# APPENDIX I

# First step of the analysis using Ball's five-stage sequencing

**Music materials: *Listen, Play, Create – I.* Unit 1: What is sound? (1st ESO)**

- Activation stage and Introduction stage: Part 1, pages 4-5

The beginning activities of a lesson should correspond to Ball's et al (2015) Activation stage. In spite of having activities that we can relate to the Activation stage, 1, 2, 3, 7 and 10, the first part mostly seems suitable for the Introduction stage because of the following reasons.

Firstly, it is introduced with a reading, *The sound. Production and transmission*. The text provided is short, important vocabulary is highlighted in bold and there is a picture of a sound wave. As Ball et al (2015) state, it is very frequent to see CLIL lessons using a text as a tool to dive into the topic of the Unit. However, this type of activities can work in to different ways: either providing useful language and concepts to start the learning process or becoming an inconvenience as the text can be heavy to read due to a conceptual overload. Let us not forget that we are at the first lesson of the first Unit, at the beginning of the year, and that students belong to a soft CLIL programme. Therefore, we consider that introducing a Unit with a text with no previous activation phase can lead to nearly immediate information loss, as there is no evident warm-up or lead-in phase to the topic.

Secondly, the lessons provides several activities which, from our point of view, can be divided in two different categories: reading comprehension activities and experimental activities. The reading activities are self-explanatory, those that can be answered with the information from the text provided; and the experimental activities are those were students are encouraged to create, produce, experiment and interact with each other and the classroom environment. We consider that both types of activities are helpful for CLIL lessons, however the order they are presented in the lesson seems, from our point of view, slightly incoherent. For example, the lesson starts with a reading and the first activity is experimental because they are have to work in groups to describe vibration when playing certain instruments; only activity 4 is based on the text information. Therefore, why starting with a text when you ask your students to experiment? We think that changing the layout of the activities would provide a more fluent sequence between the Activation and Introduction stages compressed in this lesson. Our suggestion for improving the sequence would be the following: experimental activities 1, 2, 3 and 8 first, as they would foster the students' previous knowledge activation, followed by the reading insert *The sound. Production*

*and transmission* with the corresponding comprehension activities 4, 5, 6, 7, 9 and 10. You can see this reorganization in Appendix IV.

Finally, we would like to point out the lack of any other support, but the text and only one image. In a hard CLIL programme, the conceptual overload in the early stage should tend to decrease in favour of the linguistic and procedural dimensions (Ball et al, 2015), and in order to facilitate the concepts' acquisition other types of comprehension and learning support, such as visuals, need to be incorporated. For example, in the experimental activity number 1 several instruments appear, guitar strings, cymbal, tambourine and xylophone, which can be easily illustrated. Similarly happens in activity 3 where several situations are described to find out the environment the sound propagates through. The linguistic demand is quite high as students should understand perfectly the context provided, so if there is any sort of language barrier the activity cannot be accomplished. To lower the anxiety level caused by a low language knowledge, we think that visual support is essential. This way the activity is accomplishable procedurally, even though there may be a linguistic barrier.

- Complication stage: Part 2, pages 6-8

The second lesson follows a similar pattern as the previous. It starts with a text, *Properties of sound*, which is longer; it has the important concepts highlighted in bold and it is divided in two section, the first one on page 6 and the other on page 7. The whole reading, which would take a full page even tough it is divided in two sections, evidence that the third stage, Complication, has begun. This stage is the longest in time and with the highest conceptual demand (Ball et al, 2015). The text itself becomes less appealing as it becomes heavier to read with an increasing amount of CALP as specialized concepts in bold appear more frequently and there are constant definitions, e.g., '*Frequency is the number of vibrations per second. […] A low sound has a low frequency. […] We can't hear sound lower than 20 vibrations […].We name those sound infrasounds. […] As a general rule, small instruments have high-pitched sounds […].*' However, it still tries to conserve small digestive chunks by providing the information in short paragraphs with as simple and short sentences as possible.

As this lesson is the beginning of the third stage, we consider that using a text as a starting point of the lesson may be useful tool as it introduces relevant concepts for further comprehension and activity accomplishment. Once again, we have found the same division with the types of activities as in the previous lesson. There are reading-related activities, 11, 12, 13, 16, 18, 19 and 22, and experimental activities, 14, 15, 17, 20 and 21. This means that the workload is not only related with text, but also with experimentation.

We consider that the proposed layout is not as disorganized as in the previous lesson because we find the text essential to introduce the vocabulary that further is used in the experimental activities. However, we do think that changing the activities order can improve the fluency and sequence of the lesson. For example, the first text extract could be introduced after activities 11, 12, 13, 16 and 18 arranged in one single activity (see Appendixes, Reorganized music materials from Unit 1, *Listen, Play, Create – I*'), followed by the experimental activities 14, 15, 17. Something similar could be done with the second text extract, firstly introduce, the reading-related ones, 22, and, finally. the experimental activities 19, 20 and 21.

We would also like to state that in this lesson there is little visual or listening support when it comes to dealing with BICS (Basic Interpersonal Communicative Skills), for example, in activity 17 you can find a list of sounds –school bell, door slam, motor, siren, bird and thunder– that must be divided into low-pitched and high-pitched sounds. It would be recommendable to provide at least the sound of each element to lower the linguistic demand in favour of the procedural effectiveness. Note that we are analysing the student's book and not the teacher's book, so we do not know if there are any additional audio materials for such activities. We base our conclusion on the fact that the instruction of the exercise is 'Classify these sounds' and not 'Listen to the following sound and classify them in the following categories', for example. Another important remark is the fact that there is no peer work in this lesson, an important pillar in CLIL classes. In the previous lesson, in activity 1 there was group work. Following Ball's et al (2015) statement and following the ideas do Dörnyei (1994), peer work can make students feel safer when it comes to solving problem in other language and it would lower the anxiety level in relation with the correct performance on the activities.

- Complication, Synthesis, Assessment and Feedback stages: Part 3, pages 9-16 and Key Vocabulary, page 17

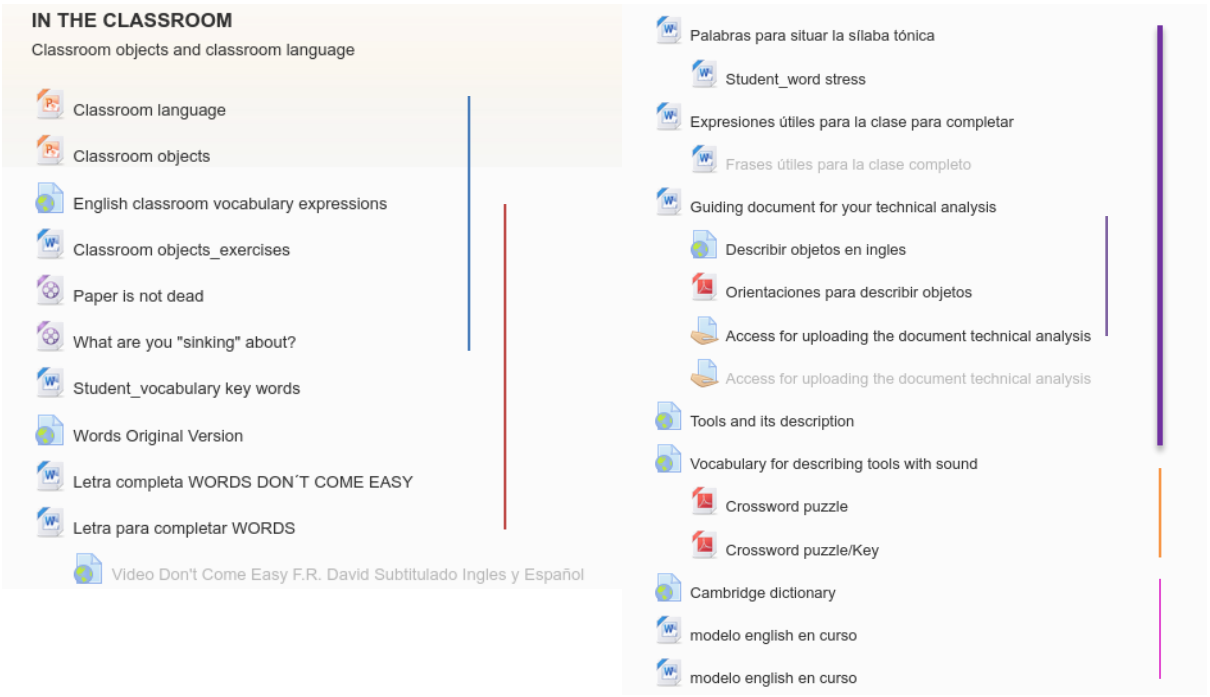
This is the last part of the Unit and the longest one. The same as the previous lesson, the beginning of part 3 belongs to the Complication stage as it still deals with concepts explanation. The lessons begins with a text that later is followed by six activities. Three of them are for reading comprehension check, 23, 24 and 28, and three are experimental 25, 26, 27. After page 12, there is an evident emphasis on practice based on the theory learnt along the three lessons, what we consider to be the final part of the Complication stage. On pages 15 and 16, there are some activities, 36, 37 and 38, which can be part of the Synthesis or Assessment stage because it is a revision of the whole Unit with a fill-in-the-gaps activity based on all the information from previous texts. At the end, there is a list of Key vocabulary with those words that appeared in bold throughout the lessons' texts.

