

# LISTEN, PLAY, CREATE - I (LONCE)



ESTER LÓPEZ CARRICHES  
JORGE BENAYAS AYUSO

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*(LOMCE)*

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**JORGE BENAYAS AYUSO**

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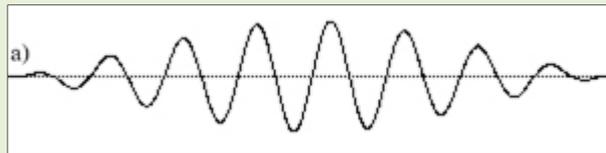
*The activities with listening/videos, the Internet resources and the digital activities in this book  
can be found at the blog: <http://listenplaycreate.blogspot.com.es/>,  
classified by lessons.*

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# LESSON 1.- WHAT IS SOUND?

## 1.- THE SOUND. PRODUCTION AND TRANSMISSION.

All sounds are **vibrations**. Those vibrations propagate as **waves** through a **medium** such as solids, liquids and gases. Sounds cannot propagate through the **vacuum** because the waves don't have a medium to pass through.



The **speed of sound** depends on the medium. For example, the speed of sound through air is around 340 meters per second (m/s). It is faster through water (more than 1,000 m/s) and the fastest through solids (more than 5,000 m/s through steel).

**Sound and noise** are physically the same. Noise is a sound that we don't like because it is unpleasant or because it disturbs us. That depends on our opinion.

**Activity 1.-** *Work in groups. Pick up one of the instruments below and explain to the rest of the class if you can see or/and feel with your fingers the vibration when you:*

- Pluck the strings of a guitar.
- Hit a cymbal.
- Hit a tambourine.
- Play a xylophone.

**Activity 2.-** *What happens when you stop the vibration of the instruments above?*

**Activity 3.-** *Where is sound propagating through when...*

- ...you hear while diving?
- ...you hear your neighbour through the wall?
- ...you feel and hear the tuning fork when it vibrates against your elbow?
- ...the Indians in the films lean their ears on the floor to hear the enemies coming?
- ...you can hear your friend with two plastic glasses joined by a tense string?
- ...you watch TV?

**Activity 4.-** *What is the speed of sound through air?*

**Activity 5.- What is the medium through which sound propagates the fastest?**

**Activity 6.- Where is there no sound and why?**

**Activity 7.- Classify in noises or sounds according to your opinion:**

A dog barking - The waves at the beach - The wind moving the leaves of a tree  
A bird singing - An alarm - The school bell.

*Add more noises or sounds and compare them with your partner.*

Noises	Sounds

**Activity 8.- We are always hearing something. It is impossible to be in total silence although we think we are. Check it like this:**

*Be quiet. Close your eyes for a minute and focus on the sounds or noises that you can hear. List everything that you heard. Compare with the things that your partners heard.*

**Activity 9.- Listen to this excerpt and answer:**

*Do you think this piece consists of sounds or noises?*

*Why?*

**Activity 10.- Are these statements true or false?**

- a) Sound is a vibration that propagates as a wave through solids, liquids and gases.
- b) The speed of sound through water is around 340 m/s.
- c) Noise is a pleasant sound.
- d) There are sounds everywhere in the Universe.

## 2.- PROPERTIES OF SOUND

The four properties or characteristics of sound are:

**pitch, duration, timbre (also called tone colour) and intensity.**

**A) The pitch** refers to **high-pitched or low-pitched sounds**. It depends on the **frequency**. The frequency is the number of vibrations per second. Its unit is the hertz (Hz). A high sound has a high frequency, a lot of hertz. A low sound has a low frequency, few hertz.

Human beings can't hear all frequencies. We can't hear frequencies lower than 20 vibrations per second (20 Hz). We name those sounds **infrasounds**. Some animals such as dolphins and whales can hear them. We can't hear frequencies higher than 20,000 vibrations per second (20,000 Hz). We call them **ultrasounds**. Some animals such as dogs and bats can hear them.

