

# 1

## The Arts

### Music and the Mind



Music has always been important in our lives and traditions. Now, modern research is helping us understand just how strong the music-brain connection is. In fields like education and healthcare, more and more benefits of playing instruments and listening to music are being discovered.

#### Pre-reading Questions

Discuss these questions in pairs.

1. Do you play any musical instruments? If not, would you like to learn one?
2. Does listening to music make it easier for you to work or study?
3. Some people say learning to play an instrument can make you smarter. Do you agree or disagree? Why?

## Vocabulary Warm-up Disk1-2

**A** Read and listen to this list of the unit's target vocabulary. Write the letter of the target word or phrase next to the correct definition.

a. ability	f. expert	k. region
b. anticipate	g. instrument	l. remind
c. concentrate	h. no wonder	m. role
d. discover	i. organize	n. track
e. evidence	j. pour in	o. unique

- \_\_\_ 1. to arrange; sort
- \_\_\_ 2. to arrive or come in at a fast rate
- \_\_\_ 3. of course; that's why
- \_\_\_ 4. to find out
- \_\_\_ 5. to help someone remember
- \_\_\_ 6. skill
- \_\_\_ 7. purpose; function
- \_\_\_ 8. to focus
- \_\_\_ 9. to follow; keep up with
- \_\_\_ 10. proof

**B** Complete each sentence with a word or phrase from the list above. Remember to use the correct word form.

1. If we want to expand our business in Europe, we'll need to hire someone who is a(n) \_\_\_\_\_ in the market.
2. My favorite \_\_\_\_\_ is the piano, but my sister prefers the violin.
3. Because the singer's voice is so \_\_\_\_\_, it's easy to identify her songs.
4. I don't \_\_\_\_\_ any bad weather, but we'd better take an umbrella just to be safe.
5. That \_\_\_\_\_ of Indonesia is home to the world's rarest monkeys.

# Part 1: Reading and Vocabulary Building

## Reading Passage



Disk1-3

In all the world's cultures, people sing, play **instruments**, and celebrate with music. Music plays such an important **role** in our lives that whole fields are dedicated to its study, including one looking into the biology of music. **Experts** are finding that because of the way our brains process music, learning to play an instrument or just listening to music can have a wide range of benefits.

Music education has received a lot of attention in recent years. Learning to play an instrument can help children improve math, science, and language skills. One study in Canada **tracked** children's IQ scores for nine months, **discovering** that children who studied music had the largest test-score improvements. The secret may lie in the way reading music and playing notes uses several **regions** of the brain, boosting our **ability** to learn school subjects. For example, reading musical notes improves spatial reasoning skills, which are essential in solving math problems like fractions.



*Reading notes may be a reason why learning music improves math skills.*

Music is also used for medical purposes, such as in the treatment of diseases which affect memory. The secret lies in the way the brain processes music. One area near the forehead, the medial prefrontal cortex, connects music with memories stored in two other areas: the amygdala and hippocampus. That's why an old song can **remind** you of something that happened years ago. For patients suffering from diseases like Alzheimer's, listening to music can help unlock buried memories by strengthening musical pathways to those memories.

<sup>3</sup> dedicated to - focused on; committed to

<sup>4</sup> process - handle; deal with

<sup>9</sup> IQ - "Intelligence Quotient" (widely used measure of intelligence)

<sup>14</sup> boost - increase

<sup>16</sup> spatial reasoning - the ability to mentally process shapes and patterns

<sup>17</sup> fraction - part of a whole (ex: 1/2, 1/3)

<sup>23</sup> Alzheimer's - disease which affects memory (common among older people)

<sup>24</sup> buried - hidden; forgotten

25 Studies of the music-brain connection often focus on classical music since it activates both the left and right sides of our brains. One study using MRI scans observed people's brain activity as they listened to music  
 30 by composer William Boyce. The study found that activity was highest during the short breaks between the movements of a piece. During each pause, the person's brain **anticipated** what would come next while **organizing** what he or she had just  
 35 heard. This process of sorting beginnings and endings is similar to the way our brain organizes information and may explain why classical music can help improve memory.



*A controlled, relaxed environment helps music listeners.*

Some people are taking the brain-music connection to another level by listening to personalized "brain music." First, a person's brainwaves (which, like our  
 40 fingerprints, are **unique** to each of us) are measured. Then, using a mathematical procedure, the brainwaves are turned into short pieces of music. Listening to a "relaxing" piece (based on the person's slower brainwaves) can slow the heart rate and lower blood pressure. An "activating" piece (based on his or her faster waves) can help the person **concentrate** and prepare for a difficult task.

45 It's amazing how attuned our brains are to music. Some neuroscientists like Daniel Levitin even think we're born with the ability to learn music, just as we all have the skills to learn language. After all, children without any training frequently make up songs while they play. With the **evidence** of music's benefits **pouring in**, it's **no wonder** countries like Japan and Hungary make music study  
 50 a part of their educational systems. People are recognizing that more than just a form of entertainment, music is also great for the brain.

26 activate – turn on; make active

28 MRI (Magnetic Resonance Imaging) - device showing an internal image of a patient

30 composer – person who writes music

32 movement – section of a piece of classical music

39 personalized – specially made for one person

41 procedure – method; sequence

45 attuned to – sensitive towards; focused on

45 neuroscientist - a person who studies the brain and nervous system

48 make up – create

**Main Idea**

1. ( ) What is the main idea of the reading?
  - A. Music therapy is effective in treating Alzheimer’s patients.
  - B. The human brain is difficult to understand.
  - C. Besides being enjoyable, music has real-world applications.
  - D. It’s best to learn music at a very young age.