In the third part, three stages overlap. There is no clear differentiation between them, which not necessarily means there is a bad sequence, as Ball et al (2015) suggest, many times a sequence can be designed in a way where activities allow an unnoticeable flow between stages. However, in the third lesson of the book we find it to be somehow confusing as the first two parts and the first pages of part three are structured in the same way: a text followed by activities on the topic; but from page 10 onwards there is an evident emphasis on practice activities. For example, activities 29 until 37, page 12 to 15, are purely experimental. Students are encouraged to listen, give opinions, create with Audacity their own materials, interact with peers, etc. We think it could have been a good option to make a visual division between theory lessons and practice. This section could be called *Listen and Create*, similar to the book's title, to evidence the practical nature of the activities, as there is a clear distance from reading comprehension activities.

Another issue is that the Synthesis stage on page 16 activity 38 appears as if it was immersed in lesson three when its real function if to revise the students' knowledge as it states 'Fill in the summary of the lesson'. Another section could be created here called, for example, *Rewind* as it refers to the music context and means going back, exactly what the Synthesis stage does. However, if we were to consider this page the Assessment stage instead of the Synthesis, some production activities could be added after the fill-in-the-gaps activity. Learning both content and language is not based just on reception and about memorizing, but also about production, e.g. the activity 35 can be used as an assessment tool as it considers all the previously learnt theory and involves production using a recording programme, Audacity.

**Technology materials: Unit 1 – In the classroom (2nd ESO)**

The provided materials for this subject are not based on book instruction. The teacher has designed them, so the analysis of the Unit cannot be followed by pages, as in the previous subject. The technology teacher has provided the activities and material of the first Unit for 2nd year of ESO course, as it is the only subject available in the bilingual programme for this year. We are going to provide the caption of the complete set of materials in the first Unit available in the high school Moodle platform with the stage differentiation:




Legend: Activation, Introduction, Complication, Synthesis, Assessment and Extra materials

If we were to analyse all the Units of the academic year and try to divide them in the same five stages, we can state that this Unit would be clearly immersed in the activation phase of the academic year, as it seems to provide lot of scaffolding (vocabulary and grammar structures), helpful even for further Units, e.g. language in class, basic vocabulary or pronunciation instruction. However, our analysis is focused within the content of the Unit, so we tried to make the five-stage division with the materials provided. We also consider important to mention that we have not been provided a teacher's methodological orientation for the suggested activities, neither the access to the Moodle platform to access all the materials. The only documents that do have some type of instructions are the 'Classroom objects' activity and the technical report.

We are going to start commenting the analysis of these materials in a different way than the music ones. There, we had a clear division in three parts, which could correspond to a full lesson; however here there is no such clear division. Therefore, the following division is made based on characteristics of each stage and how do the materials relate to them.

- Activation stage, possible Lesson 1:

Two PowerPoint presentations are the key elements of the beginning of the Unit. They present the general useful language in class as well as help students remember items of vocabulary. As it is the starting Unit and the first time the student are studying this subject in English, we consider this to be a coherent start of the course, however we find the vocabulary quite basic taking into account that they have probably studied the same objects in normal English

lessons. Another alternative could be introducing more technical vocabulary, e.g. drill, hammer, hot glue, silicone, sandpaper, screwdriver, etc., so they get to learnt the specific vocabulary used in a technology class rather than the general one (paper, scissors, eraser, whiteboard, etc.), but we will see that these terms are introduced a bit later in the Unit. In general, the Activation stage is low in demand for all the dimensions. If the vocabulary difficulty had been higher while using the same matching activities and pair work, the conceptual demand could increase slightly and so become more challenging for the students. We have to point out that in the 'Classroom objects' exercise, the teacher makes emphasis on language rather than content, as he provides scaffolding before doing the activity. This serves as a good example of alternation between focus on subject content and language use, described in the CLIL theory. There was no such alternation in the music materials, which evidence a clear predominance of content over language.

- Introduction stage, possible Lesson 2:

As we can see in the Moodle guide, the two initial stages overlap with each other. It was hard for us to tell which of the activities do really belong to the Activation stage or the Introduction stage because everything would depend of the number of lessons devoted to teach these materials. For the second stage, we chose the 'Student - vocabulary key words' activity and the fill-in-the-gaps lyrics activity, as the first one would serve as a revision of the vocabulary introduced in the activation stage and the second would finish the lesson. When providing the materials, the teacher gives several links where students could extract the information for the vocabulary activity. One of the links is '*Herramientas en inglés*', which introduces the vocabulary of a technology class, the one we suggested in the previous stage, or the Cambridge Dictionary to search for definition. In addition, the teacher again provides with some scaffolding in form of examples, '*Propuesta uso vocabulario de clase-Descripción*', so students can fill in their own list. This evidence the blurring line that cannot really divide this stage from the previous.

We also consider that the two videos, 'Paper is not dead' and 'What are you 'sinking' about?' could be included in this lesson in order to foster debate. Again, this would depend of the teacher preference and timing. Overall, this stage also has very low demand in all three dimensions. If we were to create a debate based on the videos, the linguistic demand would increase, however we think there is a lack of specific content related to technology in them, which is not necessarily a bad point. As we had commented in our theoretical framework, CLIL lessons are not only about the subject, but also the language. The two videos can be a good tool to introduce some opinion language, increasing so the demand of the linguistic dimension.

- Complication stage, possible Lesson 3:

As Ball et al (2015) state, the complication stage should be the longest one in time due to its complexity; main concepts and theories are acquired during this stage. However, in the materials provided we also found it quite difficult to consider any material purely from the complication stage. We have decided to include the word stress activity, the classroom expressions activity and the guidance for a technical analysis in this stage as they introduce new concepts and also because the technical analysis is the activity which would require more time to conclude. The dimension relation starts to differ, the conceptual demand becomes medium as they have to use the vocabulary learnt previously, the procedural also stays medium as the have to follow the steps on how to write a technical analysis, and the linguistic demand becomes high, as the activity itself requires a specific language use and accuracy.

- Synthesis stage, possible Lesson 4:

'Vocabulary: describing tools with sounds' activity and the crossword seem low in procedural and linguistic demand as the definition for the tools in the crossword may be given though sounds rather than descriptions. Due to this, we have considered these materials to be part of the synthesis stage because it provides a general revision of the previously taught content and, as the main content was vocabulary, the revision can be done through a crossword.

We find this stage quite short, however we do understand this as the students may be doing their main project –the technical report– at the same time in class after the introductory activities, as the guide of the technical report states in page 2 point 5 'You will dispose two classroom sessions for elaborating it'. This final project can be considered not only part of the complication stage, but also it becomes the assessment tool for the next stage.

- Assessment and Feedback stages, possible Lesson 5:

Both stages are closely related because the guide to elaborating the technical report says in page 2 point 4 'A session will be devoted to show the works in public through projection in the classroom and defense of the student. The exercises will be graded and the most suitable ones will be selected and incorporated to the classroom consultation material'. Both stages are clear and correlated; the only aspect we are missing is the evaluation tool. The teacher has not provided with any evaluation chart or checklist with the criteria that would back the students' marks.

The assessment stage is defined by a high demand in the conceptual and linguistic dimensions, which the final project seems to follow as they have to give a detailed description of a technology classroom tool. The procedural demand should stay medium or low in order not to

overload the students. In this case it is probably a medium demand as there are several instruction to do the report: '*a. Personal identification, b. One or two pictures of the object, c. A sketch of the object with general measures, d. A detailed technical analysis of the object following the detailed instruccions we saw before'*. Regarding the feedback stage, as we have no evaluation tool to analyse, we cannot establish the dimension relation; however, we think that there should be a balance between the three dimension, as CLIL theory recommends, because to achieve a certain competence students need to do *something* with the learnt language and concepts.

Overall, we think that by creating your own materials, a teacher can be more flexible to decide when he/she wants to emphasise language teaching or content teaching. This allows to fit better into the students' needs, work with any type of gaps (either linguistic or conceptual) and to make the subject more approachable. In addition, the use of hyperlinks and extra materials at the beginning Unit can lower the anxiety levels of the students, who are facing this subject for the first time, as it makes it seem like the important is not memorizing but the investigation and learning processes. In spite of fearing that this Unit was going to be too simple regarding content, the teacher has added a specialized task, the technical report, what supports the idea that this subject is not about only practising English language, but also about acquiring specialized knowledge.

