



Music

Introduction to Music

Introduction to Music for Secondary Education is a collective work conceived, designed and created by the Secondary Education Department at Richmond-Santillana, under the supervision of **Teresa Grence Ruiz**.

The following team has collaborated in this book:

David Carabias Galindo

María Isabel Gil López

María Larumbe Martín

Inés Reyes Ferrero

Cristina Rubio Barba

Sabina Sánchez de Enciso Defarge

Ester Troncoso Blanco

EDITORS

Juan José Castro Díaz

Hazel Geatches

PROJECT EDITOR

Eva Herrero González

MANAGING DIRECTOR

Mercedes Rubio Cordovés

Do not write in this book. Do all the activities in your notebook.

Outline of the book

The Student's Book consists of **six units** organised into three main sections: **Musical context**, **Music theory** and **Musical culture**, as well as an **Activity round-up** and a **Going further** section.

The accompanying **Student's Audio** contains the main pieces of music worked on in the Student's Book (the **Class Audio** for the teacher has a three-CD set with all the music for the course).

Each unit starts with a presentation of the main content. This is followed by the **Musical context** section, which links the content to the present day, practical applications, etc.

Find out about and **Know how to:** the main content of the unit.

Starting points: questions that relate the students' personal experience to the subject covered in the unit.

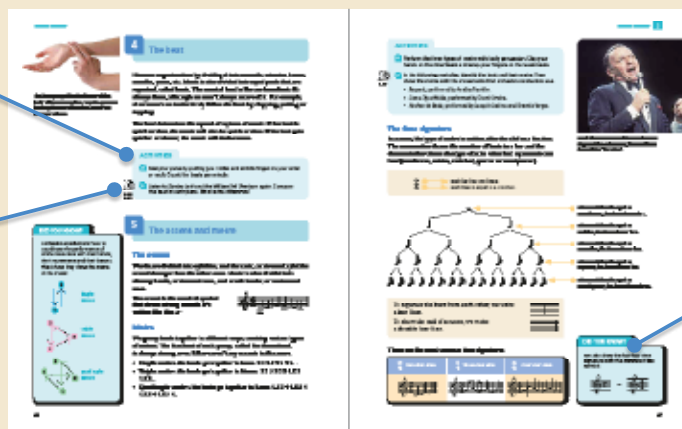


Know how to: practical suggestions to put the theory into practice.

The **Music theory** section presents the basic concepts in a clear and simple way. It includes a page of activities and a musical repertoire section.

Activities to help the students to understand the theoretical content.

This symbol shows the audio material for the activity that can be found on the **Class Audio**.



Did you know?: supplementary information about the content.

More **activities** to review and reinforce the content studied.



This symbol shows the audio material for the activity that can also be found on the **Student's Audio**.

Musical repertoire: scores appropriate to the students' level, to perform in the classroom.

Recommendations for playing instruments.

The **Musical culture** section develops the content related to the history of music, instruments, genres and styles, folklore, etc. The musical repertoire includes an active listening activity based on a well-known piece of music.

Basic characteristics of the piece of music and the context it comes from.

This symbol shows the specific **key competence** being worked on in this section or activity.

Graphic score, score or other resources to analyse and accompany the suggested piece of music.

The last pages of the unit contain an **Activity round-up** to help to reinforce and review the content, and a **Going further** section with one page dedicated to **Development of key competences** and another page of **Reading**.

Development of key competences through creative project work in groups.

Reading in the form of a short article to end the unit.

Activities linked to the **use of ICT** in the classroom.

Key concepts to reinforce the knowledge acquired.

At the end of the book there is an **Appendix** with:

- A table of musical instruments organised by families.
- Recorder tab.
- A glossary of music terms.
- Major and minor chords on the guitar and the keyboard.

SYMBOLS

- Linguistic competence
- Competence in mathematics, science and technology
- Social and civic competences

- Cultural awareness and expression
- Initiative and entrepreneurship
- Digital competence

- Learning to learn
- Audio track included on the **Class Audio**

- Audio track included on the **Student's Audio**
- Audiovisual example included on the **Instruments DVD**

Contents

UNIT	Musical context	Music theory
1 Rhythm in our blood 6	• Beat and rhythm. • Body percussion. • Musical traditions: <i>zapateado</i> and <i>palmas</i> in flamenco (Spain), rhythms to accompany work, the <i>haka</i> (New Zealand), gumboot dance (South Africa).	• Writing music. • The stave and the treble clef. • Properties of sound: duration (note values and rests), pitch (musical notes), intensity (dynamic indicators and hairpins) and timbre.
2 An exceptional voice 24	• The human voice; vocal resources. • Training the voice; breathing and articulation. • Vocal traditions: yodeling (Tyrol, the Alps), overtone singing (central Asia), beatboxing (originally from New York).	• The beat and speed in music. • The accent. • Metre: duple, triple and quadruple. • The time signature. • Music in free time.
3 A thousand and one instruments 42	• The origins of musical instruments. • Factors that determine the timbre of each instrument. • Making musical instruments: the work of a luthier. • Unique musical instruments: the glass armonica, the hang drum, sound sculptures.	• Sound-lengthening signs: dotted notes and rests, the tie and the fermata. • Tempo and metronome markings. • Repeat signs. • Types of clefs: treble clef, bass clef and neutral clef.
4 Classical music 60	• Classical, or formal music. • Venues for the performance of classical music: concert halls and theatres. • Classical concert codes of conduct. • Asian classical music.	• Musical scales. • Types of intervals; tones and semitones. • Accidentals: the sharp, the flat and the natural. • The key signature.
5 Musical roots 78	• Traditional, or folk music. • Ethnomusicology. • The functions of folk music. • Relationship of folk music with other types of music.	• Melody; types of melodic line. • Musical phrases: antecedent and consequent. • Ways of organising melodies: call and response, echo and canon. • <i>Ostinatos</i>.
6 Rock stars 96	• Popular urban music. • The relationship between popular urban music and other types of music. • Popular urban music in other countries: afrobeat, <i>bhangra</i>, reggaeton, <i>rai</i>.	• Types of scales: diatonic, pentatonic and chromatic. • Syncopation and off-beat notes. • Anacrusis.
APPENDIX 114	• Table of instrument families. • Glossary of music terms. • Recorder tab. • Major and minor chords on the guitar and the keyboard.	