The **tuning fork** is made of metal. When it vibrates it always produces 440 vibrations per second (**440 Hz**). We call that sound **la or A**. It is like a compass in music. The instruments can be tuned from that note and it is useful for the choirs, too.

As a general rule, small instruments have high-pitched sounds and big instruments have low-pitched sounds. For example, a violin is higher than a bass because it is smaller.

(\*Remember: **Large-Low**)

Women have higher voices than men because their vocal cords are smaller.



**Activity 11.- Complete the sentences:**

The pitch refers to \_\_\_\_\_. It depends on the \_\_\_\_\_.

**Activity 12.-What is frequency and what is hertz?**

**Activity 13.-Has a high-pitched sound a high frequency?**

**Has a low-pitched sound few hertz?**

**Activity 14.-Where do you find the low-pitched sound in a keyboard or a xylophone: to your left or to your right?**

**Which are the high-pitched keys, the short keys or the long keys?**

**Activity 15.- How many holes do you have to cover to get the lowest pitch with the recorder?**

Activity 16.- Do women have a higher or a lower voice than men?

Why?

Activity 17. Classify these sounds into low or high and add another example of every kind.

School bell - A door slam - Motor - Siren - Bird - Thunder

Low	High

Activity 18. How do we name the sounds higher than 20,000 Hz?

Which animals can hear them?

How do we name the sounds lower than 20 Hz?

Which animals can hear them?

**B) The duration** refers to **long and short** sounds.

**C) The timbre or tone colour** allows the listener to identify the instrument, the voice or object that is producing the sound.

If a piano and a violin play the same pitch, with the same volume and the same duration, we differentiate them thanks to their timbre. It depends on the material that vibrates and the specific components of the sound waves.

**D) The intensity or volume** refers to **loud and soft**. It depends on the **amplitude** of the sound wave.

Don't mix up pitch and intensity: a sound can be high and loud or high and soft, low and loud or low and soft.

We live surrounded by sounds of different volumes. Think of examples in your daily life that are soft or very soft, intermediate, loud and very loud:

- Soft and very soft:
- Intermediate:
- Loud:
- Very loud:

We measure the intensity with **decibels (dB)**: These are the decibels of some daily life sounds:

Sound	Decibels	Other examples
<i>Sounds in the countryside</i>	10	
<i>Quiet library</i>	20-30	
<i>Conversation among few people</i>	40	
<i>Conversation among a lot of people</i>	60	
<i>Vacuum cleaner</i>	70	
<i>Train</i>	80	
<i>Traffic</i>	90	
<i>Hand drill</i>	100	
<i>Loud rock concert</i>	110	
<i>Plane engine</i>	120	
<i>Pain begins</i>	130	
<i>Permanent damage</i>	140	

**Activity 19.- Write in the right cell these sounds (you can guess or find it in the Internet):**

Disco - Phone ringing - Shot - Motorcycle - Light rain  
Alarm clock - Leaves moving - Explosion - Television

**Activity 20.- Listen and answer: Is the sound of a woodblock shorter or longer than a cymbal?**

**Activity 21.- Classify the following sounds in the chart: A whistle, a cat purring, a door slamming, an alarm. Add another four. Share with your partner.**

<i>Low and soft</i>	<i>Low and loud</i>	<i>High and soft</i>	<i>High and loud</i>

**Activity 22.- How can we distinguish two sounds of the same pitch, duration and volume?**

### 3.- THE INTENSITY IN MUSIC: DYNAMICS

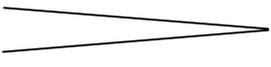
The intensity in music expresses different emotions, because the effect of music is different depending on its volume. It can even define styles or types of songs: Heavy metal has to be loud, but a lullaby has to be soft.

