

## Sound design

**Level:** Upper intermediate +

**Time:** 90 minutes

**Summary:** This lesson is about noise in the workplace. In this lesson, students:

1. study an article about how clever sound design can reduce noise and help employees feel relaxed and comfortable at work;
2. look closely at different design elements and the impact they can have;
3. discuss which sound design elements would be appropriate in their own workplace;
4. compare how distracting they find various noises at work.

**Materials:** One copy of the worksheet per student

**Group size:** Any

**Note:** This lesson plan is for both pre-experience and in-work business students based on an original article first published in *Business Spotlight* issue 4/2019.

### Warmer

Tell students to close their eyes for 30 seconds and just listen. Tell them that you will time them and say when they can open their eyes again. While they have their eyes closed, they should focus on all the sounds that they hear.

Now, in part b, tell them to open their eyes and write down everything they heard while they had their eyes closed.

Finally, in part c, get them to compare their lists and to discuss any discrepancies with the rest of the class.

### Key words

Students match the key words with the definitions and then find the words in the article before reading through the article and noticing how they are used in context. The words in the task are in the order that they appear in the article.

#### Key:

- |                        |                             |
|------------------------|-----------------------------|
| 1. <i>soundscape</i>   | 8. <i>appropriating</i>     |
| 2. <i>implications</i> | 9. <i>mitigation</i>        |
| 3. <i>modify</i>       | 10. <i>pad</i>              |
| 4. <i>acoustic</i>     | 11. <i>upholstered</i>      |
| 5. <i>distractions</i> | 12. <i>levitate</i>         |
| 6. <i>sanctuaries</i>  | 13. <i>counterintuitive</i> |
| 7. <i>bonding</i>      | 14. <i>ambient</i>          |

### Understanding the article

- a. Students find each of the design elements listed in the article and explain how each of them can offer workplace sound solutions, for example by absorbing, blocking or covering sound. Students should look for additional information in the article to explain more about each one.
- b. Then they should discuss which of these ideas they would like to see implemented in their own workplaces and the advantages and disadvantages of each.

#### Key:

1. *covers unwanted sounds*
2. *hang over meeting tables to deflect sound back to the listeners to increase clarity of speech*
3. *carpets pad the floor and absorb sound*
4. *tall, upholstered furniture is grouped to provide private cosy areas*
5. *(with water gently rippling down the sides) block and cover sounds*
6. *offer a quiet sanctuary where a person can work undisturbed*
7. *a wall of plants can soak up sound and improve the air quality*
8. *can function as art as well as helping absorb sound*

### Expressions

Students find three-word expressions in the article. Then, after they have checked their answers, they use some of them in sentences of their own either about the article or about their own work situation.

#### Key:

1. *find your flow*
2. *the lion's share*
3. *the bottom line*
4. *strike a balance*
5. *fit for purpose*

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### Extra reading

In part a, students read through tips one to four. Each tip is missing a final sentence, and in part b, they match each tip with its correct final sentence.

**Key:**

1. tip 2
2. tip 4
3. tip 1
4. tip 3

Finally, in part c, students read through the completed tips and then, using the questions as starting points, talk about the usefulness and practical aspects of implementing each tip into their own work situation.

### Discussion

Students read the sound descriptions and write the appropriate letters next to each, depending on how the sounds make them feel when they are trying to work. Then they compare how they feel about the sounds in small groups. How similar or different are their perceptions of these sounds and noises?

Ask them to talk about other sounds that they consider to be either annoying or soothing in their workplace and then share this information with the rest of the class.

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### 1 Warmer

- Close your eyes for 30 seconds, and just listen.
- Write down everything you heard while you had your eyes closed.
- Compare your lists.