Musical culture	Musical repertoire	Going further
- How sound is made. - Sound waves. - The hearing organs. - Sound and noise; noise pollution. - Soundscapes.	- How to play the recorder. - The notes Sol or G, La or A, Si or B, Do' or C' and Re' or D' on the recorder. <i>Oh, When the Saints</i>, traditional song. <i>Falling Slowly</i> from the soundtrack of <i>Once</i> by G. Hansard and M. Irglova. <i>William Tell Overture</i> by G. Rossini.	Development of key competences: Creating a soundscape of a storm with body percussion. Reading: Can people with hearing loss listen to music?
- How the voice works; the speech organs and vocal resonators. - Classification of types of voices according to tessitura and range. - Vocal health and voice disorders. - Types of vocal ensembles.	- The notes Do or C, Re or D, Mi or E and Fa or F on the recorder. <i>Edelweiss</i> from the soundtrack of <i>The Sound of Music</i>, traditional song arranged by R. Rodgers and O. Hammerstein II. <i>O Haupt Voll Blut und Wunden</i> from <i>St Matthew Passion</i> by J. S. Bach. <i>Ay, Triste que Vengo</i> by J. del Encina.	Development of key competences: Creating a piece of beatboxing. Reading: The power of a song.
Instrument families: chordophones, aerophones, membranophones and idiophones.	- How to play the keyboard. <i>Lascia Ch'io Pianga</i> from <i>Rinaldo</i> by G. F. Händel. <i>The Lion Sleeps Tonight</i>, traditional song arranged by S. Linda. <i>Habanera</i> from the <i>Carmen Suite</i> by G. Bizet.	Development of key competences: Creating an instrument file. Reading: Music from rubbish.
- Types of instrumental ensembles: the symphony orchestra and chamber ensembles. - The organisation of the instruments in the orchestra. - The role of the conductor, the soloist and the leader.	- How to play mallet percussion instruments. - The notes Fa$\sharp$ or F$\sharp$ and Si$\flat$ or B$\flat$ on the recorder. <i>Minuet</i> from <i>Septet</i> by L. van Beethoven. <i>Rondo</i> from <i>Eine Kleine Nachtmusik</i> by W. A. Mozart. <i>Allegro con Brio</i> from <i>Symphony No. 5</i> by L. van Beethoven.	Development of key competences: Editing a score digitally. Reading: A surprise concert.
- Instruments used in Spanish folk music. - Traditional dances and instrumental ensembles of the Iberian Peninsula.	- How to play school percussion instruments: claves, finger cymbals and triangle. <i>I Like the Flowers</i>, traditional song. <i>Tú, Gitana</i>, traditional song, with music by J. M. C. Alfonso and arrangements by Luar na Lubre. <i>Jota</i> from <i>Siete Canciones Populares Españolas</i> by M. de Falla.	Development of key competences: Dancing a stick dance. Reading: <i>Cafés cantantes</i>: venues for flamenco.
- Jazz, rock and roll and other main styles in popular urban music. - Pop and rock in Spain. - The rock band and its instruments.	<i>Wonderwall</i> by Oasis. <i>Stand by Me</i> by B. E. King, J. Leiber and M. Stoller. <i>Rock Around the Clock</i>, recorded by B. Haley.	Development of key competences: Writing rap lyrics. Reading: Taking music everywhere.

1

Rhythm in our blood

FIND OUT ABOUT

- Body percussion
- Introduction to musical notation
- Properties of sound
- Sound waves
- The hearing organs
- Sound and noise

KNOW HOW TO

- Perform a vocal and instrumental repertoire
- Do an active listening to the *William Tell Overture* by Gioachino Rossini
- Perform soundscapes



We're surrounded by sounds. Some sounds are pleasant, like birds singing. Other sounds are annoying, like traffic in the city. We call the pleasant ones sounds and the unpleasant ones noises. There are so many sounds and noises around us that we can't pay attention to all of them. Our own bodies make sounds that are so quiet that we almost can't hear them. These sounds accompany us all our lives, like our heartbeat and our breathing.



STARTING POINTS

- How many different sounds can you make with your body?
- When we clap our hands or tap our feet, can we call it music?
- How can you use your body as a musical instrument?
- Do you know any groups or soloists who use only their bodies to make music?

1

Our body as a musical instrument

Since the beginning of time, humans have made sounds with their bodies to express different things. We can make the sound 'psst' to get someone's attention; we can applaud at the end of a concert to show the musicians that we have enjoyed their performance, or we can tap a rhythm with our feet to accompany a flamenco guitarist or singer.

The human body is the **perfect instrument**. We can sing beautiful melodies with our voices and make all types of rhythms with body percussion, like clapping our hands, snapping our fingers or patting our legs.

Beat and rhythm

The word 'rhythm' comes from the Greek word *rythmos*, which means something that flows and doesn't stop. Rhythm is with us from the day we're born: We can identify it in our heartbeat, the waves in the sea, the cycle of day and night, the seasons of the year, etc.

In music, rhythm is a series of sounds of different durations. These sounds are organised into beats. A beat is each of the equal parts in which musical time is divided and it determines the speed of the piece of music. We have to stress one beat in every two, in every three or in every four.

Body percussion

Body percussion is the name for the different rhythms that we can make with our bodies.

Every culture has its own body-percussion traditions. It can be used to accompany music or as a way of dancing; for example, *zapateado* and *palmas* in the Spanish flamenco or the Maori *haka*, in which dancers slap their chests hard. We can also enjoy the performances of contemporary percussion groups like the British group STOMP, the Israelite Mayumana or the Brazilian Barbatuques.

→ KNOW HOW TO



1.2

- 1 Listen and clap quietly to the beat of *Samba Lelé* by Barbatuques.



1.3

- 2 Listen and clap to the beat. Emphasise the louder beats.

- Every two beats
(*The Syncopated Clock* by L. Anderson):

■ ■ ■ ■ ■ ■ ■ ■ ■ ■

- Every three beats
(*Waltz of the Flowers* by P. I. Tchaikovsky):

■ ■ ■ ■ ■ ■ ■ ■ ■ ■

- Every four beats (*Baby Elephant Walk* by H. Mancini):

■ ■ ■ ■ ■ ■ ■ ■ ■ ■

→ KNOW HOW TO



1.4

- 3 Practise the rhythm with body percussion and accompany *Where Is the Love?* by The Black Eyed Peas.

