**Reading and Writing for Assessment**

Find Supporting Details

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| Student: |  | Date: |  |

Read the following excerpt. Write down one supporting detail for each type listed below the excerpt.

**Excerpt from "Language Older Than Words"**

Jennifer Reyes

As a form of communication that predates language, music bypasses words to speak directly to emotion. The basic vocabulary of music is rooted not in words but in *pitch*, the frequency of wavelengths of sound, and *duration*, how long a sound lasts in time. Pitch and duration are not products of human invention but rather of the physics of the natural world.

The pitch of a sound has a powerful emotional effect. The lowest A on a piano has 28 hertz (a wavelength of 1,229 cm), a sound that evokes a growling bear or the rumble of a landslide. Such low pitches give listeners a feeling of impending doom. In the early 1980s, engineer Vic Tandy experienced the uncanny effects of even deeper pitches. While working alone designing medical equipment in a laboratory, Tandy suddenly broke into a cold sweat, felt the hairs on the back of his neck stand up, and had a blurred vision of a threatening figure lurking beside him. He fled. Later, he discovered that this "haunting" was actually due to a standing sound wave of 19 hertz, just below the audible range. It bounced off the walls of the laboratory and focused in the center, just where he had been working. Since then, scientists have discovered that this wavelength corresponds to the sub-audible sound of an earthquake. Animals that react with panic and dread to an earthquake before it is audible are responding to these deep wavelengths. Humans "hear" these deep pitches with their bodies instead of their ears and experience the overwhelming emotional response of threat. Back in the center of the audible sound range sits an A at 440 hertz (a wavelength of 78 centimeters), in the comfortable singing range of an alto voice. This pitch does not create the fear response of an angry bear or an impending earthquake but rather the comforting feeling of maternal love. At the upper end of the piano is an A at 7040 hertz (a wavelength of 5 centimeters), in the piping range of birdsong. Not surprisingly, this pitch sounds light and airy to human ears. In fact, many composers use pitches in this range to evoke the playful interchange of birds on a sunny day.

Duration is also key to the emotional impact of music. Most percussion instruments (including the piano) produce sound with a strong initial attack and a quick fade, evoking a feeling of brittle energy and precision. Long-duration sounds like those produced by the singing human voice, the drone of a bagpipe, or the song of a humpback whale have a much more mesmerizing effect. Notably, humans are the only great apes that can produce long, sustained, singing sounds. Chimps and gorillas can create only grunts and howls of short duration before they must take their next breath. It is no wonder, then, that brief bursts of sound in music strike us at least as energetic and perhaps as hostile, while the long, sustained sounds of human voices create the soothing effect of a lullaby.

Pitch and duration provide the base vocabulary for the emotional language of music. At its most basic, music is simply organized sound. Composers combine pitch and duration in an infinite variety of ways, unfolding them in patterns over time to create melodies or stacking them on top of each other in the same moment to create harmony. Whatever their arrangement, the universal language of music speaks directly to emotion. Victor Hugo, the French novelist who penned *Les Miserables*, best summed up the emotional language of music when he noted, "Music expresses that which cannot be said and on which it is impossible to be silent."

1. **Facts** are ideas that can be proven to be true.
2. **Statistics** are facts that are quantified with numbers.
3. **Definitions** tell what a word means.
4. **Examples** show how an idea works in a specific situation.
5. **Descriptions** tell what something looks, feels, sounds, tastes, or smells like.
6. **Anecdotes** are stories that illustrate a point.
7. **Quotations** give the exact words of someone.