# APPENDIX II

## Table with collected data from analysis based on the identified criteria from the Theoretical framework

Legend: **0:** doesn't appear, **-** **:** appears rarely, ✓ **:** present

| | 1. Ball's (2016) five stages | 2. Negotiation of meaning (gaps) (Ellis, 2003) | 3. Freedom to choose language needed (Ellis, 2003; Nunan, 2016) | 4. Communicative behaviour (eg. ss-ss interaction) (Ellis, 2003; Nunan, 2016) | 5. Oriented to real-world processes of language (Ellis, 2003) | 6. Engages cognitive processes (classifying, ordering, reasoning, etc.) (Ellis, 2003; Nunan, 2016) | 7. BICS (Ball, 2016; Cummins, 2008) | CALP (Ball, 2016; Cummins, 2008) |
|---|---|---|---|---|---|---|---|---|
| Music materials | Only 3 Activation and Assessment+ Feedback missing | - Mainly information gaps in comprehension activities<br>✓Experimental activities | ✓ in experimental activities<br>**0** in reading comprehension activities | - Appears rarely in experimental activities and little in comprehension activities | - Experimental activities<br>**0** Comprehension activities | **0** Comprehension activities<br>✓ Experimental activities | - Mostly in experimental activities where language is not predetermined | ✓ in text, in comprehension activities and experimental activities instruction |
| Technology materials | ✓ Feedback is the only difficult to detect | ✓Information gap with guidance | - Guidance questions to help | ✓ Most activities are done in pairs | ✓ All activities are aimed to be able to write a technical report | ✓ selecting, analyzing, defining, debating | ✓ included in activities like 1.2 in *Classroom objects-exercises* | ✓included gradually to accomplish the technical report |

# APPENDIX III

## Music materials: *Listen, Play Create - I*

# LISTEN, PLAY, CREATE - I

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## CONTENTS

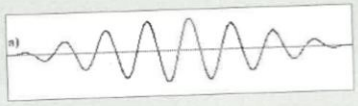


*The activities with listening/videos, the Internet resources and the digital activities in this book can be found at the blog: http://listenplaycreate.blogspot.com.es/, classified by lessons.*

# 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 |
|---|---|---|
| *Sounds in the countryside* | 10 | |
| *Quiet library* | 20-30 | |
| *Conversation among few people* | 40 | |
| *Conversation among a lot of people* | 60 | |
| *Vacuum cleaner* | 70 | |
| *Train* | 80 | |
| *Traffic* | 90 | |
| *Hand drill* | 100 | |
| *Loud rock concert* | 110 | |
| *Plane engine* | 120 | |
| *Pain begins* | 130 | |
| *Permanent damage* | 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.*

| *Low and soft* | *Low and loud* | *High and soft* | *High and loud* |
|---|---|---|---|
| | | | |
| | | | |

***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 |
|---|---|---|
| ***pp*** | *pianissimo.* | VERY SOFT |
| ***p*** | *piano* | SOFT |
| ***mf*** | *mezzo forte* | INTERMEDIATE |
| ***f*** | *forte* | LOUD |
| ***ff*** | *fortissimo* | VERY LOUD |

**Gradual changes of intensity**

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

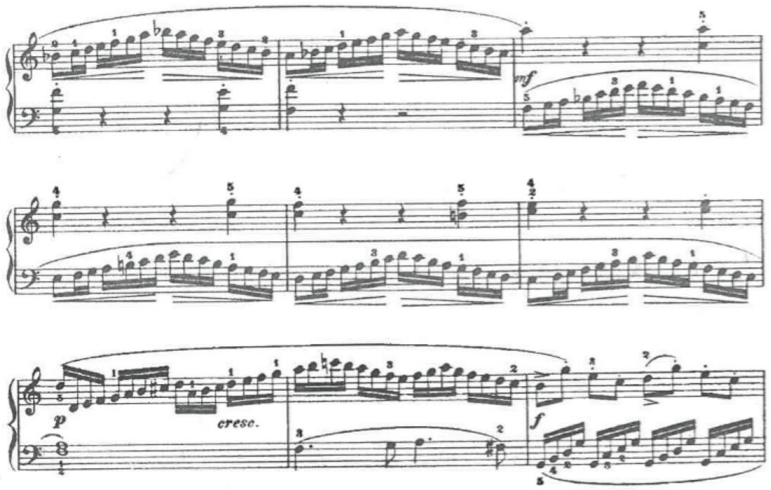
| ITALIAN WORD AND ABBREVIATION | HAIRPIN | MEANING |
|---|---|---|
| *Crescendo* o *cresc.* |  | GRADUALLY GETTING LOUDER |
| *Diminuendo* o *dim.* |  | GRADUALLY GETTING SOFTER |

***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?***



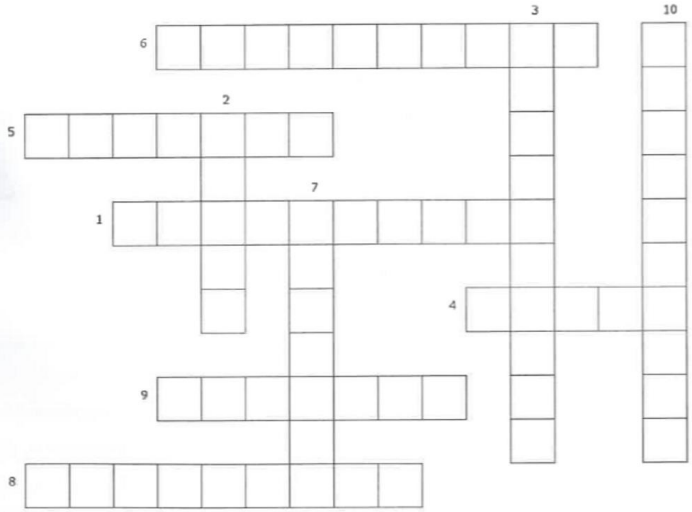
***Activity 27.- Listen to these two versions of the same song: Mr Sandman, by The Chordettes and by Blind Guardian.***
***How does the intensity change?***

***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 form "The carnival of the animals" by Camille Saint-Saëns and fill in the gaps.***

| | *1º Cocks and hens* | *2º 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? | | |



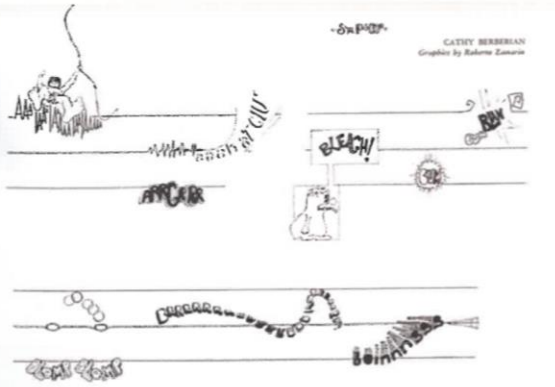
***Activity 32.- Imagine that the notation doesn't exist and you have to write sounds. Here you are an example.***

| 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

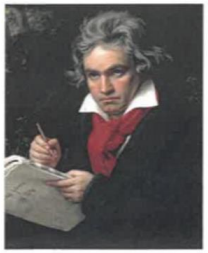
- ✓ The pitches:
- ✓ The durations:
- ✓ The intensity or volume:
- ✓ The timbres or tone colours:

***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:***



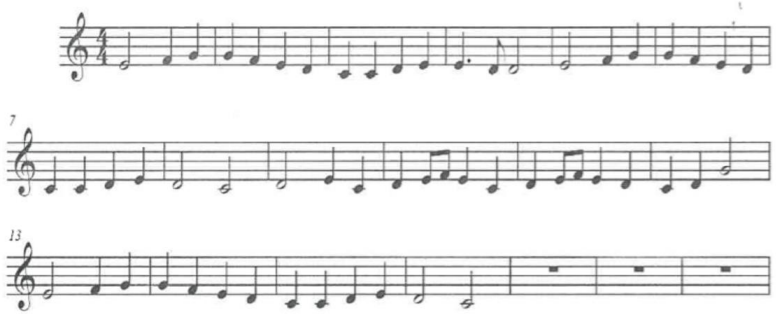
1st) Low and then high

2nd) Soft and then loud

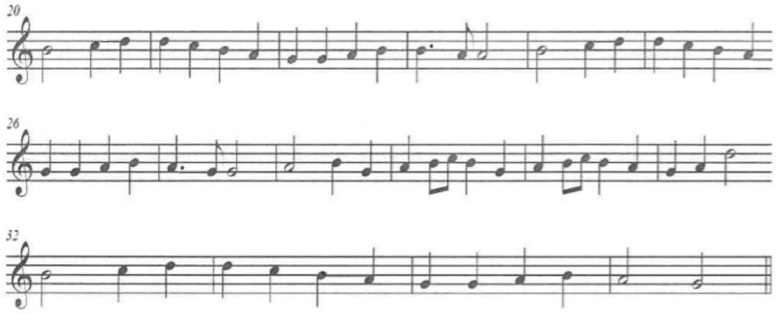
3rd) Long sounds and then short sounds

4th) Recorders and then xylophones

*Low melody:*



*High melody:*





***Activity 35.- Contest of versions.***

Work in pairs. After learning this rhythm, record in **Audacity** your own performance. We will listen to all your versions and we will vote for the one that we like best.

You can play...

- ✓ *Different pitches:*
  The high sounds are written on the line and the low ones under the line. Respecting that, you can choose the notes or sounds that you want.
- ✓ *Different durations:*
  The long sounds are crotchets and the short ones are quavers. Keeping that relationship you can play them as long or short as you want.
- ✓ *Different intensities or volumes:*
  You can play as softly or loudly as you prefer.
- ✓ *Different tone colours or timbres*
  You can play it with your body, objects, your voice, instruments...