- 1 Clap your hands.
- 2 Snap your fingers with your right hand.
- 3 Pat your chest with your left hand.
- 4 Snap your fingers with your right hand.





Flamenco has some traditional styles called *palos*. Each *palo* has a name, origin and musical characteristics that define it.

2

Musical traditions

Zapateado and palmas in flamenco

Body percussion is a fundamental part of flamenco.

Zapateado is performed with special flamenco shoes. They have a hard sole and nails on the toe and the heel. The dancer makes a characteristic sound by tapping the floor with the whole foot, half the foot, the heel, the edge of the heel or the toe. These basic movements are combined to make the musicality of percussion.

There are two types of flamenco handclaps, called *palmas*: *simples*, which go on the beat, and *redoblás* or *encontrás*, which go on the off-beat, contrasting with the *simples*. *Palmas simples* can also be *secas* (normal) or *sordas*, performed with cupped hands.

→ KNOW HOW TO



1.5

4 Learn the rhythm of the *soleá*.

- Clap your hands and try to make the sound of the *palmas sordas*. Perform the rhythm of one of the most common *palos* in flamenco: *soleá*. Don't forget the accents on the strong beats shown in **bold**.

1 **2** 1 2 **3** 4 5 **6** 7 8 9 **10**

- Listen and accompany the music with the rhythm of the *soleá*.

Rhythms to accompany work

In the past, many people accompanied their work with music to make it more interesting. For example, **bakers** slapped their hands on the table when they were doing boring, repetitive work like kneading bread. With this body percussion they performed rhythms that made them feel happy and this created a rhythmic base for their songs.

→ KNOW HOW TO



1.6

5 Learn this rhythm and accompany the music.



Hit the table with your left fist.



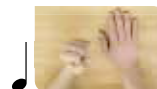
Pat the table with the back of your right hand.



Pat the table with your right hand.



Hit your right hand with your left fist.



Hit the table with your left fist.



Clap your hands.



Pat the table with your right hand.

- Practise each percussion separately and then combine them very slowly.
- When you're ready, perform the rhythmic pattern more quickly.
- Listen and accompany the song with the rhythm that you've learnt.
- Try other combinations and other body percussions, like tapping your elbow on the table.

The haka

The *haka* is an ancient war dance from the Maori culture (the indigenous people of New Zealand and other Polynesian islands). Men performed it before fighting to show their strength and group unity, and to intimidate the enemy.

The dance consists of a series of simple movements that are accompanied by hard foot stamping and chest slapping. At the same time, the performers recite a poem with loud voices.

Ka Mate is a famous *haka* that the New Zealand rugby team often perform before a match.



All Blacks rugby team performing a *haka* before a match.

Gumboot dance

Gumboot dance appeared at the end of the 19th century in the mines of South Africa. The working conditions in these mines were very hard: the miners spent all day in the dark, surrounded by stagnant water and they couldn't stand up. The workers couldn't even talk or sing, so they invented a way to communicate that used the sound of their gumboots. This helped them to feel more cheerful, send messages and warn each other of danger.

Today, this dance is a symbol of the fight against the racism and repression that the black people in South Africa suffered in the past.

→ KNOW HOW TO

- 6 Listen and perform a gumboot dance to the South African song *Baba Baxolele*.

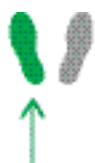
- Learn the steps.

1



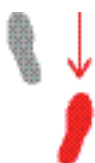
Take a step forward with your right foot.

2



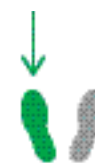
Take a step forward with your left foot.

3



Take a step back with your right foot.

4



Take a step back with your left foot.

*



With both hands, slap the boot on the last foot that you've moved.

- Combine the steps and perform the rhythm.



- Make up other combinations of movements and create a new dance routine for the song.

We count the lines and spaces of the staff from the bottom up.

five lines	four spaces
5	
4	4
3	3
2	2
1	1

3

Writing music

The best way to remember music is to write it. **Musical notation** is the name for representing rhythm and sounds graphically. It's used in lots of different countries, so if you learn it, you can read music from any part of the world.

The staff

We write music on a staff, a set of five lines and four spaces where we write the notes and all the other musical symbols.

The clef

The first thing that we write on the staff is the clef, which shows the name of each note on the staff. The most common clef is the **treble clef**. It starts on the second line of the staff and it shows the note Sol or G on this line.



4

Properties of sound

All sounds have four properties that help us to distinguish one sound from another one. We can show all the properties of sound with musical notation.

- **Duration** tells us if a sound is long or short. We represent it with note values and their corresponding rests.
- **Pitch** (tone) tells us if a sound is high or low. We represent it with the different musical notes on the staff.
- **Intensity** tells us if a sound is loud or quiet. We use dynamic indicators to express it (*piano*, *mezzoforte*, *forte*, etc.).
- **Timbre** helps us to distinguish if what we hear is a voice, an instrument, an animal or an object.

Duration

Note values are symbols that represent the duration of a sound. **Rests** show the duration of pauses. The duration (in seconds) of the notes in real time depends on the beat of the music. The beat can be quick or slow, like a heartbeat, but the proportions of the note values are always the same.

The stem of a note points up if the note is below the third line of the staff and it points down if the note is above the third line. This is because we don't want the notes to go too far outside the staff.



A tuning fork is a piece of metal that emits the note La or A when we hit it. It helps us to tune instruments in orchestras and voices in vocal ensembles.

Parts of a note

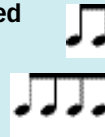


Name	Note value	Rest	Duration
semibreve			four beats
minim			two beats
crotchet			one beat
quaver			half a beat
semiquaver			a quarter of a beat



KEEP IN MIND

When **quavers** go together, we call them **beamed quavers** and we write them like this:



And we write **beamed semiquavers** like this:



→ KNOW HOW TO

- 7 Stamp to the beat and perform the rhythms with handclaps.



- 8 Make up a new rhythm to perform with body percussion. Then write it with note values and rests.



Pitch

We write **musical notes** at different heights on the staff to show the pitch of a sound.

The names and the letters for the notes and their position on the staff are: **Do** or **C**, **Re** or **D**, **Mi** or **E**, **Fa** or **F**, **Sol** or **G**, **La** or **A** and **Si** or **B**. We write the note low Do or middle C outside the staff. This is why we need a **leger line**.



