and clapping the rhythm of the words (every syllable).



Match pitch



[Video](#)

Sing in tune

18 months

Imitating and filling in words



[Video](#)

24 months

Spontaneous singing



[Video](#)

26 months

Singing a song in tune



[Video](#)

Match pitch



- Pitch pipe app <https://pitchpipe.app/#/>
Tone generator online <https://www.szynalski.com/tone-generator/>
- Play a pitch. Children try to match singing "oo." Try with another pitch.
- Play a low pitch (such as low C) and a higher pitch (such as high C). Ask "Is the second pitch higher or lower than the first pitch?" With palm facing floor, use hand to indicate higher or lower.
- Play a pitch and ask a child who is able to match it to sing it first. Ask the other children to match that child's voice.

Note:

Most young children cannot produce sounds much below middle C, so adults usually have to sing higher than usual so children can match.

Sing in tune

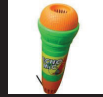
Exercise vocal range

Use a metal slide whistle to make patterns of sound for children to echo. Later, play question/answer phrases.



Amplify voice

Sing into an echo microphone.



Fill in

Sing a song, such as *Itsy Bitsy Spider*, while patting the beat on lap while teacher sings song, stopping before the last word of each phrase and children sing the word ("spout.")

Pass a song

All pat beat while teacher sings first phrase, children sing next phrase, etc. Then, half the group sings one phrase, then other half sings next phrase.

Sing Today, Read Forever activity cards

[Free Download](#)

English



Spanish



Somali



Your turn

1. What are your favorite songs—in any language?
2. How could you practice basic music skills with your favorite songs?

Assess basic music skills

[free on our website](#)

ROCK 'N' READ Musical Fitness Assessment
Sing Today-Read Forever
MUSICAL FITNESS IS THE ABILITY TO PERFORM BASIC MUSIC SKILLS

Child's Name: _____ Date: _____

MATERIALS

- www.RocknReadProject.org
- A metronome app
- Pitch pipe app or online tone generator

NOTE: Don't worry if you are unable to match a pitch or sing in tune. You will probably be able to tell whether others are able to do it, even if you can't.

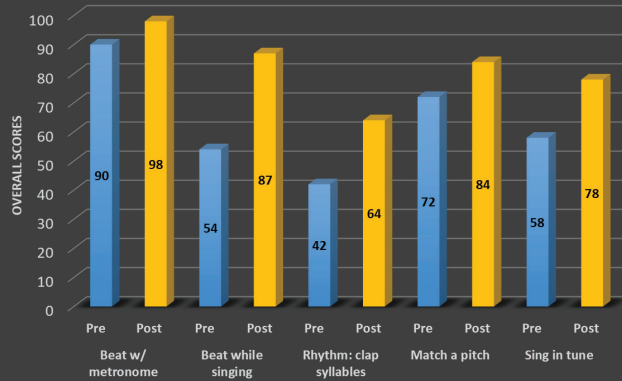
KEEP THE BEAT 1. Open the metronome. Set to 120 beats/minute. 2. Show how to pat with both hands on your lap exactly at the same time as the click sound. 3. Ask child to pat the beat with both hands.	Did they match the beat? ☐ No ☐ Partly ☐ Yes
KEEP THE BEAT WITH A SONG 1. Together, pat a slower beat with both hands on lap and sing "Twinkle, Twinkle Little Star" (each underline represents a beat). 2. Ask child to sing it again without you, while patting. 3. If they don't know the words, just ask them to sing the tune using "Doo doo doo doo..."	Did they keep the steady beat? ☐ No ☐ Partly ☐ Yes
CLAP THE RHYTHM 1. Ask child to clap how the words go in "Twinkle" while singing the song, one clap for each syllable. 2. Show them how to clap two times for the last word "Twinkle". 3. Ask child to sing and clap whole song alone.	Did they clap each sound? ☐ No ☐ Partly ☐ Yes
MATCH A PITCH 1. Open the pitch pipe app or online tone generator. 2. Play C (Middle C) using a tone generator. 3. Ask child to match the pitch on "do".	Did they match the pitch? ☐ No ☐ Yes
SING IN TUNE 1. Ask child to sing "Twinkle" again.	Did they sing the song in tune? ☐ No ☐ Partly ☐ Yes

pg. 2 A ROCK 'N' READ MUSICAL FITNESS ASSESSMENT

Sing Today, Read Forever project

MUSIC SKILLS ASSESSMENT

57 Head Start PreK children sang songs daily that their teachers chose in any language while practicing music skills for 4 months. Every skill improved. Most improved: keeping a beat while singing.

