

Orchestra Students' Version of: (Chapter 2 How your brain composes music)

Every Brain Needs Music: The Neuroscience of Making and Listening to Music by Larry S. Sherman & Dennis Plies

Music is everywhere and anytime like at coronations, funerals, weddings, etc. **Afton, Grade 6**

Music is a language. **Azalea, Grade 6**

Music is a social instinct that governs our social evolution. Music is a cultural and connective force. **Silas, Grade 7**

Music serves as an organizing cultural activity. It can promote human well-being and similarly represents universal language. **Jasmine, Grade 7**

Charles Darwin suggests that music is a social instinct. **Archer, Grade 6**

Music might have been created by vocalization or banging on a rock. **Felipe, Grade 6**

Music is embodied language, social instinct, and our roots. Music is our roots, and a language lots of us use to connect. **Jamee, Grade 6**

Humans use music to communicate emotion. **Dom, Grade 7**

Music is most likely the first thing we hear when we're born. **Jocelyn, Grade 7**

Babies and people use pitch to show and express their emotions. Babies have heard music from their mothers for a long time. Lots of people use different pitches when talking to a baby. Pitches show people your emotions. **Jamee, Grade 6**

Humans want to communicate and connect with others for meaning and purpose. Music is the first thing infants hear. **Archer, Grade 6**

Humans use music to communicate emotion. **Logan, Grade 6**

Human mothers have an instinct to sing songs to their babies like a lullaby to soothe the infant down. **Bonita, Grade 6**

Our brains' understanding of music is developed at a young age. **Aidan, Grade 8**

The brain processes sounds. **Adan, Grade 8**

Music can boost imagination. **Rose, Grade 6**

Music can help us connect with others. **Vesper, Grade 8**

Music is one of the first things infants hear from their mother's singing. **Carlee, Grade 8**

Human mothers would sing to calm the infants down and use high pitch to talk to them and sing/speak and scientists think that music came first before language. **Lillian, Grade 6**

How people compose music is when a person has an idea or makes noise. By experimenting you can make beautiful pieces. But revise things like audiation, rhythm, etc. **Viviana, Grade 6**

There's a difference between composing and improvising. Audiation is hearing music in your head without it being in the outside world. **Vesper, Grade 8**

Audiation is the inner hearing of music. **Silas, Grade 7**

Today, we read about reasons why people compose music. These reasons include a product, for teaching, to give a message, and many more. **Andrew, Grade 8**

Composers write music based on the purpose. Tinkering plays a big part in composing. **Vivian, Grade 9**

When composing music, people often sit down and experiment with notes or chords. **Emma, Grade 8**

Composing is a process of improvising and revising with sounds using your curiosity. **Julia, Grade 10**

Composing is a creative process and you need to be able to improvise as part of that process. Various composers were studied using MRI machines and it showed that similar parts of the brain were used for composition. **Audra, Grade 7**

Music is formed through experimentation and composers use different strategies to put things together. Things can come from either improvisation or organized thought. **Kaylee, Grade 10**

The composing of music includes improvisation. **Roni, Grade 10**

Experimenting and noodling with sounds was how music was made. Composing is different from improvising. Composing is having it written/ planned. Improvising is making it up throughout the process. **Jasmine, Grade 7**

The foundation of composing is "inner hearing". **Ben, Grade 11**

Curiosity lead to new musical ideas. **Chloe H., Grade 6**

Curiosity is a form of internal motivation that drives composers to create new pieces. **Inara, Grade 7**

Humans (and cats) explore for something new and exciting. This is curiosity. Curiosity helps us to be motivated, and helps us with music composition. **Viviana, Grade 7**

Curiosity is a really big part of creating music. **Ayla, Grade 10**

Curiosity is an essential part of learning and, most importantly, composing music. Curiosity leads us to experiment and put two things together to make something new. **Chris, Grade 12**

Curiosity drives us to learn and lets us combine what we know with what's new and drives creativity, which changes how we think. **Olevia, Grade 7**

Curiosity is essential for creativity. **Jamee, Grade 6**

Improvising and composing are different. **Emily, Grade 7**

Improvising is based off of structure. **Julia, Grade 10**

Improvisation is when you make things up when you play. **Afton, Grade 6**

Improvisation = “without provision”. You make it up as you go, but with rules. **Siana, Grade 6**

Studies of musicians using MRI and fMRI machines shows how their brain works while actively improvising or composing. **Sandy, Grade 7**

Improvisation activates parts in the brain used for conversation, speech, and language, but not focused on the meaning of the language. **Olevia, Grade 7**

Improvising jazz music activates motor functions and sensory areas in the brain. **Julia, Grade 10**

Jazz musicians’ frontal lobes are not as activated while improvising as classical musicians improvising. **Taylor, Grade 7**

Classically trained musicians utilized different processes when they improvised compared to jazz musicians. **Jose, Grade 9**

Jazz musicians do a lot of improvisation. Scientists found that jazz musicians have some parts of their brain deactivated that are about thinking. Classically trained musicians use different parts of the brain while improvising. **Jasmine, Grade 7**

Question: If you tested the same things on neuro-divergent people, how would the results differ? What if someone measured multiple instruments with different techniques? **Mac, Grade 9**