→ KNOW HOW TO

- 9 Sing the scores with the names for the notes.



DID YOU KNOW?



Some animals communicate with sounds that humans can't hear. For example, dolphins and bats use very high sounds, called **ultrasound**, to communicate and to orientate themselves. And elephants use **infrasound**, which is a very low sound that they make when they stamp their feet.



Orchestra conductors use gestures to show the musicians the intensity of the music during a concert. Some conductors are very expressive, like Gustavo Dudamel from Venezuela.

ACTIVITIES



1.8

1 Listen to the pieces of music. What are the dynamics? Are there any changes throughout the pieces? Which ones?

- *Autumn* from *The Four Seasons* by A. Vivaldi.
- *New World Symphony* by A. Dvořák.
- *Egmont Overture* by L. van Beethoven.



KEY CONCEPTS

duration → long or short

pitch → high or low

intensity → loud or quiet

timbre → what sounds

Intensity

In music, we use **dynamic indicators** to show if a sound is loud or quiet. These are Italian words and we usually write their abbreviations under the staff.

To show that the intensity of the music gradually increases or decreases, we use symbols called **hairpins**.

Dynamic indicators and hairpins			
Name	Abbreviation	Symbol	Meaning
<i>pianissimo</i>	<i>pp</i>		very quietly
<i>piano</i>	<i>p</i>		quietly
<i>mezzopiano</i>	<i>mp</i>		moderately quietly
<i>mezzoforte</i>	<i>mf</i>		moderately loudly
<i>forte</i>	<i>f</i>		loudly
<i>fortissimo</i>	<i>ff</i>		very loudly
<i>crescendo</i>	<i>cresc.</i>		gradually more loudly
<i>diminuendo</i>	<i>dim.</i>		gradually more quietly

→ KNOW HOW TO

10 Perform the rhythms with handclaps. Pay attention to the dynamics shown on the scores.



Timbre

The same note is very different when performed on a violin or a recorder, even when it has the same duration, pitch and intensity.

Timbre is the unique sound of each instrument or voice. This is how we identify the sounds that we hear. The instrument or voice that performs each part is always shown at the start of the score.



ACTIVITIES

- 2 Copy the words in bold. Then write the correct definitions.

pitch	distinguishes between loud or quiet sounds
duration	distinguishes between high or low sounds
intensity	distinguishes what we hear
timbre	distinguishes between long or short sounds

- 3 Copy and complete the table.

Name	Note value	Rest	Duration
			four beats
			
crotchet			
			

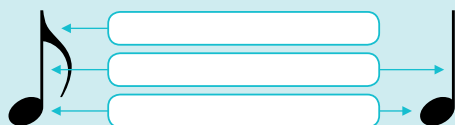
- 4 Answer the questions.

- What do we call the way we write music?
- What is a musical note?
- What is a dynamic indicator?
- What is a hairpin?
- What is a note value?
- What do we call the unique sound of each voice or instrument?

- 5 Which property of sound changes in each pair?



- 6 Draw the note values and write the names for their parts.



- 7 Look at the example. Then copy the groups of notes and rests and write their total value.

 = two beats   =   =

 =   =   =

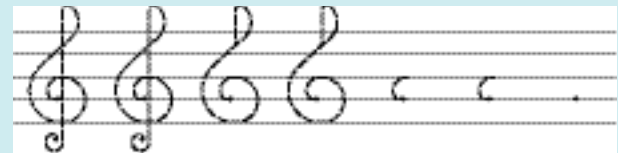
  =   =  =

- 8 Answer the questions.

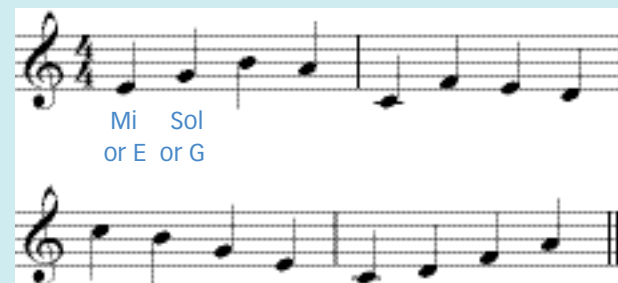
- What do we call this object?
- What note does it make?
- What do we use it for?
- Which property of sound does it determine?



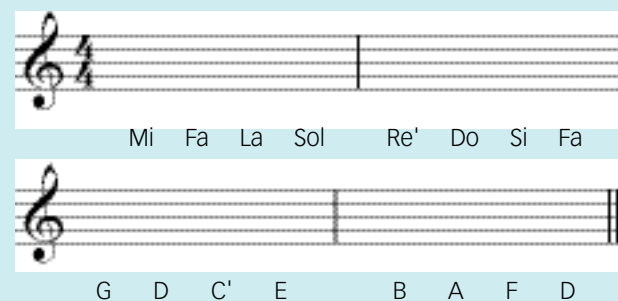
- 9 Practise writing treble clefs.



- 10 Look at the examples. Then copy the score and write the names and the letters for the notes.



- 11 Copy the score and write the notes, using only crotchets.



- 12 Write the dynamic indicators in order. Then write their meanings.

f *mp* *pp* *mf* *p* *ff*



MUSICAL REPERTOIRE



Oh, When the Saints, traditional song.

1.9

mf Oh, when the saints go march-ing in, oh, when the saints go march - ing in, oh Lord, I want to be in that num-ber, oh, when the saints go march - ing in. (three times)



Falling Slowly from the soundtrack of *Once* by G. Hansard and M. Irglova.

1.10

mf I don't know you, but I want you all the more for that. *p* Words fall through me and al-ways fool me, Fall-ing slow - ly, eyes that know me, and I can't go back. Moods that take me and e - raise me, and I can't re - act. *pp* and I'm paint - ed black. *f* Take this sink-ing boat and point it home, we've still got time. Raise your hope-ful voice you have a choice; you'll make it now. (Repeat)

The recorder

The recorder has seven holes on the front, called **finger holes**, which we cover with our fingertips. There's one hole on the back, called the **thumb hole**, which we cover with our thumb.

To play the recorder, keep your back straight, put your feet on the floor and relax your shoulders, arms and hands. Put your lips on the mouthpiece

with your mouth in the position that we use to say 'too'. Cover the holes with your fingertips and blow gently, without biting the mouthpiece.

