

Chapter Four

Lend Me an Ear

The human brain is the most important musical instrument of all.

—Keith Lockhart



Music engages regions of the brain involved with paying attention, making predictions, and updating an event in memory. You perceive music in more than one way, too.

Unimpaired, your brain hears the musical sounds through your ears, plus your skin senses the music as the sound waves beat against it.

Of all the arts, music has the closest link to the brain and body. Its rhythms are analogous to breathing, walking, and heartbeat. It has enormous power to communicate emotion, an ability that appears to reflect a built-in process beyond cultural conditioning.

As George Szell put it, “In music one must think with the heart and feel with the brain.”

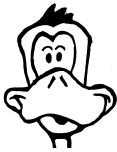
Music can shift attitudes as well as feelings. It can hurry you along or put you to sleep, tell you stories, prompt you to dance, influence the type of products you purchase, promote healing, sharpen your creative powers, and cause shivers of pleasure.

Music can alter the brain's electrical rhythms. And your heart rate will synchronize with music, speeding up or slowing down accordingly. In short, music is powerful!

More than 300 years ago the French composer François Couperin declared children should begin studying instruments by age six or seven. Learning music at an early age can lead to long-term gains in activities that require the use of reasoning skills, of which math and science are two prime examples.

Studies have shown that the corpus callosum (one of the bridges connecting the right and left brain hemispheres) is 10-15% thicker in musicians who started training before the age of 7 than in nonmusicians. Musical training can impact both how the brain works and how it is built (e.g., can enhance learning, memory, and intelligence).

Did You Know?



When you sight-read music, especially at the piano, you recruit and rapidly coordinate almost every major area of your brain. There are few other activities that challenge so many portions of your brain at the same time.

Musical Metronome

Complete the puzzle so that the required numbers, letters, and symbols are used only once in every 3-by-3 box, every row, and every column: COUNT 1 2 🕒 4

		U			1	T		
	1			🕒			4	
N			U			1		
	T	4	N	O				
🕒	C							2
				1	🕒	4	O	
		1			T			4
	U			2			T	
		2	🕒			U		

True or False – Slowing



In music, slow tempos and minor keys tend to slow the brain's cortical and limbic areas.

Pairs Playing

Music can help bridge generations even as it stimulates the brain. The story is told of a musical encounter between Pinchas Zukerman, the brilliant violinist and conductor of Canada's National Arts Centre Orchestra, and his father, also a violinist.

The older Zukerman had an impaired right hand due to a stroke and had ceased playing his beloved violin.

One day while visiting his father in Israel, Pinchas held up a violin and asked whether his father would like to play a favorite concerto. Puzzled, the father reminded his son, "I don't have the right hand."

Smiling, Pinchas placed the violin in his father's undamaged left hand and, standing behind him, plied the bow as the two men played in harmony.

Two generations, two brains, and one violin. One man using his right hemisphere and left hand, the other his left hemisphere and right hand.

Did You Know?

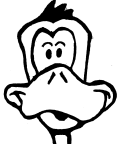


Playing a musical instrument is one way to challenge the brain and give it a good workout. Playing a musical instrument exercises coordination between eye and hand and stimulates both the creative and logical portions of the brain.

Brain Benders 4-1

1.	2.
RATION__	MOEKATVIE
3.	4.
BRIDGE N E O R W E H H E W R O E N	D C R O I A V S E T
5.	6.
GNINNUR FUMES	PENC IL
7.	8.
DEAD_	TRADINSIDERING
9.	10.
GET DRAOB	YRD

Did You Know?



The California Marsh Wren may sing as many as 120 themes in a given jam session. And humpback whales, capable of vocalizing over a range of at least seven octaves, have been found to use rhythms similar to those found in human music. They can sing in tune, and their songs contain refrains that rhyme.

Music Recall

Songs can help to coordinate hemispheric functions: the right hemisphere learns the melody while the left hemisphere learns the words. Think of a favorite song with words.

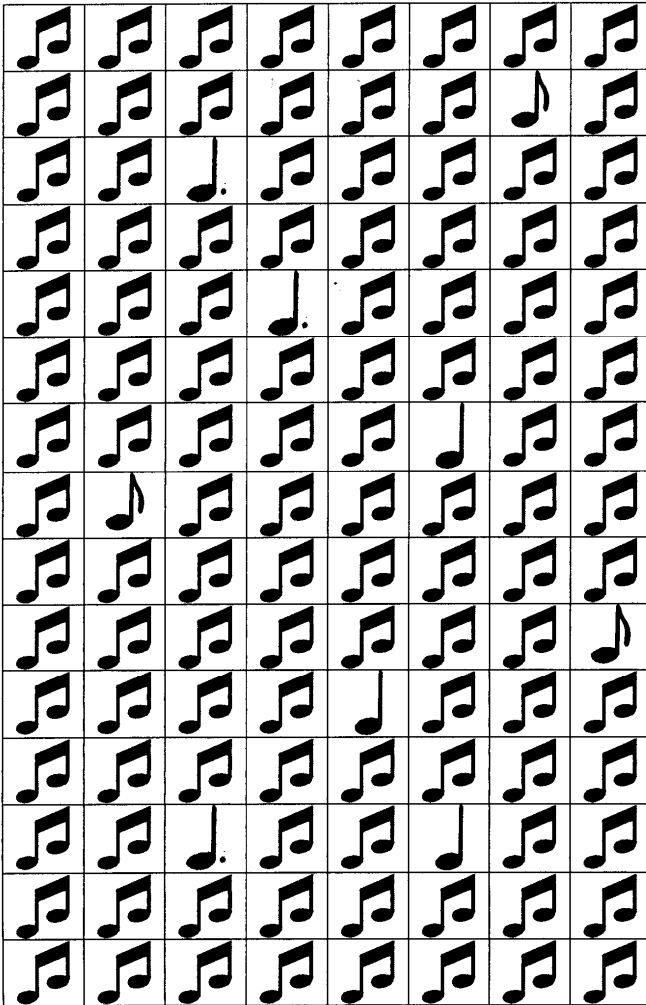
- Hum and then whistle the melody
- Recall the title and the words
- Identify the songwriter and singer