Solo vs. Team: improvisation upon another’s music activates parts of the brain that deal with verbal communication except the parts tied to comprehension. When improvising solo, these parts do not activate in favor of “letting go”. Composing vs. improvising: Improvisation requires an agreement or some structure such as melody, tempo, etc. Composing is all planned and coordinated. **Chris, Grade 12**

Composing is edited and improvising is not. Each time a tune is made it might change. **Landon, Grade 8**

Composing involves both planning and revising combined with a creative process that’s led by curiosity. **Jasmine, Grade 7**

Some think improvisation cannot be taught. It could be that those who are able to improvise naturally are more creative, less visual, and have a different structured brain, because they rely less on memory. We’re not sure if we are born with these differences or if they are developed with experience. **Kaylee, Grade 11**

Music can be a theme or you can identify a theme. Music is both motivation and inspiration. **Xyshon, Grade 7**

You can use music to express emotion. Composers may compose out of sorrow or hardship more often than joy or celebration. **Regina, Grade 6**

Your brain’s curiosity can lead you to create great things, even in times of pain and challenges. **Claire, Grade 9**

Improvising can only occur because it is based on structure or agreement. One may also improvise in the composition process. **Mylee, Grade 11**

When you compose music and write it down, anyone can play it even 300 years later. **Silas, Grade 7**

We constantly explore to learn the world around us for new information; this is curiosity. Curiosity drives us to learn new things. **Jasmine, Grade 7**

Most professionals lose track of the time of day while playing and instead of using words, they pour out their emotions into sounds and music. **Jocelyn, Grade 7**

The book refers to music as a drug since it is so addictive to listen to. **Xavier, Grade 7**

Beethoven's drive to create something unique was a reflection of curiosity. Our brains feel rewards for something novel or unpredictable because of our curiosity. If it's predictable, we become bored. **Olevia, Grade 7.**

Beethoven was deaf but he still tried to make music. He still tried even after having lead poisoning. **Laylani, Grade 6**

Over time, Beethoven was influenced by curiosity and creativity, driving him to make his music more and more unique. **Vesper (Emma), Grade 8**

Hammerklavier by Beethoven is complex music. Beethoven created new things by exploring his curiosity. He became "less predictable" later in his career. **Kaylee, Grade 11**

Hammerklavier was thought to be unplayable until Liszt proved everyone wrong when he played it for an audience. **Inara, Grade 6**

Beethoven wrote lots of music that could have been from him falling in love. **Felipe, Grade 6**

Beethoven's music become more complicated as his curiosity grew. Composing involves planning, improvising, and revising. Classical music activates different parts of the brain than jazz improvisation. **Chloe T., Grade 10**

Question: I wonder what changed throughout Beethoven's sonatas? How did his brain function to help him create music when he was deaf? I wish we could have scanned his brain while he composed. **Vivian, Grade 9**

Curiosity can drive music to be less predictable and unique and new. **Hannah, Grade 10**

A composer's music style can change due to curiosity and exploration. **Dylan, Grade 7**

Composers say that in order to improvise, you have to "throw them in the deep end." Studies show that different people are at different levels because of improvisation. This skill is developed over time by working hard, and the brain is developed. **Viviana, Grade 7**

The brain treats music like verbal communication without the meaning of the words. **Jocelyn, Grade 7**

The brain treats music much like it does speech, minus the actual speaking/talking part. It has more of the tone compared to the talking part of speaking. **Inara, Grade 7**

A study of jazz pianists "traded" music with each other, like a "language", or a conversation. The conversation lit up the brain. This also lit up the hearing part of our brain. The brain treats music just like it treats everyday conversations. **Viviana, Grade 7**

Your brain activates differently when improvising music with someone else rather than by yourself.

Question: Does this mean our brain works harder when creating music with others? **Vivian, Grade 9**

When composing and improvising, the language and empathy part of the brain are being used.

Composing and improvising are a learned thing and not everyone can do it. **Dylan, Grade 7**

Different parts of the brain work when we improvise alone and different parts when we improvise with others. **Audra, Grade 7**

Improvisation is not something that can be studied at a distance. You must go all in at it (throw yourself in the deep end). **Adan, Grade 8**

Studies show that you are good at improvising because you do it a lot and then the visual and motor areas of the brain are actually disconnected while improvising. **Regina, Grade 6**

When I was little, I spent recess improvising music. I started writing it down when I was nine and when I was 12-13 I started adding chords to it. I started writing instrumental music when I was 14-15. I never realized that these all took different parts of my brain to do, but I suppose that makes sense. **Anna, Grade 12**

Question: Can imagining rhythm come up on the color brain MRI or fMRI scan? If so, would it just be one color if the rhythm sounds like tapping? If someone has synesthesia, would someone's music hobby be different? Would they have color explosions on each song? (*Synesthesia is when you hear music, but you see shapes. Or you hear a word or a name and instantly see a color. Synesthesia is a fancy name for when you experience one of your senses through another. For example, you might hear the name "Alex" and see green. Or you might read the word "street" and taste citrus fruit.*) **Natalie, Grade 9**