When you finish playing, clean the recorder well both inside and out. Keep it in its case to protect it from bumps.

Learn the positions of these notes on the recorder:

Sol
or G

La
or A

Si
or B

Do
or C

Re
or D

5

How sound is made

When an object vibrates (for example, when we hit it or shake it), it emits **waves**. These waves travel through the air or another medium until they reach the brain via the ear. The brain perceives them as sound. Although we can't see these vibrations, sound is a physical phenomenon that can be measured and analysed with special devices.

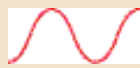
Have you ever tried to talk underwater? Isn't it surprising how different it sounds to normal? This is because sound waves travel at a speed of 340 metres per second in the air, but they travel much quicker in water: at almost 1,500 metres per second! This is why whales and dolphins can communicate with each other at distances of up to 30 kilometres.

Sound waves

Sound waves are different depending on the duration, pitch, intensity and timbre of each sound. This means that the sound wave of a high sound vibrates more quickly than the sound wave of a low sound. We use **hertz** (Hz) to measure the frequency of this movement's vibration.



high sound (more vibrations per second)

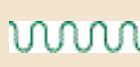


low sound (fewer vibrations per second)

The sound wave of a loud sound has wider waves than the sound wave of a quiet sound. We use **decibels** (dB) to measure the amplitude of the waves.



loud sound (larger wave amplitude)



quiet sound (smaller wave amplitude)

Duration is how much time a sound wave lasts and we use **seconds** to measure it.



long sound (waves of more duration)



short sound (waves of less duration)

DID YOU KNOW?



The North American composer **John Cage** (1912–1992) conducted an experiment in an anechoic chamber (a room designed to absorb all sounds and create total silence). He was surprised to find that he could still hear two sounds. One was low (his heartbeat) and the other was high (his nervous system at work). Cage reached the conclusion that **total silence doesn't exist**.

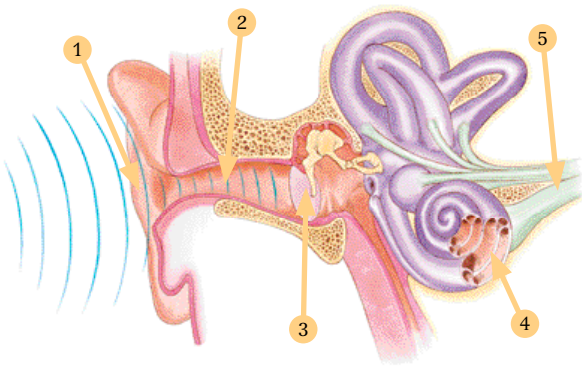
→ KNOW HOW TO



11 Conduct this experiment and observe the vibrations of sound waves.

- Fill a tub with water and wait until the surface is completely still. Place a speaker next to it and observe what happens to the water when you play some music.
- Do the waves change when you turn up the volume or when you play a different style of music? How? Try with different types of sounds. What happens to the waves?





Parts of the hearing organs.

6 The hearing organs

Our ears are great receivers of sound, but they're delicate: they can only take a certain amount of sound. Some diseases of the ear can cause partial or total loss of hearing, as well as problems with our sense of balance.

We can hear sound and noise thanks to our **ears (1)**. They receive sound waves and send them through the **ear canal (2)** to the **eardrum (3)**. The eardrum is a membrane that vibrates when it's in contact with sound waves. Then it transmits this vibration to a series of small bones in the middle ear.

Finally, the vibrations reach the inner ear and the **cochlea (4)** converts them into electrical impulses. These are transmitted via the **auditory nerve (5)** to the brain, which is where we really hear things.

We can also feel the vibration of sound waves with our bodies, through our sense of touch. It's not the same kind of perception, but many people with hearing loss learn to speak in this way. They can also use this sense to enjoy music and even to dance.

DID YOU KNOW?

Modern life, especially in cities, has meant a worrying increase in our **daily exposure to noise**. According to the WHO (World Health Organisation), a level of more than 65 dB around us is dangerous for our physical and mental health. However, more than 130 million people are exposed to this level of noise every day.

In classrooms, the recommended limit is 35 dB, but in reality the levels of noise in primary and secondary schools often reach 80 dB.



7 Sound and noise

From a scientific point of view, sound waves are responsible for the difference between sound and noise. In sound the waves are regular and organised; in noise the waves are irregular and disorganised.



sound (regular waves)



noise (irregular waves)

Noise pollution

An excess of sound and noise around us can be very annoying and even bad for our health. We call this noise pollution.

Levels of sound and noise up to 80 dB can cause listener fatigue, stress, insomnia, irritability, aggressiveness, etc. The risk increases at above 90 dB. This level can cause irreparable damage, such as a partial or complete loss of hearing. An isolated noise of over 160 dB (like an explosion or a gunshot) can cause a perforated eardrum or other irreversible injuries.

8

Soundscapes

A soundscape is the result of all the sounds in a space at a given moment. It's the combination of the sounds, noises and silences that exist in a park, a street, a house, a party, a city, etc. Many of these sounds are produced by human activity. This is why there are as many soundscapes as there are places in the world.

The musicologist Ramón Pelinski says: 'Everyday life has a soundtrack. If we don't listen to it, it's because we're already used to hearing it.' The sound of a place is unique, like its traditions, architecture or the accent of its inhabitants. But factories, motor vehicles, construction work, background music and so on, are making it difficult for us to hear the other sounds.

Our soundscapes have become more uniform, for example the sound of traffic is generally present in most people's lives. Today, noise pollution is a serious threat to the diversity of our acoustic environment.



Mardi Gras celebration in Edinburgh (Scotland).

→ KNOW HOW TO

12 Analyse different soundscapes.

- Look at the pictures on the right and imagine the soundscape of each place. In your notebook, write a list of sounds that you can hear there. Answer the questions for each soundscape.
 - Where in the world is the soundscape from?
 - Is there noise pollution?
 - Which sounds are produced by human activity?
- Stop what you're doing and listen carefully. What is the soundscape like? In your notebook, write a list of all the sounds around you.



- Look for an interesting soundscape in your everyday life and record it to play in class later. A minute should be long enough to identify exactly what environment it is. It's important to be completely silent when you record it.