Now listen to a selection of music without words.

- Recall its title and identify the composer
- Recall the name of the performer(s)
- Pay attention to the music's "mood"
- Tap your hand to keep time to the beat

The Notes Have It!

Count the differences



Brain Benders 4-2

1. BDOOGOOD TRUEB UR	2. BATS
3. ROUTINE	4. CLEAN
5. ARRIVE EMIT	6. BOWLING NEERG
7. TANIAPIL	8. KICK
9. DECADE<u> </u>	10. FLKCALABSH

Musical Challenge

Complete the puzzle so that the required numbers and symbols are used only once in every 3-by-3 box, every row, and every column: 1 🕒 2 🔔 3 🎵 4 Υ 5

	🕒		🔔		2		3	
		1					5	
2		3				🕒		🔔
		🎵	🕒		3	🔔		
	2						1	
		🕒	4		Υ	5		
1		2				4		5
	5						🎵	3
	4		5		🔔		🕒	

True or False – Tandem



Songs can help to coordinate functions between the two brain hemispheres. The right hemisphere learns the melody while the left hemisphere learns the words.

Brain Benders 4-3

1.

**ARREST
RU**

2.

PAHSALFN

3.

NENIAPCK

4.

BELSTABFREY

5.

SDUPOLC

6.

**BATTAB
P
U**

7.

IT

8.

EHSHERSELF

9.

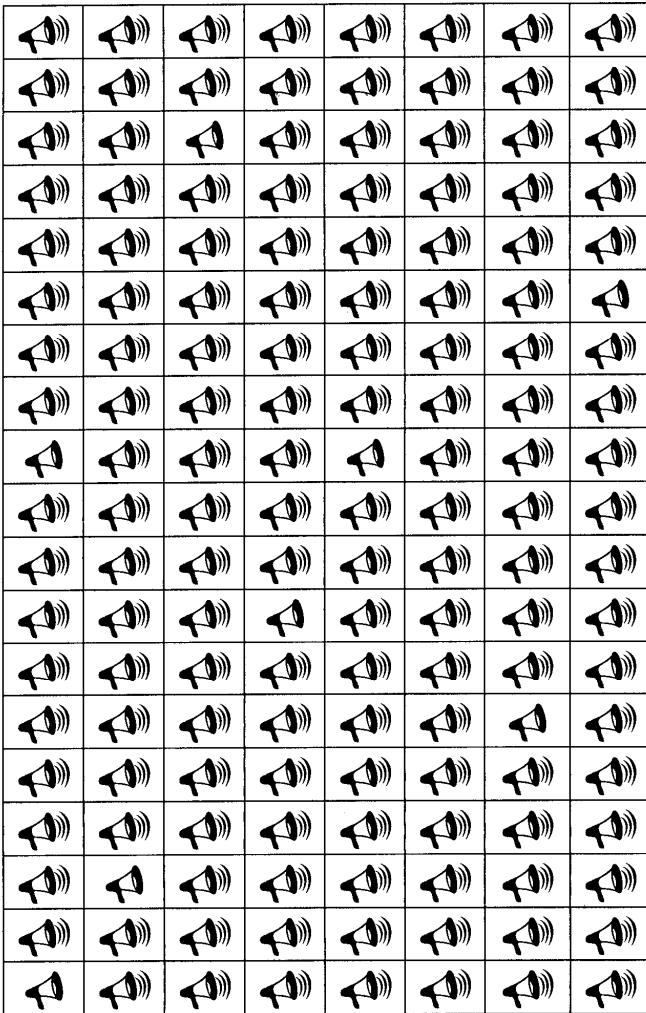
GROWING

10.

**PITYTIP
PITYTIP
SAKE**

Do You Hear What I Hear?

Count the differences



Brain Tip

Do yourself and the world a favor and become now the person you want to be when you are older

Brain Bits



It has been said that being young is beautiful, but being old is comfortable. Part of that comfort may come from learning to understand yourself better.

With time and increased awareness, you are better able to know what to give up in order to obtain what you need, and conversely, when to throw in the towel because the cost is too high. You figure out who you are innately and don't necessarily take the descriptions others have given of you at face value.

The aging process gives you that opportunity.

Your individual characteristics magnify with age and you actually become less like others and more like yourself. Become the person now you want to be then!

Identify the behavior you need to change and visualize yourself exhibiting that new behavior. This gives your brain a map to follow as it molds to the new ideal.