The composers show in the scores the volume or intensity of every passage with Italian words or their abbreviations. This is called **dynamics**:

ABBREVIATION	ITALIAN WORD	MEANING
<i>pp</i>	<i>pianissimo.</i>	VERY SOFT
<i>p</i>	<i>piano</i>	SOFT
<i>mf</i>	<i>mezzo forte</i>	INTERMEDIATE
<i>f</i>	<i>forte</i>	LOUD
<i>ff</i>	<i>fortissimo</i>	VERY LOUD

#### Gradual changes of intensity

Sometimes a passage gets gradually softer or gradually louder. There are two ways of expressing it:

ITALIAN WORD AND ABBREVIATION	HAIRPIN	MEANING
<i>Crescendo o cresc.</i>		GRADUALLY GETTING LOUDER
<i>Diminuendo o dim.</i>		GRADUALLY GETTING SOFTER

**Activity 23.- Write the dynamics in order, from the softest to the loudest:**

***mf - ff - f- p -pp***

**Activity 24.- Which are the two ways of expressing that the intensity gets louder and softer?**

Activity 25.-Identify the dynamics and fill in the chart below:

Bar	Dynamics	Meaning
2		
3		
7		
7		
9		

Activity 26.- Listen to the piece "In the hall of the mountain king" , from Peer Gynt by Edvard Grieg. The same passage is repeated several times, but the volume changes. How?

What is the effect that it produces?

**Activity 27.- Listen to these two versions of the same song: Mr Sandman, by The Chordettes and by Blind Guardian.**

**How does the intensity change?**

**How does the song change because of that?**

**Activity 28.- Work with your partner. Solve the crossword:**

ACROSS

- 6. Very loud.
- 5. Sign to indicate *crescendo* or *diminuendo*.
- 1. Very soft.
- 4. Loud.
- 9. Unit of intensity.
- 8. Gradually becoming louder.

DOWN

- 2. Soft.
- 7. Dynamics are written in this language.
- 3. Moderate.
- 10. Gradually becoming softer.

**Activity 29.-** Work with your partner. Choose between high/low, long/short and loud/soft and tell your partner. He/she has to play it with the object or instrument that he/she prefers.

Example: Play a high, long and loud sound. Then your partner plays a cymbal.

The rest of the class has to say if the sound is right or not.

**Activity 30.-** Fill in the gaps according to the sound that your teacher or partner makes.

	Pitch		Duration		Intensity or volume		Timbre or tone colour
	High	Low	Long	Short	Loud	Soft	What is it?
1							
2							
3							
4							

**Activity 31.-** Listen to these musical portraits of animals from "The carnival of the animals" by Camille Saint-Saëns and fill in the gaps.

	1ª Cocks and hens	2ª The elephant
Pitch: Is it high or low?		
Duration: Does it have long or short sounds?		
Intensity: Is it soft or loud?		
Timbre or tone colour: Which are the instruments?		

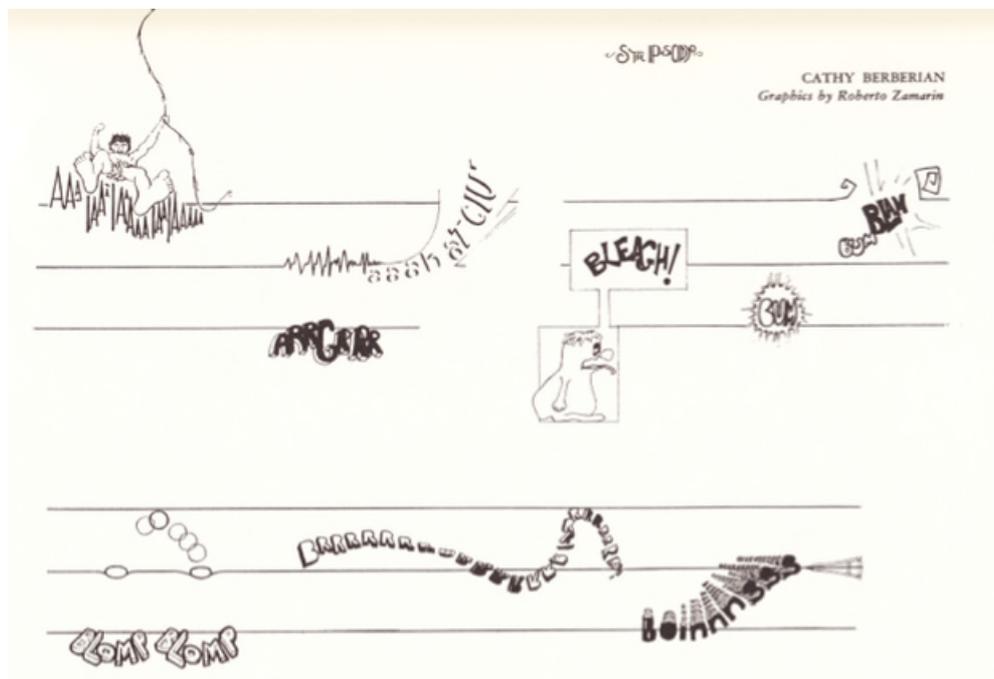
**Activity 32.-** Imagine that the notation doesn't exist and you have to write sounds. Here you are an example.