In class, listen to the different soundscapes that you have all recorded and try to identify what they are.

Answer the questions for each soundscape.

- Does any sound stand out clearly?
- Can you hear sounds of human activity?
- And sounds from nature?
- What proportion of the sounds are from nature and what proportion are from human or industrial activity?
- Is there any noise pollution?
- What causes the noise pollution?
- What could the people there do to stop or reduce the noise pollution?





The *William Tell* Overture by Gioachino Rossini

William Tell was the last opera that Gioachino Rossini composed. It opened in Paris in 1829. Thanks to this work, the French government paid the living expenses of the Italian composer for the rest of his life. Although Rossini lived for many more years, he never composed another opera.

Plot

William Tell was a crossbowman and famous for his good aim. The governor of Altdorf (Switzerland) got angry when he heard that William Tell didn't bow when he passed by a symbol of Austrian power one morning. The governor arrested him, but he promised to release him if he passed a test. William Tell had to shoot an apple off the head of his own son, with an arrow, from 80 steps away. He split the apple right down the middle. When they asked him why he wanted two arrows if he could only use one, Tell replied that the other arrow was to kill the governor if the first arrow missed. They imprisoned the crossbowman again, but he managed to escape and killed the governor. The Swiss people revolted and the fight for Independence started.



About this recording

You're going to hear an excerpt from the *Overture* with a *galop* (gallop) rhythm. An overture is the orchestral piece of music at the start of an opera. It presents the main melodies of the work.



1.11

Listen to the end of the *William Tell* Overture and do the active listening activity.

- Listen carefully, following the beat, and find the parts where the music imitates the rhythm of horses galloping. How does the music make you feel?
- Identify the different parts of the overture.

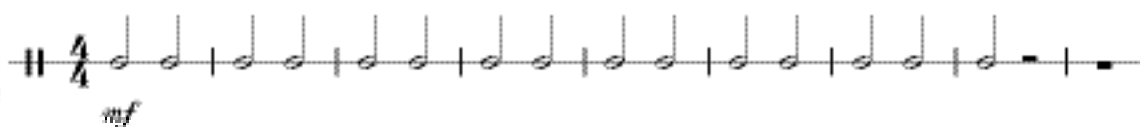


- What dynamics does the music have in each part? Match the elements in your notebook.

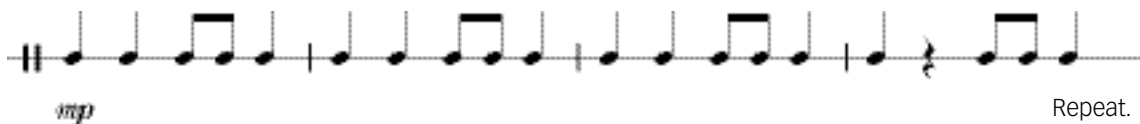
introduction	very loudly	<i>ff</i>
part A	loudly	<i>f</i>
part B	moderately loudly	<i>mf</i>
part C	moderately quietly	<i>mp</i>
part D	quietly	<i>p</i>
bridge	very quietly	<i>pp</i>

- Accompany the music with body percussion. Follow the rhythm and dynamics shown for each part.