***Activity 36.- Look for the words that complete the statements in this word search puzzle:***

A) The sound is a _ _ _ _ _ _ _ _ _
B) The sound vibrations travel as a _ _ _ _
C) The sound wave travel through the air, solids and the _ _ _ _ _
D) We finally hear in the _ _ _ _ _
E) The sound can't exist in the _ _ _ _ _ _
F) We call a sound that disturb us a _ _ _ _ _
G) The four properties of the sound are:

_ _ _ _ _
_ _ _ _ _ _ _ _
_ _ _ _ _ _
_ _ _ _ _ _ _ _ _

| V | A | C | U | U | M | Z | U | T | Y |
|---|---|---|---|---|---|---|---|---|---|
| D | I | R | S | O | H | C | T | I | P |
| U | T | B | I | L | E | H | J | M | O |
| R | A | C | R | M | W | D | C | B | N |
| A | D | W | O | A | A | L | V | R | I |
| T | F | X | V | C | T | N | K | E | A |
| I | G | E | S | M | E | I | F | J | R |
| O | H | Q | D | H | R | H | O | U | B |
| N | O | I | S | E | N | D | Y | N | I |
| K | M | U | Z | D | R | A | V | C | E |
| E | P | X | E | S | G | I | N | O | L |
| L | Y | T | I | S | N | E | T | N | I |

***Activity 37.- Fill in the gaps:***

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | **Duration** | | | | | |
| | | | | | **Soft** | | |

***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 | /djuˈreɪʃn/ |
| (to) play | /pleɪ/ | long | /lɒŋ/ |
| (to) create | /kriˈeɪt/ | short | /ʃɔːt/ |
| sound | /saʊnd/ | timbre | /ˈtæmbə(r)/ |
| production | /prəˈdʌkʃn/ | tone colour | /təʊn/ /ˈkʌlə(r)/ |
| transmission | /trænsˈmɪʃn/ | (to) identify | /aɪˈdentɪfaɪ/ |
| vibration | /vaɪˈbreɪʃn/ | instrument | /ˈɪnstrəmənt/ |
| wave | /weɪv/ | voice | /vɔɪs/ |
| medium | /ˈmiːdiəm/ | choir | /ˈkwaɪə(r)/ |
| (to) propagate | /ˈprɒpəgeɪt/ | piano | /piˈænəʊ/ |
| vacuum | /ˈvækjuəm/ | violin | /ˌvaɪəˈlɪn/ |
| speed | /spiːd/ | recorder | /rɪˈkɔːdə(r)/ |
| through | /θruː/ | xylophone | /ˈzaɪləfəʊn/ |
| noise | /nɔɪz/ | | |
| unpleasant | /ʌnˈpleznt/ | intensity | /ɪnˈtensəti/ |
| (to) disturb | /dɪˈstɜːb/ | volume | /ˈvɒljuːm/ |
| | | dynamics | /daɪˈnæmɪks/ |
| hearing | /ˈhɪərɪŋ/ | loud | /laʊd/ |
| silence | /ˈsaɪləns/ | intermediate | /ˌɪntəˈmiːdiət/ |
| excerpt | /ˈeksɜːpt/ | moderate | /ˈmɒdərət/ |
| composer | /kəmˈpəʊzə(r)/ | soft | /sɒft/ |
| notation | /nəʊˈteɪʃn/ | gradual | /ˈgrædʒuəl/ |
| (to) perform | /pəˈfɔːm/ | change | /tʃeɪndʒ/ |
| performance | /pəˈfɔːməns/ | hairpin | /ˈheəpɪn/ |
| (to) record | /ˈrekɔːd/ | amplitude | /ˈæmplɪtjuːd/ |
| | | (to) measure | /ˈmeʒə(r)/ |
| property | /ˈprɒpəti/ | decibel | /ˈdesɪbel/ |
| pitch | /pɪtʃ/ | *pianissimo* | /ˌpiəˈnɪsɪməʊ/ |
| high | /haɪ/ | *piano* | /piˈænəʊ/ |
| low | /ləʊ/ | *mezzo forte* | /ˌmetsəʊˈfɔːteɪ/ |
| melody | /ˈmelədi/ | *forte* | /ˈfɔːteɪ/ |
| frequency | /ˈfriːkwənsi/ | *fortissimo* | /fɔːˈtɪsɪməʊ/ |
| hertz | /hɜːts/ | *crescendo* | /krəˈʃendəʊ/ |
| infrasound | /ˈɪnfrəsaʊnd/ | *diminuendo* | /dɪˌmɪnjuˈendəʊ/ |
| ultrasound | /ˈʌltrəsaʊnd/ | | |
| tuning fork | /tjuːn ɪŋ/ /fɔːk/ | | |
| (to) tune | /tjuːn/ | | |

# APPENDIX IV

## Suggestion of Reorganized music materials from Unit 1, *Listen, Play, Create – I*

### LESSON 1.- WHAT IS SOUND?

- **Activation stage:**

***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 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.*

- **Introduction stage, text from part 1:**

Possible instruction to combine all reading comprehension activities together: 'Try answering these questions. If you don't know the answers, read the text to find the information you need:'

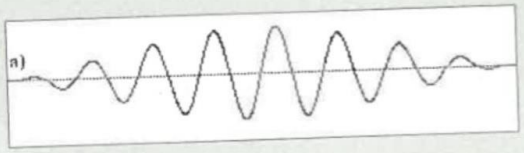
***Activity 4.- What is the speed of sound through air?***

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

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

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

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

*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 10: To improve the activity we suggest the following instruction: 'Work in pairs. Each of you have to write three sentences, one false and two true, based on the information from the text. Then, read the sentences to each other and try to find the false one.

Don't make the false sentences too evident!'

***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.

- **Complication stage, texts from part 2:**

Possible instruction to combine all reading comprehension activities together: 'Try answering these questions. If you don't know the answers, read the text to find the information you need:'

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

*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?*

## 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: instruction adaptation was extracted from the Suggestions for improvement section in the music materials: 'Work with a partner. Your partner closes the book. Read some of the sentences below aloud with the gaps provided. Your partner has to say the correct words to complete the sentence. If he/she gets them wrong, assess him with the correct information from the text'. Examples of sentences with gaps for student to read:

-Women have higher voices because their_____are smaller.

-The_____is the number of vibrations_____.

-Generally, small instruments produce_____ and big instruments produce_____.

-The pitch refers to_____. It depend on the_____.

-Frequencies lower than 20 vibrations are called_____.

-Frequencies higher than 20,000 vibrations are called_____.

-The Unit to measure the vibration per second is called_____.

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

The pitch refers to_____. It depends on the _____.

***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 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?***

**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:

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

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

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

| *Low and soft* | *Low and loud* | *High and soft* | *High and loud* |
|---|---|---|---|
| | | | |
| | | | |

## 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 |
|---|---|---|
| *pp* | *pianissimo.* | VERY SOFT |
| *p* | *piano* | SOFT |
| *mf* | *mezzo forte* | INTERMEDIATE |
| *f* | *forte* | LOUD |
| *ff* | *fortissimo* | 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 |
|---|---|---|
| *Crescendo* o *cresc.* |  | GRADUALLY GETTING LOUDER |
| *Diminuendo* o *dim.* |  | GRADUALLY GETTING SOFTER |

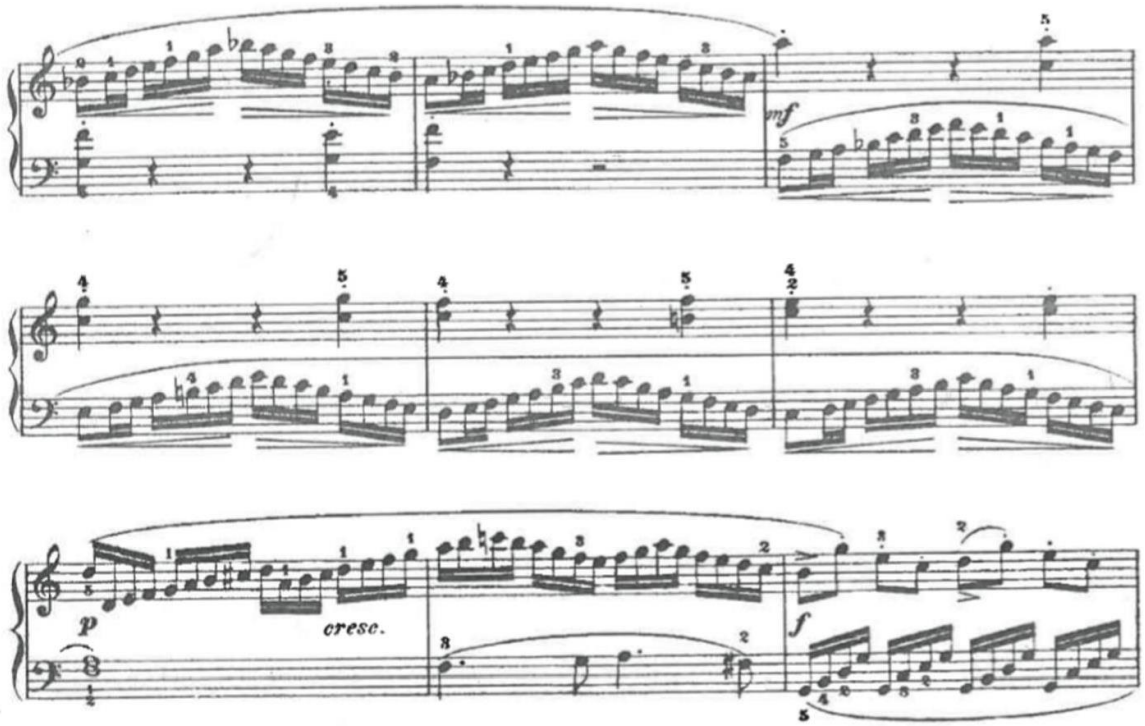
Activity 23: According to the Suggestions for improvement section, this activity could be adapted the following way: 'Work with a partner. Look at the dynamics and think of a sound you associate to each of them. Set you own order, make the corresponding sound and your partner has to guess the correct order of your dynamics'

