

Orchestra Students' Version of: (Introduction and Chapter One)

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

## **Introduction**

Music and the human brain cannot live without each other. Humans have used music from the beginning and this book explains how people create wonderful music. It explains how we hear music and how music works.

*Miranda, Grade 6*

This book is about the relationship the human brain has with the music/sound that it creates. *Vivian, Grade 9*

“Cool” book. The book explains what music is. Musicians spend so much time trying to get really amazing at music, then they go to an audience! *Zelda, Grade 6*

When we hear music and see the notes, we can play. *Millie, Grade 6*

This book shows the relationships between people’s brains and music. *Julia, Grade 10*

Music is air molecules, but without a “receptor” in your brain, would it really be music? Music is ideas, sounds and symbols. *Mac, Grade 9*

This book is about the way music and the brain coexist and how the brain processes music; how the brain and music can’t survive without each other. *Olevia, Grade 7*

The first movement (chapter) explores the question “What is music?” Music is just vibrations in the air created by an instrument or recorder. It is received by our ears and interpreted by our brains. *Chris, Grade 12*

Music can change the brain of the people who make the music who play the music and who hear the music. People hearing music can give them ideas to repeat the cycle by making new music for different people or even the same. *Silas, Grade 7*

## **Chapter One**

What is music? If an alien landed in your yard, how would you describe music? A sound made of beauty and grace, made with chords and strings, made of thoughts and mind, made of ideas and people. *Taylor, Grade 7*

There are 4 parts of the brain; each doing different things. *Dylan, Grade 7*

The brain weighs around 3.3 pounds. *Eli, Grade 10*

There are unique connections in our brains because of playing and listening to music. *Roni, Grade 9*

The brain has different functions that help perceive music. Every part of the brain helps to contribute to music, it’s interesting. *Eli, Grade 10*

The brain has parts with different jobs. *Jayden, Grade 6*

The human brain has many parts that work together. *Hannah, Grade 10*

Neurons talk to one another, forming the circuits of our nervous system. We have unique connections in our brain because of playing new instruments. *Hannah, Grade 10*

Dendrites accept electrical signals (music) that go to the cell, then along the axon, then goes to other dendrites creating the circuit of our brains, letting us do things like play music. *Julia, Grade 10*

The brain is like a telephone game. *Jamee, Grade 6*

The brain has 171 billion cells! Around 86 billion are neurons. Neurons help us understand the world around us, including understanding music. There are also dendrites, which help the brain and all its parts connect through axons coated in myelin. *Viviana, Grade 7*

The brain is made of billions of cells. The brain reacts to music; music may illicit feelings of joy or sadness. Neurons communicate with each other – from dendrites to axons. They meet at synapses to transfer impulses (information). *Chris, Grade 12*

Synapses are the spaces between neurons. *Claire, Grade 7*

A Synapse is energy that goes through neurotransmitters and can be electrical or chemical energy. *Mac, Grade 9*

A synapse is when a chemical or electrical charge jumps from one neuron to another. *Wyatt, Grade 9*

Neurons can talk to each other. *Rose, Grade 6*

The dendrites accept electrical signals (music) that go to the cell, then along the axon, then go to other dendrites, creating the circuit of our brains, letting us do things like play music. *Julia, Grade 10*

There is a connection between all neurons and they send little signals to each other like an orchestra. *Vivian, Grade 9*

The vibrating air molecules that are generated enter the human ear. *Carlee, Grade 7*

Sound turns from mechanical energy (bones vibrating in the ear) to electrical energy before it reaches the brain. *Rose, Grade 6*

The sound that goes into our ears is brought up to the thalamus and the thalamus gives the signal to the other parts of the brain. *Yurianna, Grade 6*

The thalamus is located above the brain stem and is the relay station for almost all sensory information going into the brain. The auditory cortex then sorts the sounds out and then it gets transferred to other parts of the brain. *Inara, Grade 7*

It is unclear why the brain differentiates music from other things. *Viviana, Grade 7*

A special device called the fMRI detects changes in blood pressure in a human like when music triggers neurons in the brain. *Vesper, Grade 8*

fMRIs show how music is affecting your brain and where it does. *Jocelyn, Grade 7*

Music activates changes in blood vessels in certain areas of the brain. *Olevia, Grade 7*

Parts of your brain lights up when it hears music. *Sandy, Grade 7*

When we listen to music, our brains process rhythm, pitch, tempo, contour, reverberation, and loudness. *Sophia, Grade 10*

The brain has enjoyed music since the beginning of humanity. *Dom, Grade 7*

Music has likely been a part of the human experience from the beginning. We have parts in our brains that are really in tune with music.

40,000 years ago there were flutes made of bone. There could have also been other instruments way before that. Music has been around for around 43,000 years. *Silas, Grade 7*

Music is a core experience, all societies have some form of music, and humans from all over the world participate in it. We use music in many ways, whether it's emotional, or physical, we use it for connections.

**Olevia, Grade 7**

Music is a social instinct. First, human mothers vocalized to calm down kids. Words can change with different pitches. The language of a tribe in the Amazon is mostly sounds and music. Music provides creativity and is important to mankind. **Felipe, Grade 6**

There is actually a language fully based on music. **Ryan, Grade 11**

As social beings, humans want to communicate and connect with others for meaning and purpose. **Mylee, Grade 10**

Our language is founded on music, it allows us to interpret things in new ways and say things differently. Music is the universal language of the Homo sapiens. **Anna, Grade 12**

People sing and coo to their babies to get their attention or to stop crying. **Millie, Grade 6**

Our musical abilities start as young as childbirth. Music is in all cultures and is the foundation of language. We are hard-wired to create music. **Gabriel, Grade 12**

One of the first things infants hear is music, mothers instinctively sing to their child to soothe them. We notice pitch fluctuations in language just like we do in music. **Chris, Grade 12**

Pairing music with other things like the alphabet song helps us learn faster because our brains are tuned to recognize music. **Wyatt, Grade 9**

Music helps us in many ways, including communication, learning faster (ABC Song), and warning people and telling them what to do (Underground Railroad). **Miranda, Grade 6**

The Underground Railroad used songs to lead people who didn't know how to spell, write, etc. **Siana, Grade 6**

Harriett Tubman freed her people using music. **Zeek, Grade 10**

Music is an amazing way to communicate. Learning things becomes easier and faster if there's music involved. **Julia, Grade 11**

Every nation on earth has music. Music is a great kind of expression. **Eddie, Grade 6**

People usually have music at cultural events. Sometimes people use it to express their emotions. **Regina, Grade 6**