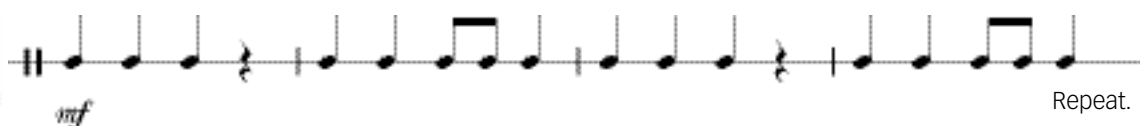
introduction



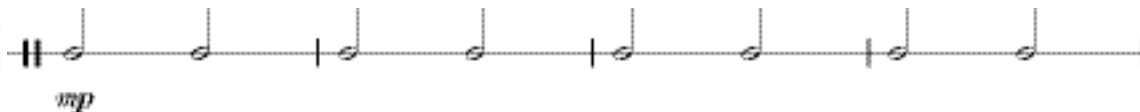
part A



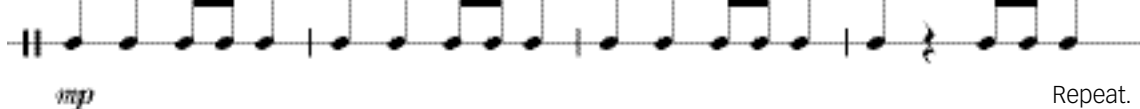
part B



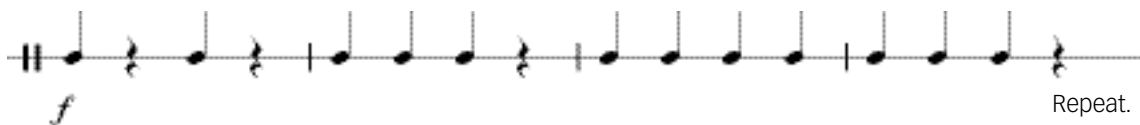
bridge



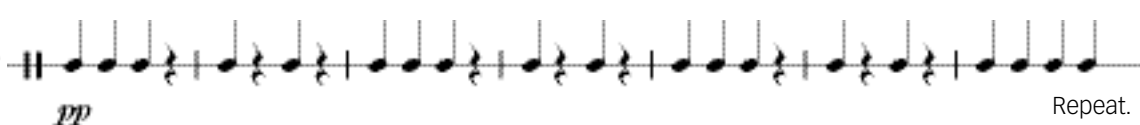
part A



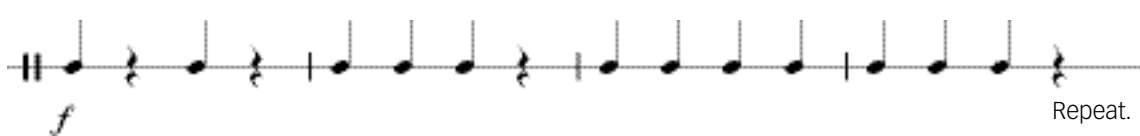
part C



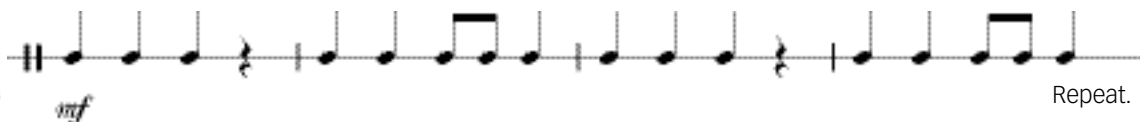
part D



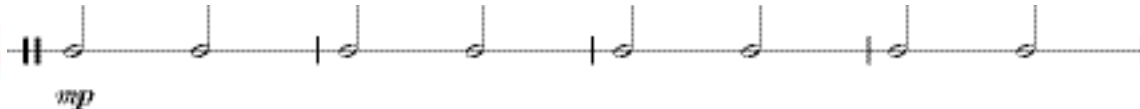
part C



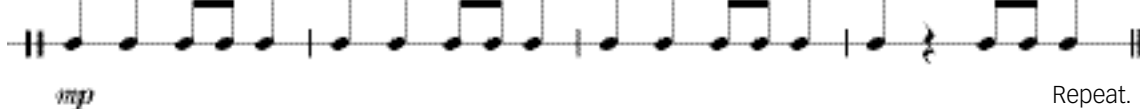
part B



bridge



part A



- Find information on the Internet about G. Rossini. Which other operas did he compose?

ACTIVITY ROUND-UP

Do the activities
in your notebook.

- 13** Copy the words in bold. Then write the correct places of origin. Finally explain what body percussions we use when we dance them.

gumbboot dance Spain
flamenco New Zealand
haka South Africa

- 14** Copy and complete the text.

In music, is a series of sounds of different durations. These sounds are organised into .

A beat is each of the in which musical time is divided and determines the of the piece.

We have to one beat in every two, in every or in every four.

- 15** What are the properties of sound?

- pitch, timbre, intensity and acoustics
- timbre, pitch, duration and rhythm
- duration, frequency, timbre and silence
- intensity, pitch, duration and timbre

- 16** Answer the questions.

- What is sound? And noise?
- What is noise pollution?
- What is the difference between the sound waves of a high sound and a low sound?
- What is the difference between the sound waves of a long sound and a short sound?
- What is the difference between the sound waves of a loud sound and a quiet sound?
- What unit do we use to measure pitch?
- And intensity?
- And duration?
- And timbre?

- 17** Copy and complete the table.

Name	Abbreviation	Meaning
<i>pianissimo</i>		
		quietly
	<i>mp</i>	
<i>mezzoforte</i>		
		loudly
<i>fortissimo</i>		
		gradually more loudly
	<i>dim.</i>	

- 18** Copy and complete the tables.

Do' or C'		

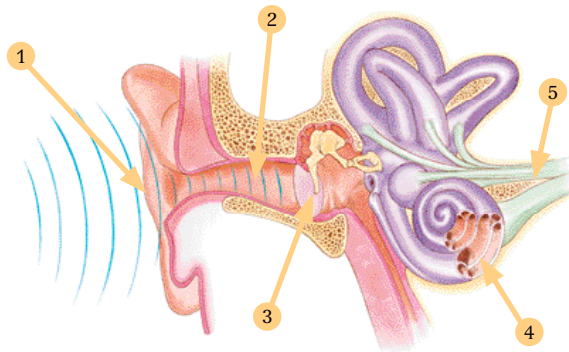
- 19** Copy and complete the tables.

Note values:

Rests:

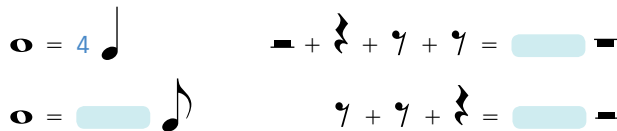
- 20** Define a soundscape in your own words. Then make a list of all the sounds that make up the soundscape of a theme park. Identify the types of sounds by their origin and say if there is any noise pollution.

- 21 Write an information card about the different parts of the hearing organs and explain their functions.



- 22 Draw the sound waves of: a high sound, a low sound, a loud sound, a quiet sound, a long sound and a short sound. Then explain the differences between them in your own words.

- 23 Look at the example. Then copy and complete the equivalents.



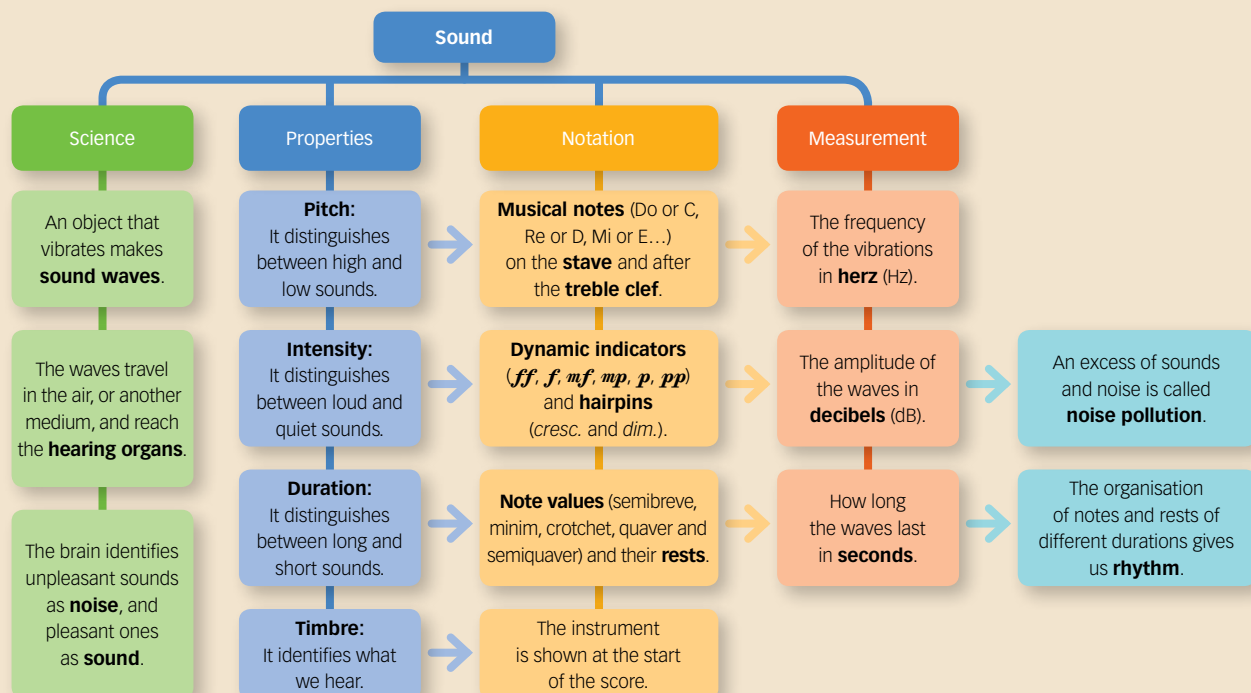
- 24 Find information on the Internet and complete the table.