***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?*

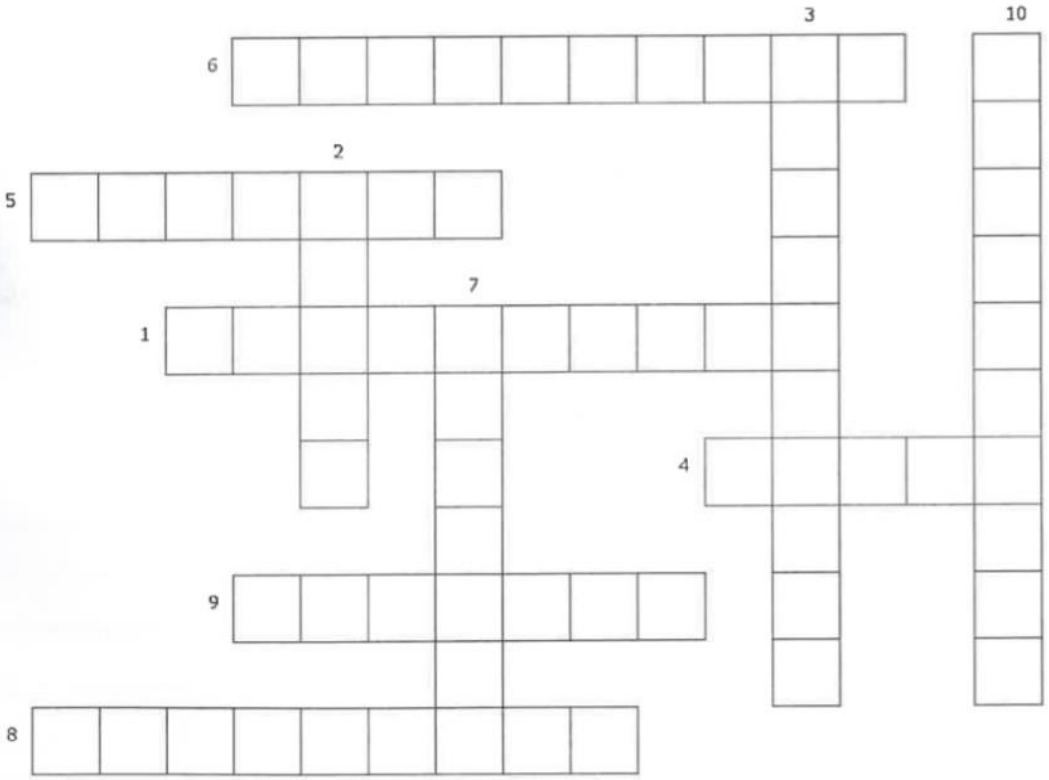
*How does the song change because of that?*

Activity 28: Based on the Suggestions for improvement section, we propose the following instruction for this activity: 'Work with a partner, you are going to do a crossword. Look at the text you have read earlier. Select ten items of vocabulary. Write the definitions for your words. Design your crossword carefully and pass it to another pair so they solve it. Do the same with their crossword'

***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.



- **Practice section 'Listen and Create'**, also included in the Complication stage, which we recommended to divide visually from the previous text-based activities.

***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 form "The carnival of the animals" by Camille Saint-Saëns and fill in the gaps.***

| | *1º Cocks and hens* | *2º 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? | | |

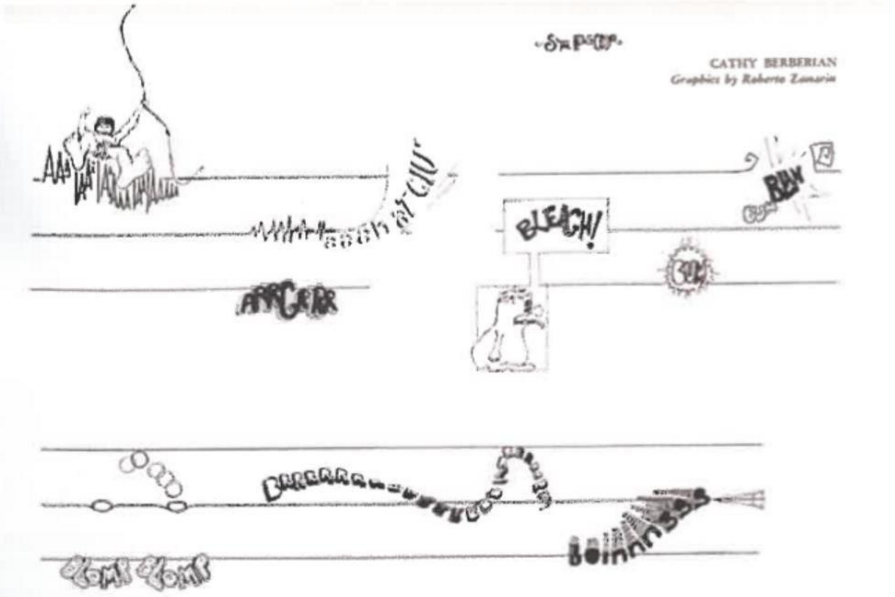
***Activity 32.- Imagine that the notation doesn't exist and you have to write sounds. Here you are an example.***

| 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

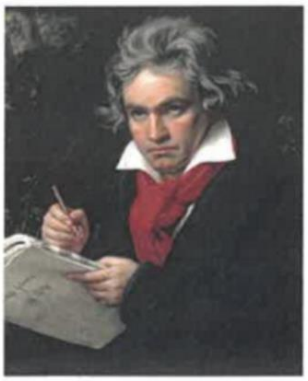
- ✓ The pitches:
- ✓ The durations:
- ✓ The intensity or volume:
- ✓ The timbres or tone colours:

***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:***



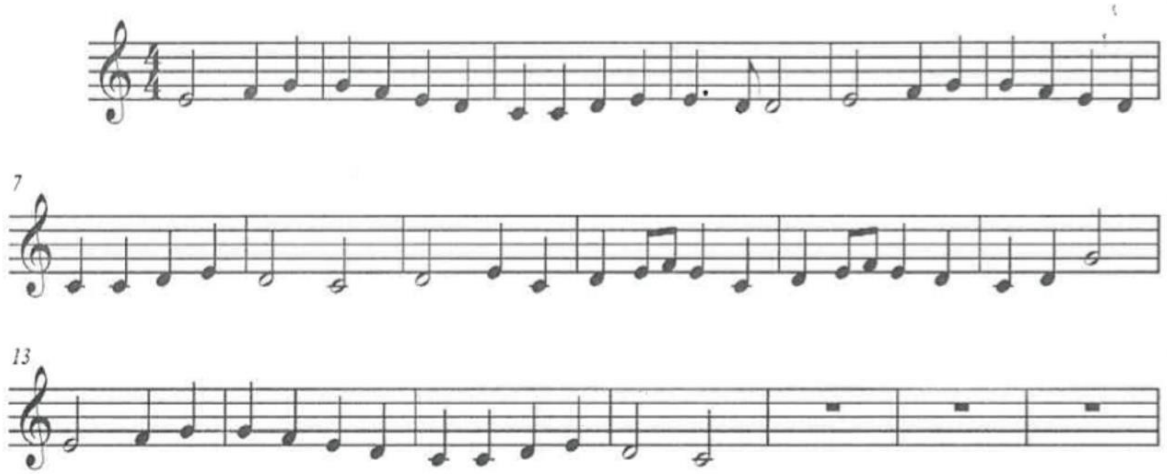
1st) Low and then high

2nd) Soft and then loud

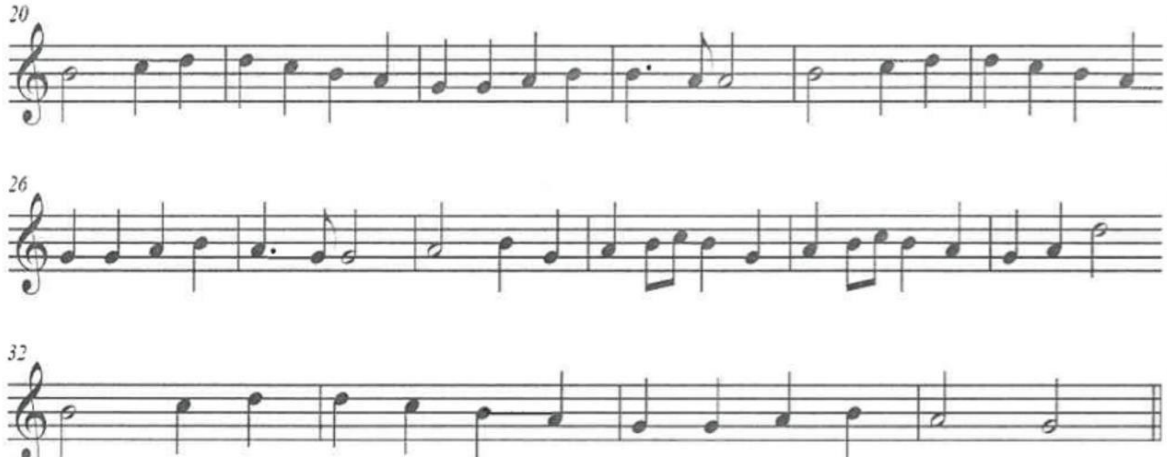
3rd) Long sounds and then short sounds

4th) Recorders and then xylophones

*Low melody:*




*High melody:*



- **Synthesis stage**, activities from page 15 and 16.