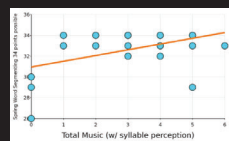


Music skills correlated with reading

1st graders

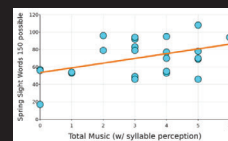
Orange line shows that as music skills increased, so did reading scores

Segmenting



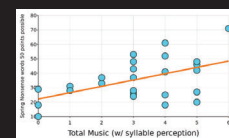
Music skills

Sight words



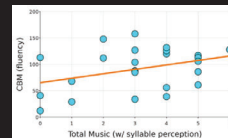
Music skills

Nonsense words



Music skills

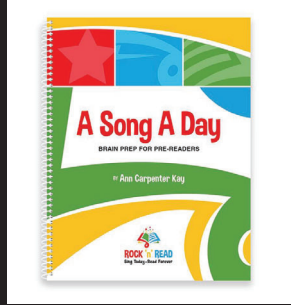
Fluency



Music skills

A Song a Day! Brain Prep for Pre-Readers

for 4-, 5-, and 6-year-olds



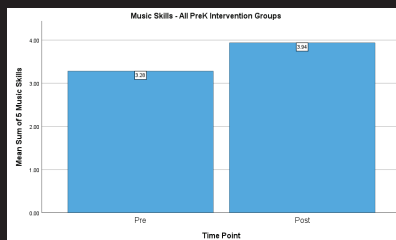
50 fun, short lessons that use singing and music skills to develop 17 pre-reading skills



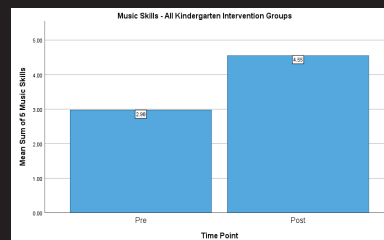
A Song a Day lessons improves music skills

15 minutes/day for 50 days

Preschool



Kindergarten

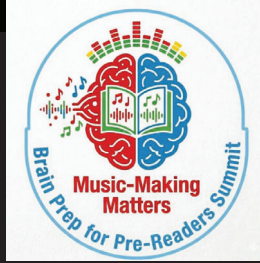


Wilder Foundation research 2023

Musical Fitness Movement



All children musically fit and ready to read by kindergarten



Fall 2026 – Minnesota

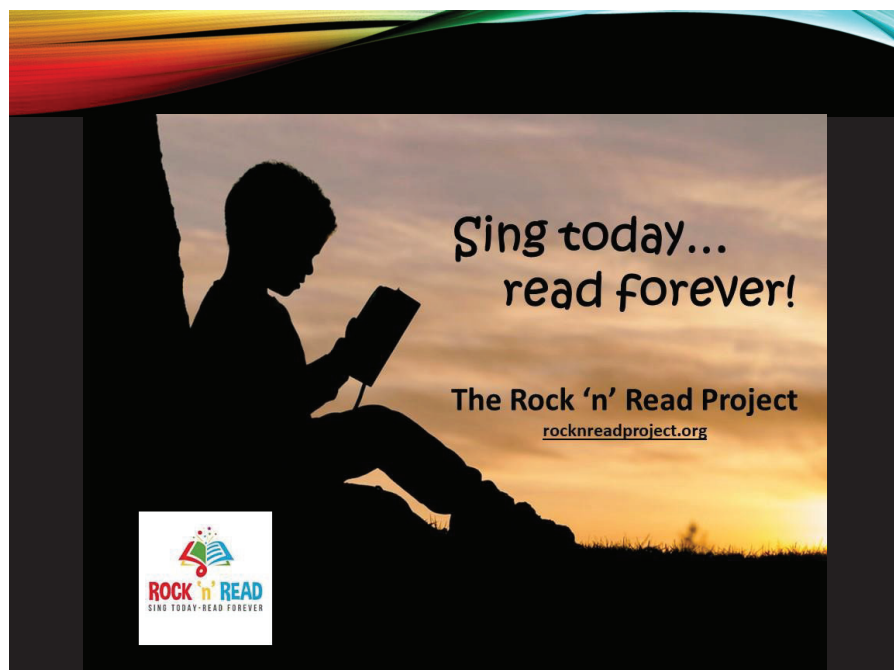
1. Neuroscientist presents current brain research
2. Evidence-based strategies for children
3. Launch a musical fitness movement

Your turn

Comments

Questions

New actions you will take



It's All About the Brain! How to Use Music to Unlock Baby's Brain for Reading

Ann C. Kay

Early Childhood Investigations

August 19, 2026

NOTES

Brain Research

Research studies have found that auditory processing is the foundation of language and literacy, and that singing and basic music skills help develop it. For example, children who cannot keep a steady beat are likely to struggle with reading.

- [Auditory Neuroscience Laboratory, Northwestern University](#)
- [Research Bibliography: Effects of Music-Making on Brain Development and Achievement](#)
- [The Relationship Between Musical Training and Early Reading Skills](#)

Rock 'n' Read Project

A Minnesota 501c3 nonprofit that helps families, educators, and organizations use singing and basic music skills to develop young brains for reading. Prior to our current focus on early childhood, the MN Legislature awarded \$600,000 to Rock 'n' Read Project to conduct a five-year state project that helped 2500 elementary students gain one year (avg.) in reading after 14 hours of using a singing-based software program. In 2021, Rock 'n' Read shifted to early childhood.

Materials & Training

Rock 'n' Read Project offers:

- [A Song A Day: Brain Prep for Pre-Readers](#) Research- and evidence-based curriculum for 4- to 6-year-olds that uses singing and basic music skills to develop brains for reading
- Free [Brain Train Activities](#) and a [Musical Fitness Assessment](#)
- [Professional development](#) for early childhood educators and kindergarten teachers
- [Evidence of effectiveness](#) of our programs and projects