Sound	Intensity in decibels
threshold of hearing	
relaxed breathing	
library environment	
normal conversation	
vacuum cleaner	
rock concert	
plane taking off	
threshold of pain	

- 25 What do we call the device that measures the intensity of sound?



KEY CONCEPTS





A soundscape with body percussion

The human body offers more acoustic resources than we imagine. For example, we can use it to imitate sounds in our surroundings, like the sounds of animals or the noises of traffic in a city. Although our voice gives us a lot of possibilities, we can also make these types of sounds just with body percussion. All we have to do is pay attention to the sounds around us and try to copy them. We need to use our imagination and try different options until we find the best body percussion for each sound. To demonstrate this, use body percussion to create the soundscape of a storm with your classmates.

Imagine a summer afternoon. A gentle breeze starts to blow and some raindrops start to fall. Little by little, the rain gets heavier, until it pours down. Then the thunder starts, making the ground shake. But summer storms are short and gradually the thunder goes away. The rain gets lighter and finally, the sky clears and the storm has gone.



Follow the instructions.

1 A gentle breeze starts to blow.



Rub the palms of your hands together gently to imitate the sound of wind and rain falling in the distance.

2 Some raindrops start to fall.



Start to snap your fingers, first slowly and then gradually more quickly. It doesn't matter if you don't all do it at the same time. Raindrops don't fall with a constant rhythm either.

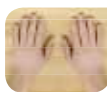
3 The rain gets heavier.



Pat your legs with alternate palms to imitate the sound of the rain. Gradually increase the intensity and speed to show that the storm is getting worse.

Just like in the step before, it's best if you don't all perform the percussion at the same time.

4 The thunder starts.



Hit the table three times to imitate the sound of a thunderclap. Hit hard the first time, but more gently the second and the third time (like the echo of the thunderclap).

In this case it's important that you all hit the table at the same time. Pay attention to your teacher, who will show you when to do it.

5 The rain pours down.



Pat your legs again. Do it quickly and vigorously to imitate the sound of rain.

6 There is more thunder.



Hit the table to imitate the sound of another thunderclap (hard the first time, and more gently the second and the third time). Your teacher will show you when to do it.

7 It's still raining, but the storm is going away.



Pat your legs again.

Little by little, do this body percussion less quickly and less hard, to show the storm going away.

8 We can hear the last drops of rain.



Snap your fingers, first quickly and then more slowly, until you stop completely.

Be quiet for a few seconds.



KEEP IN MIND

It will sound better if you **incorporate the sounds gradually**. For example, while some of the class rub their hands (step 1), others start to snap their fingers (step 2), and little by little the rest start joining in with the new percussion. Do this with all the steps (except steps 4 and 6) and notice the difference.



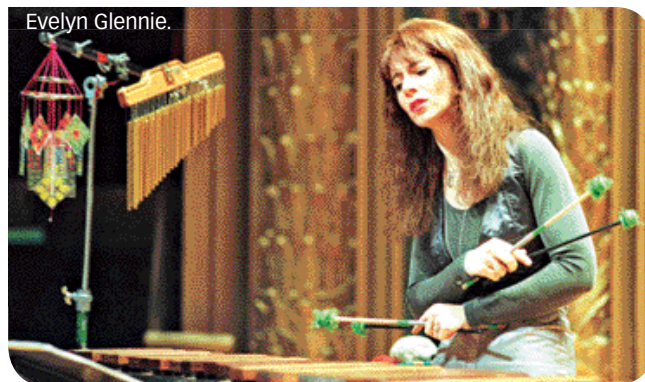
Can people with hearing loss listen to music?

If music is made up of sounds, how can people with hearing loss enjoy it? We often think that music is exclusively for people who can hear, but the experiences of people with hearing loss make us rethink how we understand sound.

Hearing is a sensation that happens in the brain when sound waves made by a vibrating object reach it. To be precise, the perception of sound happens in a place the size of a golf ball, called the auditory cortex.

According to the latest research, people with hearing loss register sounds in the same part of the brain. However, instead of analysing information that they receive from the hearing organs (that are damaged), they process the vibrations of the sound that they perceive with their whole bodies. Anyone who has been near a loudspeaker in a disco knows how it feels when music makes your whole body vibrate.

This discovery can help us to understand why so many people with hearing loss have dedicated their whole lives to music, overcoming their physical limitations and perceiving sound in different ways. Beethoven is one of the most well-known examples. It's said that he cut the legs off his piano to perceive the vibrations more clearly when he played. And his hearing loss didn't stop him from composing some of the most famous pieces in the history of music.



Today, Evelyn Glennie is one of the most well-known musicians with hearing loss. She has won two Grammy Awards and recorded many albums. This exceptional percussionist can identify the exact pitch of any note by feeling its vibration in different parts of her body. 'For some reason, we tend to differentiate between hearing a sound and feeling a vibration,' she says, 'but they're actually the same thing.'

Fortunately, there are more and more musical activities designed for people with hearing loss. In some concerts, for example, balls filled with air are given out so that the audience can feel the music in their hands. And sometimes wooden boxes are installed for people to lie on and feel the vibrations all over their bodies. After all, nobody wants to live without the pleasure of listening to music.

ACTIVITIES

- 26 What do we call the part of the brain that perceives sound? What function does it carry out in people with hearing loss?
- 27 What two musicians with hearing loss are mentioned in the text?
- 28 Watch a video of Evelyn Glennie on the Internet. What did you notice most about her performance? Do you think her hearing loss affects the way she plays?
- 29 Put your hand on an inflated balloon and play some music. How does it feel? How can you describe the vibration of the sound waves?
- 30 Imagine the life of a person with hearing loss. What other difficulties could they have in their daily life? What solutions can you think of?