***Activity 36.- Look for the words that complete the statements in this word search puzzle:***

A) The sound is a _ _ _ _ _ _ _ _ _
B) The sound vibrations travel as a _ _ _ _
C) The sound wave travel through the air, solids and the _ _ _ _ _
D) We finally hear in the _ _ _ _ _
E) The sound can't exist in the _ _ _ _ _ _
F) We call a sound that disturb us a _ _ _ _ _
G) The four properties of the sound are:
_ _ _ _ _
_ _ _ _ _ _ _ _
_ _ _ _ _ _
_ _ _ _ _ _ _ _ _

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| V | A | C | U | U | M | Z | U | T | Y |
| D | I | R | S | O | H | C | T | I | P |
| U | T | B | I | L | E | H | J | M | O |
| R | A | C | R | M | W | D | C | B | N |
| A | D | W | O | A | A | L | V | R | I |
| T | F | X | V | C | T | N | K | E | A |
| I | G | E | S | M | E | I | F | J | R |
| O | H | Q | D | H | R | H | O | U | B |
| N | O | I | S | E | N | D | Y | N | I |
| K | M | U | Z | D | R | A | V | C | E |
| E | P | X | E | S | G | I | N | O | L |
| L | Y | T | I | S | N | E | T | N | I |

***Activity 37.- Fill in the gaps:***

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | **Duration** | | | | | |
| | | | | | **Soft** | | |

***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

- **Assessment stage**, activity from page 15.

***Activity 35.- Contest of versions.***

Work in pairs. After learning this rhythm, record in **Audacity** your own performance. We will listen to all your versions and we will vote for the one that we like best.

You can play...

- ✓ *Different pitches:*
  The high sounds are written on the line and the low ones under the line. Respecting that, you can choose the notes or sounds that you want.

- ✓ *Different durations:*
  The long sounds are crotchets and the short ones are quavers. Keeping that relationship you can play them as long or short as you want.

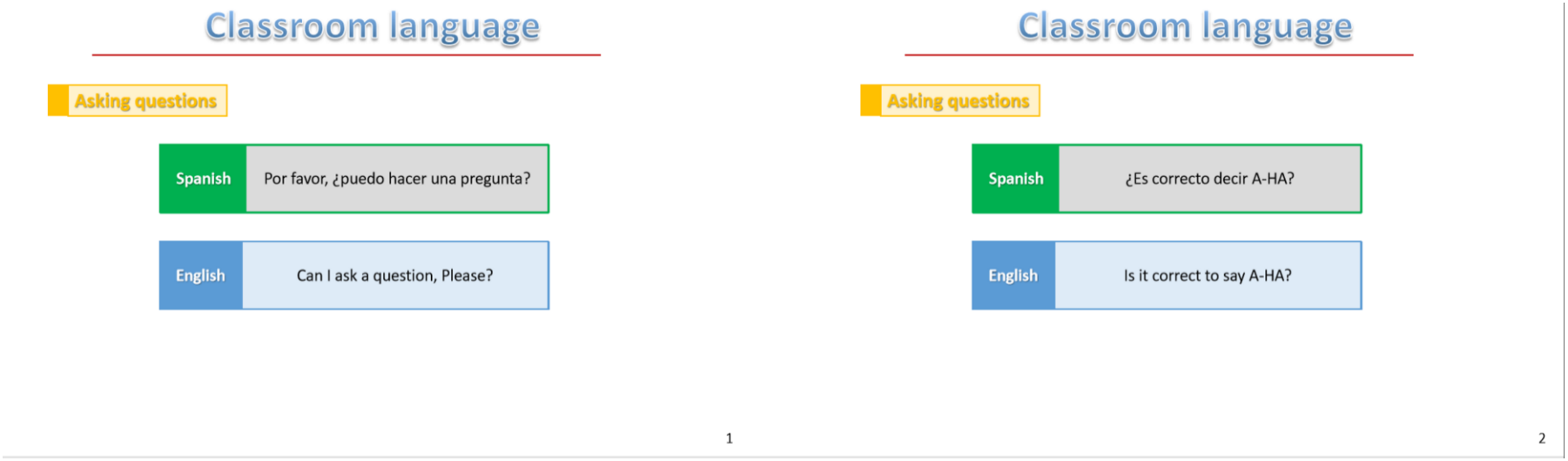
- ✓ *Different intensities or volumes:*
  You can play as softly or loudly as you prefer.

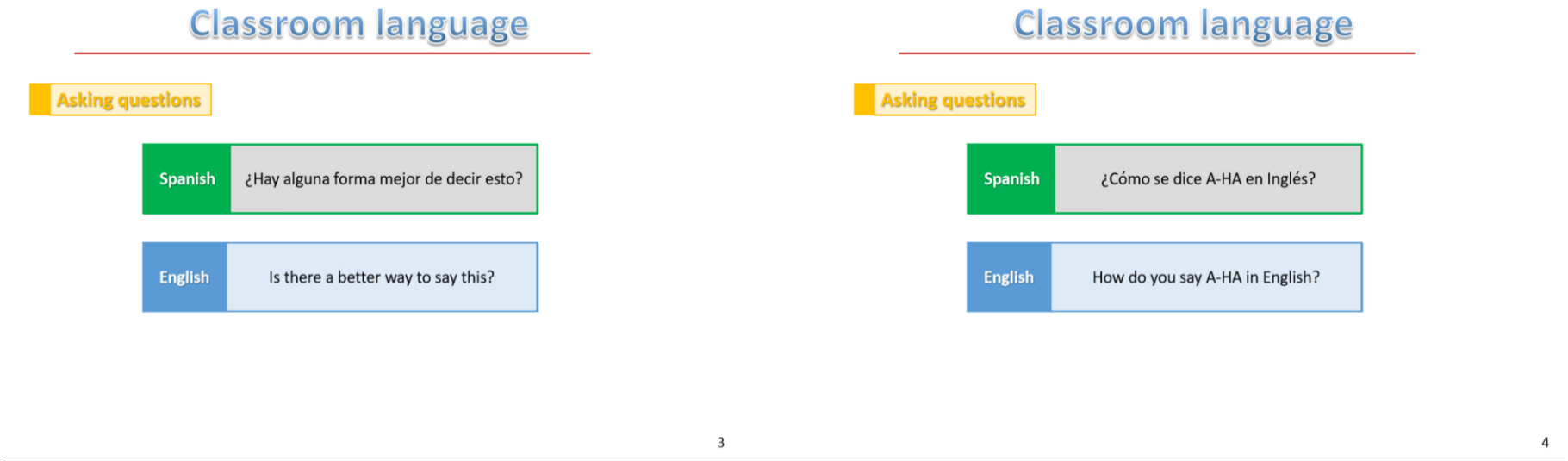
- ✓ *Different tone colours or timbres*
  You can play it with your body, objects, your voice, instruments...