**Detail**

2. ( ) In the Canadian study, which children had increased IQ scores?
  - A. Those who had always listened to music
  - B. Those who studied music
  - C. Those who already had high IQs
  - D. Those who could not play an instrument

**Vocabulary**

3. ( ) In line 28, what does “observed” mean?
  - A. heightened
  - B. watched
  - C. preserved
  - D. composed

**Analysis**

4. ( ) Why may classical music help our memories?
  - A. Listening to it uses brain processes we also use to record memories.
  - B. Classical music is easier to play than other types of music.
  - C. It activates the left side of our brain, but not the right side.
  - D. Brain activity is highest when we listen to music being played.
5. ( ) What can we infer about “brain music”?
  - A. It may not be effective at treating disease.
  - B. Listening to the music is only helpful to those who excel at math.
  - C. Each person’s musical recording is different.
  - D. It is better at helping people relax than at helping them focus.

**Short Answers**

**Write a full-sentence answer to each question.**

1. How can reading musical notes make us better at math?

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2. What parts of the brain store memories?

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3. In "brain music," how are a person’s brainwaves turned into music?

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## Vocabulary Building

### A Choose the answer that is a synonym for the word or phrase in italics.

- The police usually do not arrest a person without *evidence* that he or she committed a crime.  
A. range                      B. activity                      C. proof
- Airports can *track* planes all the way from take-off to landing.  
A. follow                      B. suffer                      C. celebrate
- In that *region* of the country, the temperature often falls to 10 degrees below zero.  
A. movement                      B. attention                      C. area
- Considering all the money that shop is losing, it's *no wonder* they're going out of business.  
A. so unfortunate                      B. very recent                      C. not surprising
- Computers are great at helping people *organize* digital photos.  
A. relax                      B. sort                      C. concentrate

### B Complete each sentence below with one of these words or phrases. Remember to use the correct word form.

instrument                      pour in                      role                      unique                      ability

- After the scientist won the Nobel Prize for chemistry, job offers and research opportunities \_\_\_\_\_.
- The gallery sells \_\_\_\_\_ works of art from Mexico.
- My \_\_\_\_\_ in the company is to make sure shipments arrive at their intended destinations on time.
- The \_\_\_\_\_ to speak Chinese is a great asset these days.
- Orchestras include string \_\_\_\_\_ such as the violin, cello, and viola.

### C Circle the correct form of the words in parentheses.

- (Anticipate/Anticipation) is high that the recession will soon end.
- The person who (discovers/discovery) a new planet can also name it.
- The procedure requires total (concentrate/concentration), so the operating room must be kept very quiet.
- The watchmaker (expertly/expert) reassembled the antique clock.
- The website will send you a (remind/reminder) of your important appointments.

## Part 2: Focus Areas

### Focus on Language

#### Word Parts

Study the word parts in this chart. Then read the pairs of sentences that follow. Decide if the second sentence is true or false.

Word Part	Meaning	Examples
pre-	before; in front of	preface; preview
-form-	shape	informal; performance
-ful	full of	colorful; cheerful

1. The market survey's preliminary results show that people love the product.  
*It's the final set of results from the survey. (True / False)*
2. Mr. Lee is well known in the community for being truthful.  
*People think Mr. Lee is honest. (True / False)*
3. Sandra's political ideas don't conform to those of her classmates.  
*Sandra and her classmates have different political views. (True / False)*

#### Grammar

#### Adjective Clauses

We use adjective clauses to provide more information about a person, place, or thing. Depending on the type of noun being modified, we use the connector *who*, *whom*, *which*, *where*, or *that*.

person	who, whom, that	Ex: Lisa is the person <u>who</u> can help you.
place	where	Ex: This is the place <u>where</u> I was born.
thing	which, that	Ex: The CD <u>which</u> you want is over there.

**Combine the two sentences using an adjective clause.**

1. Toronto is a great city. You can find some great restaurants there.  
\_\_\_\_\_
2. This is a delicious fruit. It only grows in these mountains.  
\_\_\_\_\_
3. I'd like to introduce you to my friend. She works as a research assistant.  
\_\_\_\_\_

**Listening** Listen to the conversation. Then answer these questions.

Disk1-4

- ( ) What is the woman's occupation?  
(A) Graphic designer (B) Shift manager  
(C) Physical therapist (D) Sales associate
- ( ) What is the woman concerned about?  
(A) Her pay (B) Her new colleague  
(C) Her health (D) Her workload
- ( ) What does the man suggest doing?  
(A) Hiring another person  
(B) Quitting the job  
(C) Listening to soft music  
(D) Talking to the boss

**Reading** Read this article. Then answer the questions below.

For people looking for a unique gift for that special someone, the experts at Custom Creations might have the answer. The firm employs a dozen professional songwriters who can write a personalized song just for you. For a reasonable fee, you can have an original piece of music dedicated to your husband, wife, parent, or child.

Ted Simmons, CEO of the firm, has been writing lyrics for more than 20 years. He started out writing songs for commercials, movies, and pop singers. Then, anticipating a rise in the customized gift market, he founded Custom Creations. According to Mr. Simmons, his firm has written more than 2,000 songs and has brought countless smiles to clients' faces.

- ( ) How many people work at Custom Creations?  
(A) 1 (B) 12  
(C) 20 (D) 2,000
- ( ) The underlined word "founded" is closest in meaning to  
(A) located (B) purchased  
(C) established (D) imagined
- ( ) What did Ted Simmons do before founding the company?  
(A) He built movie sets.  
(B) He was a professional songwriter.  
(C) He worked at a customized gift shop.  
(D) He sang in a band.