Properties	Pitch		Duration		Intensity or volume		Timbre or tone colour	
Drawings	↑	High	_____	Long	_____	Loud		Recorder
	↓	Low	—	Short	_____	Soft		Voice

Work with your partner. Have a look at the videos included in the **Smalin** channel in YouTube, <http://www.youtube.com/user/smalin> , to check how he represents music pieces without scores. Explain it according to

- ✓ The pitches:
- ✓ The durations:
- ✓ The intensity or volume:
- ✓ The timbres or tone colours:

**Activity 33.-** Look at this excerpt of the piece “Stripsody” by Cathy Berberian, from 1966.



Work in groups. Perform this piece with your voice and record it in **Audacity**. We will listen to all your versions and we will vote for the one that we prefer.

**Activity 34.- Play the melody from the Ode to Joy by Beethoven, changing the sound properties:**

1st) Low and then high

2nd) Soft and then loud

3rd) Long sounds and then short sounds

4th) Recorders and then xylophones



*Low melody:*



*High melody:*





**Activity 38.- Fill in the summary of the lesson:**

**1. THE SOUND. PRODUCTION AND TRANSMISSION.**

All sounds are \_\_\_\_\_. Those vibrations propagate as \_\_\_\_\_ through a **medium** such as \_\_\_\_\_, liquids and gases. Sounds cannot propagate through the \_\_\_\_\_ because the waves don't have a medium to pass through.

The \_\_\_\_\_ **of sound** depends on the medium. The speed of sound \_\_\_\_\_ air is around 340 meters per second (m/s). It is \_\_\_\_\_ through water (more than 1,000 m/s) and \_\_\_\_\_ through solids (more than \_\_\_\_\_ m/s through steel).

**Sound and \_\_\_\_\_** are physically the same. Noise is a sound that we don't like because it is \_\_\_\_\_ or because it disturbs us. That depends on our \_\_\_\_\_.

**2. PROPERTIES OF SOUND**

The four properties or \_\_\_\_\_ of sound are:  
\_\_\_\_\_, **duration**, \_\_\_\_\_ (also called **tone colour**) and \_\_\_\_\_.

**A) The pitch** refers to \_\_\_\_\_. It depends on the \_\_\_\_\_. The frequency is the number of vibrations per \_\_\_\_\_. Its unit is the **hertz** (\_\_\_\_). A \_\_\_\_\_ sound has a high **frequency**. A low sound has a \_\_\_\_\_.

Human beings can't hear frequencies lower than \_\_\_\_\_ vibrations per second (20 Hz): \_\_\_\_\_.

We can't hear frequencies \_\_\_\_\_ than 20,000 vibrations per second (20,000 Hz): **ultrasounds**.

The **tuning fork** is made of \_\_\_\_\_. When it vibrates it always produces \_\_\_\_\_ vibrations per second (**440 Hz**). We call that sound \_\_\_\_\_ **or A**.