# APPENDIX V

## Technology materials in order of appearance in the Moodle (Figure 1 in main body of the Dissertation)

Classroom language ppt



## Classroom language

**Asking questions**

| | |
|---|---|
| Spanish | ¿Cuál es la palabra en ingles para A-HA? |
| English | What is the word for A-HA in English? |

5

## Classroom language

**Asking questions**

| | |
|---|---|
| Spanish | ¿Qué significa A-HA? |
| English | What does A-HA mean? |

6

## Classroom language

**Asking questions**

| | |
|---|---|
| Spanish | ¿Cómo se escribe esta palabra? |
| English | How do you write this word? |

7

## Classroom language

**Asking questions**

| | |
|---|---|
| Spanish | ¿Cómo se deletrea esta palabra? |
| English | How do you spell this word? |

8

## Classroom language

**Asking questions**

| | |
|---|---|
| Spanish | ¿Cómo se pronuncia esta palabra? |
| English | How do you pronounce this word? |

9

## Classroom language

**Asking for repetition and further explanation**

| | |
|---|---|
| Spanish | Lo siento, no lo entiendo. Por favor ¿Puedes explicarlo otra vez? |
| English | I'm sorry, I don't understand. Can you explain it again, please? |

10

## Classroom language

**Asking for repetition and further explanation**

| | |
|---|---|
| Spanish | Lo siento, no me he enterado de lo que has dicho. ¿Quieres que nosotros A-HA? |
| English | I'm sorry, I missed what you said. Do you want us to A-HA? |

11

## Classroom language

**Asking for repetition and further explanation**

| | |
|---|---|
| Spanish | Me temo que no te sigo. ¿Quieres decir A-HA? |
| English | I'm afraid I don't follow you. Do you mean A-HA? |

12

## Classroom language

**Asking for repetition and further explanation**

| | |
|---|---|
| Spanish | Los siento, por favor ¿podrías decirlo otra vez? |
| English | I'm sorry, could you say that again, please? |

13

## Classroom language

**Asking for repetition and further explanation**

| | |
|---|---|
| Spanish | Lo siento, no entendí las instrucciones. Por favor ¿puedes repetirlas? |
| English | I'm sorry, I didn´t understand the instructions. Can you repeat them, please? |

14

## Classroom language

**Working in pairs and comparing answers**

| | |
|---|---|
| Spanish | ¿Cuál fue tu respuesta al número 6? |
| English | What was your answer for number 6? |

15

## Classroom language

**Working in pairs and comparing answers**

| | |
|---|---|
| Spanish | ¿Qué pusiste en la pregunta número 7? |
| English | What did you put for question number 7? |

16

## Classroom language

**Working in pairs and comparing answers**

| | |
|---|---|
| Spanish | ¿Qué obtuviste? Yo tengo un 6F |
| English | What did you get? I have got 6F |

17

## Classroom language

**Working in pairs and comparing answers**

| | |
|---|---|
| Spanish | ¿Qué respuesta elegiste? |
| English | What answer did you choose? |

18

## Classroom language

**Working in pairs and comparing answers**

| | |
|---|---|
| Spanish | ¿Tienes la misma respuesta que yo? |
| English | Do you have the same answer as me? |

19

## Classroom language

**Working in pairs and comparing answers**

| | |
|---|---|
| Spanish | ¿Cuál piensas que es la respuesta? |
| English | What do you think the answer is? |

20

Classroom objects ppt

## Classroom objects

## Classroom objects

**Naming classroom objects**

- If you turn the page over, you will see a list of objects you can usually find in your classroom.
- What do you call those objects? Work in pairs and with the clues given to you in this Power Point presentation and find every object's name.

## Classroom objects

**Naming classroom objects**

Match every object with his name:

- Pocket calculator
- Hole puncher
- Stapler

1. 

Hole puncher

2. 

Stapler staples

3. 

Pocket calculator

## Classroom objects

**Naming classroom objects**

Match every object with his name:

- Scissors
- Ruler
- Sellotape

4. 

Ruler

5. 

Scissors

6. 

Sellotape

## Classroom objects

**Naming classroom objects**

Match every object with his name:

- Notebook
- Pencil sharpener
- Paper clip

7. 

Paper clip

8. 

Notebook

9. 

Pencil sharpener

## Classroom objects

**Naming classroom objects**

Match every object with his name:

- Ring binder
- Paper file
- Plastic files

10. 

Ring binder

11. 

Plastic files

12. 

Paper file

# Classroom objects

**Naming classroom objects**

Match every object with his name:

✘ Pen ✘ Teacher's desk ✘ Data projector

13. 

Teacher's desk

14. 

Data projector

15. 

Pen

# Classroom objects

**Naming classroom objects**

Match every object with his name:

✘ Eraser ✘ Highlighter pen ✘ Correction fluid

16. 

Rubber (UK) Eraser (US)

17. 


Correction fluid

18. 


Highlighter pen

# Classroom objects

**Naming classroom objects**

Match every object with his name:

✘ Compass ✘ Pencil ✘ Agenda book

19. 

Pencil

20. 

Compass

21. 

Agenda book

# Classroom objects

**Naming classroom objects**

Match every object with his name:

✘ Board pen ✘ Chalk ✘ Blackboard eraser

22. 

Chalk

23. 

Blackboard eraser (US)

24. 

Board pen

# Classroom objects

**Naming classroom objects**

Match every object with his name:

✘ Scrap paper ✘ Glue stick ✘ Squared paper

25. 

Squared paper

26. 

Scrap paper

27. 

Glue stick

# Classroom objects

**Naming classroom objects**

Match every object with his name:

✘ Screen ✘ Classroom cupboard ✘ Pencil case

28. 

Pencil case

29. 

Classroom cupboard

30. 

Screen

# Classroom objects

**Describing How things work**

- Work in pairs.
- Point to one of the classroom objects and ask your partner what it is for.
- Then ask your partner how it works

**What's this for?**

It's for…+ -ing

It's used for … + -ing

It's a device/instrument for … + -ing

Oh, I see. **What do you call it?**

It's a …

**Classroom objects**

## Naming Classroom objects

If you turn the page over, you will see a list of objects you can usually find in your classroom.

What do you call those objects? Work in pairs and with the clues given to you in the Power Point presentation find every object's name.

## Describing how things work

Work in pairs. Point to one of the classroom objects and ask your partner what it is for. Then ask your partner how it works.

- **What's** this for?
  - It's for … + -ing
  - It's used for … + -ing
  - It's a device/instrument for …+ ing
- Oh, I see. **What do you call it?**
  It's a…

## Crossword: Classroom objects

**Instructions:**

You have half of a crossword. Taking turns with your partner you must find the missing words. You have to make questions similar to:

- "What's 1 down?"
- "What's 5 across?"

Your partner will explain the word. When you know the word, you must say:

- "Oh, I see!"

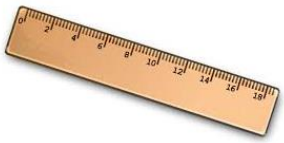
Do not say the word out loud. If you cannot understand what the word is, say to your partner:

- "How do you spell it?"

1.  _____ _____

2.  _____ _____

3.  _____ _____

4.  _____ _____

5.  _____ _____

6.  _____ _____

7.  _____ _____

8.  _____ _____

9.  _____ _____

10.  _____ _____

11.  _____ _____

12.  _____ _____

13.  _____ _____

14.  _____ _____

15.  _____ _____

16.  _____ _____

17.  _____ _____

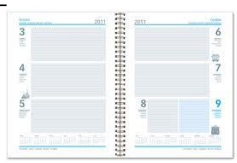
18. 

_____ _____

19.  _____ _____

20. 