**B) The duration** refers to \_\_\_\_\_ sounds.

**C) The timbre or \_\_\_\_\_** allows the listener to \_\_\_\_\_ what is producing the sound.

**D) The intensity or \_\_\_\_\_** refers to \_\_\_\_\_. It depends on the \_\_\_\_\_ of the sound wave. We measure the intensity with \_\_\_\_\_ (**dB**):

**3. THE INTENSITY IN MUSIC:**

The intensity in music expresses different \_\_\_\_\_.

The composers show in the scores the volume or intensity of every passage with \_\_\_\_\_ or their abbreviations. This is called **dynamics**:

✓ *pp* - *pianissimo* - \_\_\_\_\_

✓ \_\_\_\_\_ - *piano* - \_\_\_\_\_

✓ *mf* - \_\_\_\_\_ - intermediate

✓ \_\_\_\_\_ - *forte* - \_\_\_\_\_

✓ *ff* - \_\_\_\_\_ - very loud

✓ *Cresc o* \_\_\_\_\_: gradually getting \_\_\_\_\_

✓ *Dim o* \_\_\_\_\_: \_\_\_\_\_ getting softer

## KEY VOCABULARY

(to) listen	/ˈlɪsn/	duration	/dʒuˈreɪʃn/
(to) play	/pleɪ/	long	/lɒŋ/
(to) create	/kriˈeɪt/	short	/ʃɔ:t/
sound	/saʊnd/	timbre	/ˈtæmbə(r)/
production	/prəˈdʌkʃn/	tone colour	/təʊn/ /ˈklɒlə(r)/
transmission	/trænsˈmɪʃn/	(to) identify	/aɪˈdentɪfaɪ/
vibration	/vaɪˈbreɪʃn/	instrument	/ˈɪnstɹəmənt/
wave	/weɪv/	voice	/vɔɪs/
medium	/ˈmi:diəm/	choir	/ˈkwaɪə(r)/
(to) propagate	/ˈprɒpəgeɪt/	piano	/piˈænəʊ/
vacuum	/ˈvækjuəm/	violin	/ˌvaɪəˈlɪn/
speed	/spi:d/	recorder	/rɪˈkɔ:də(r)/
through	/θru:/	xylophone	/ˈzaɪləfəʊn/
noise	/nɔɪz/	intensity	/ɪnˈtensəti/
unpleasant	/ʌnˈpleznt/	volume	/ˈvɒlju:m/
(to) disturb	/dɪˈstɜ:b/	dynamics	/daɪˈnæmɪks/
hearing	/ˈhɪərɪŋ/	loud	/laʊd/
silence	/ˈsaɪləns/	intermediate	/ˌɪntəˈmi:diət/
excerpt	/ˈeksɜ:pt/	moderate	/ˈmɒdərət/
composer	/kəmˈpəʊzə(r)/	soft	/sɒft/
notation	/nəʊˈteɪʃn/	gradual	/ˈgrædʒuəl/
(to) perform	/pəˈfɔ:m/	change	/tʃeɪndʒ/
performance	/pəˈfɔ:məns/	hairpin	/ˈheəpɪn/
(to) record	/ˈrekɔ:d/	amplitude	/ˈæmplɪtju:d/
property	/ˈprɒpəti/	(to) measure	/ˈmeʒə(r)/
pitch	/pɪtʃ/	decibel	/ˈdesɪbel/
high	/haɪ/	<i>pianissimo</i>	/ˌpiəˈnɪsɪməʊ/
low	/ləʊ/	<i>piano</i>	/piˈænəʊ/
melody	/ˈmelədi/	<i>mezzo forte</i>	/ˌmetzəʊˈfɔ:teɪ/
frequency	/ˈfri:kwənsi/	<i>forte</i>	/ˈfɔ:teɪ/
hertz	/hɜ:ts/	<i>fortissimo</i>	/fɔ:ˈtɪsɪməʊ/
infrasound	/ˈɪnfrəsəʊnd/	<i>crescendo</i>	/krəˈʃendəʊ/
ultrasound	/ˈʌltrəsəʊnd/	<i>diminuendo</i>	/dɪˌmɪnjuˈendəʊ/
tuning fork	/tju:n ɪŋ/ /fɔ:k/		
(to) tune	/tju:n/		