_____ _____

21.  _____ _____

22.  _____ _____

23.  _____ _____

24.  _____ _____

25. _____

26. _____

27. _____

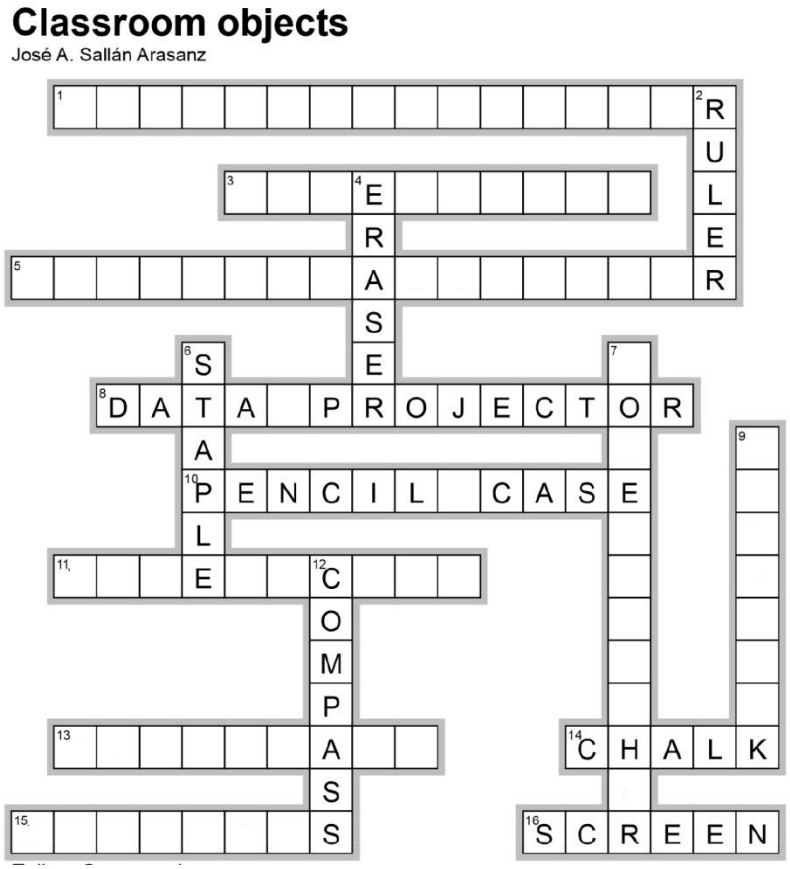

28. _____

29. _____

30. _____

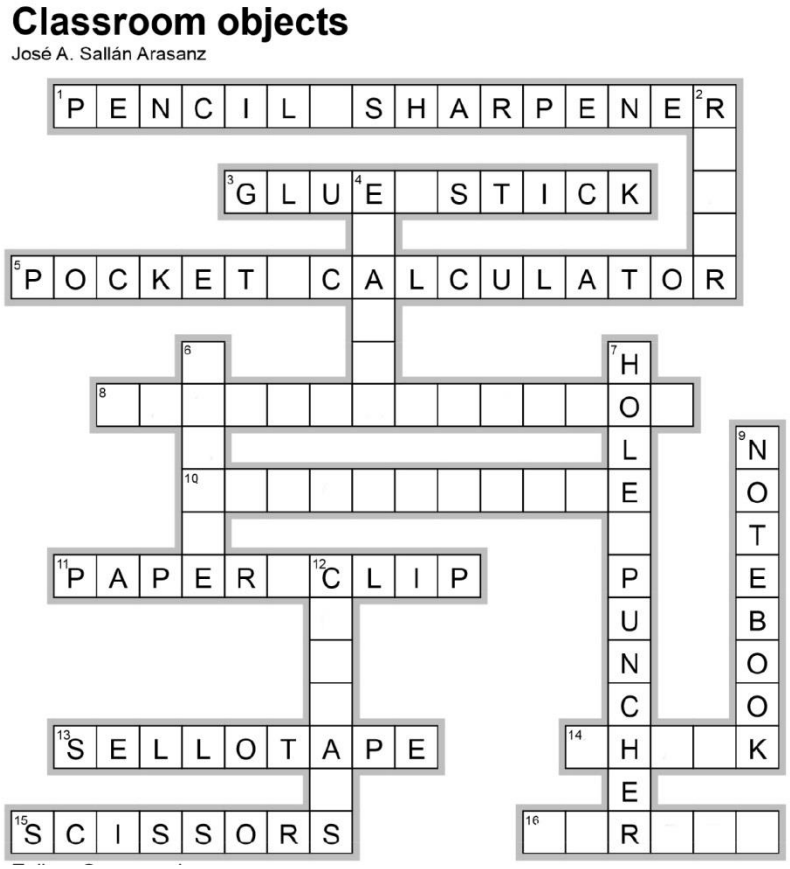
## COMUNICATIVE CROSSWORD: CLASSROOM OBJECTS

**Student A**



## COMUNICATIVE CORSSWORD: CLASSROOM OBJECTS

**Studendt B**



## CLASSROOM OBJECTS AND DEFINITIONS

### 1.-HOLE PUNCHER

It is used to make a hole in your paper.

It is an object for making a hole in a paper.

### 2.-STAPLER

The documents are held together by this object.

It is used to staple multiple sheets.

You can staple multiple sheets using this object.

### 3.-POCKET CALCULATOR

It is an instrument for do math.

It is a device to do math operations.

It is used for doing mathematical operations.

### 4.-RULER

It is an object for measuring small objects.

It is used for guiding your pen or pencil on your notebook.

### 5.- SCISSORS (pair of scissors)

It is an object used for cutting soft materials

You can use this device for cutting paper, canvas (or fabric) or another soft materials.

### 6.- SELLOTAPE

It is used to hold a paper with another one.

It is a tape coated with glue to stick a piece of paper to another piece of paper.

**7.-PAPER CLIP**

It is a small object to hold some papers together.

It is a small iron device to hold multiple sheets.

**8.-NOTEBOOK**

A notebook is used for writing in an orderly way.

It is for keeping some papers together.

**9.-SHARPENER**

It is an object  to sharpen a pencil.

It is for sharpening a pencil.

**10.-RING BINDER**

You can keep all your papers together in this object.

It is used for keeping your papers  together.

**11.-PLASTIC FILES**

It is a transparent case for keeping your papers in an orderly way.

It is used for keeping your papers( or a dossier)  in the same place.

**12.-PAPER FILE**

It is a carton case for keeping your papers together.

It is a cardboard folder for keeping your papers  together.

**13.- TEACHER´S DESK**

It is a table in the classroom for the teacher.

It is a table used for the teacher in the classroom.

**14.- DATA PROJECTOR.**

It is an expensive device for projecting films and slides on the screen.

It is an electronic device used for projecting films on the board.

**15.-PEN**

It is used for writing with ink on the paper.

It is a simple object for writing with ink on the paper.

**16.-ERASER**

It is an instrument for erasing what you have written with a pencil.

It is a small object used for erasing.

**17.- CORRECTION FLUID**

It is a white liquid used for covering a text or a drawing part if you made a mistake.

If you are writing with a pen and you make a mistake you can correct it using a correction fluid.

**18.-HIGHLIGHTER PEN**

It is a writing instrument used for highlighting a part of a phrase.

It is used for highlighting a part of a phrase.

**19.-PENCIL**

It is a writing instrument made of wood and graphite.

It is an object used for writing that you can erase easily.

**20.-COMPASS**

It is a writing instrument used for drawing circles.

It is for drawing circles easily.

**21.-AGENDA BOOK**

It is a notebook used for keeping a list of things to do, appointments, homework, etc.

It is for keeping your appointments in an orderly way.

**22.-CHALK**

**I**t is a traditional writing instrument used for drawing on the blackboard.

If you write on the blackboard with this object you can erase it using a blackboard eraser.

**23.-BLACKBOARD ERASER**

It is an object used for erasing easily on the blackboard.

**24.-BOARD PEN**

It is a object used for writing on the whiteboard.

**25.-SQUARED PAPER**

It is a kind of paper made with horizontal and vertical lines forming squares.

**26.-SCRAP PAPER**

Loose sheets of paper, often used for writing notes on.

**27.-GLUE STICK**

It is a tube filled with solid glue to be placed on the paper or to stick things together.

**28.-PENCIL CASE**

It is a small bag often used at school for holding pens, pencils,etc

**29.-CLASSROOM CUPBOARD**

It is used for storing  classroom objects

**30.- SCREEN**

It is used for projecting films or slides on it

VOCABULARY KEY WORDS LIST

**Vocabulary – Key Words**

| Word | Meaning |
|---|---|
| | |
| | |
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| | |

SONG ‘WORD DON’T COME EASY’ LYRICS ACTIVITY

Words
F. R. David

Words don't …… to me
How can …… a way to make you see ……. you
Words ……. come easy
Words don't come easy to me
This is ……. for me to say I ……. you
…… don't come easy

Well, I'm just a …….. man
…….are so far …… friend
But my words are ……. wrong
Girl, I …….my heart to you and
Hope that you ……it's true 'cause

Words don't come easy to me
How can I find a way …….. I love you
Words don't…… easy

This …… a simple song
That I've made for you ……
There's no ……. meaning you know when I
When I say I love you ……..
Please believe I really do 'cause

Words ……. come easy to me
How can I find a way …….. I love you
Words don't ……..easy
It isn't ……..words don't come easy

Words …….. come easy to me
How can I find a way ……. I love you
Words don't ……easy
……..come easy to me
This is the ……. for me to say I …… you
Words don't ……easy

Words …… easy
Autores de la canción: Tommy Boyce / Bobby Hart

TECHNIC REPORT

**DESCRIPTIÓN:**

**Theoretical document to guide the technical analysis of objects.**
**It is accompanied by the example document on the technical analysis of aclothes peg discussed in class.**

---

**DEVELOPMENT**

**Technical analyis is a procedure used in technology which you carry out to study an object in different aspects. Thus, we can divide a technological analysis in paragraphs that appear below**

1. **Anatomical analysis**
   a. Is it a simple or compound object? Do many pieces make up the object?
   b. Is it small or , on the contrary , is it large?
   c. Why does it have that shape and dimensions?
   d. Why does it have that color?

2. **Functional analysis**
   a. What is the main function of the object?
   b. What secondary applications does it offer?
   c. How do you handle the object?
   d. How is it controlled?
   e. What protections and security measures are incorporated?
   f. Within what limits can it work?
   g. What type of energy does it use?

3. **Tecnical analysis.**
   a. What materials is it made of? Are they the most appropriate? Why have these materials been used and not others?
   b. What parts make up the object? How are they placed relative to each other?
   c. What technologies are involved in its elaboration?
   d. Has it been built by hand or with machines? What techniques and tools have been used in its manufacture?
   e. Does it meet rules and market standards?

4. **Economic Analysis**
   a. What is the price of the object?
   b. Is this price appropriate when you compare it with other objects that perform the same function?
   c. Is it recyclable? What energy does it use? How are they eliminated?

5. **Sociological analysis**
   a. What problem does the object solve? Is it a necessary object?

b. Who uses it?
c. Did another object solve the same problem before?

**6. Esthetic analysis**

a. Is its size the right one?
b. What sensations does its appearance cause?
c. Where is it going to be placed?
d. Have the aesthetics been taken into account when designing it?

***STUDENT ACTIVITY:***.

**1.** Choose a daily object to do a complete technical analysis

**2.** You must carry out a report. This report mustn´t have more than four sheets.

**3.** Your report will include.

a. Personal identification.

b. One or two pictures of the object.

c. A sketch of the object with general measures.

d. A detailed technical analysis of the object following the detailed instruccions we saw before.

e. You can elaborate your report by hand and submit your report in PDF format throught the moodle digital platform.

**4.** A session will be devoted to show the works in public through projection in the classroom and defense of the student. The exercises will be graded and the most suitable ones will be selected and incorporated to the classroom consultation material.

**5.** You will dispose two classroom sesions for elaborating it and finally you will complet it at home if you need more time.

**Deadline: October 15, 2017.**