### 2 Key words

Match the key words to the definitions below. Find and underline them in the article, and then read the article and note how they are used in context.

acoustic	ambient	appropriating	bonding	counterintuitive
	distractions	implications	levitate	mitigation
modify	pad	sanctuaries	soundscape	upholstered

- the noises that are heard in a particular place, taken in as a whole (intro)
- possible effects or results (para 4)
- change something slightly, especially in order to improve it (para 6)
- relating to sound and the way people hear things (para 6)
- things that get your attention and prevent you from concentrating on something else (para 7)
- places where you can be safe or comfortable (para 7)
- the development of a special close relationship between people (para 8)
- taking or using something for a special purpose (para 9)
- a reduction in the harmful effects of something (para 12)
- cover something with a soft substance to make it more comfortable and quieter (para 13)
- furniture covered with cloth or leather to make it attractive and comfortable (para 13)
- to rise and float in the air, as if by magic (para 13)
- opposite to what seems obvious or natural (para 14)
- existing or present around you (para 15)

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### Sound design

by Tenley van den Berg



**Instead of separate spaces, more and more companies are moving towards open-plan offices. This presents architects and interior designers with new acoustic challenges. TENLEY VAN DEN BERG explains how a well-designed soundscape can aid concentration and creativity, despite the noises around you.**

As a result, business owners are working with architects and designers to optimize the workplace soundscape. As private offices are increasingly replaced with open-plan offices, those architects and designers are faced with major acoustical challenges.

#### Acoustic zoning

One way that designers deal with such challenges is to modify the open-plan model. They designate different zones with varying levels of acoustic privacy, depending on how the space will be used. Designers need to strike a balance between the need for privacy and quiet areas and the desire for openness and communication with others.

Some zones should provide “spaces of tranquillity where the mind can relax without external distractions and interruptions,” reports the Leesman Index, a global working-environment survey based in the UK. For example, a sign above a row of desks in LinkedIn’s Munich office reads “focus zone”. Deeper into the workspace, free-standing glass pods offer quiet sanctuaries.

Not all zones need to be quiet, however. “A good buzz may be associated with a strong culture – people chatting, interacting and even bonding. It might give the sense of ‘one team’ all pulling in the same direction,” the Leesman Index report found. Dedicated spaces around the office should encourage interaction and discussion, for example in break-out areas, meeting rooms and lounges. In the London office of Splunk, a US-based data-analysis company, designers installed an antique Pullman railway carriage, which contributes to the office’s “cool factor” while providing a space for teamwork and collaboration.

The most important thing is that the workspace is flexible: individuals and teams should be able to move around freely, acoustically appropriating spaces depending on their work demands.

Effective acoustic design within these zones is not easy, though. Office designers have three main tasks: to keep background noise at a level that is not distracting; to protect speech privacy so that only the intended audience hears what is being said; and to improve speech intelligibility – making sure speech is clearly understood when it’s supposed to be, for example in conference rooms or collaborative zones.

*Continued on next page*

- 1 The next time you’re at work, close your eyes for 30 seconds and just listen. Everything you hear, from the murmur of your colleagues to the coffee grinder shrieking nearby, makes up the soundscape of your workplace.
- 2 Whether you are aware of it or not, this sound environment plays an influential role in your well-being and how you feel about the company you work for. In the past, little thought was given to how office design affected sound; however, new insights into how sound affects well-being and productivity are driving a trend in soundscape design in the workplace.
- 3 Sound affects our bodies and minds, ultimately influencing our productivity. Twittering birds, rippling water and other soothing sounds relieve stress and help us find our flow, whereas unwanted sounds, such as a loud coffee grinder, cause us to release stress hormones, which raises our heart rate and blood pressure.
- 4 Research suggests that unwanted speech noise is the most distracting sound in an office. When you can hear a colleague taking a phone call, for instance, the content of the call grabs the attention of your brain. Your productivity drops, and it may take up to 20 minutes to fully regain your concentration. The cumulative effect of this loss of concentration has important implications: in an extensive study carried out by Steelcase, a US office furniture manufacturer, workers reported losing up to 86 minutes a day in productivity due to noise distractions. Since employee earnings make up the lion’s share of business operating costs, even a one per cent improvement in productivity can have a significant impact on the bottom line of a business.

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- 11** To understand the obstacles that office designers face when shaping the sound environment within the acoustic zones, it's useful to understand the basics of how sound behaves. Travelling away from a source, sound behaves rather like a table-tennis ball moving through the air. If the ball is thrown directly at a hard surface, it will bounce back with nearly the same amount of energy as it hit the surface. Like a table-tennis ball, sound will bounce off hard surfaces many times before its energy fades away. Imagine trying to concentrate in a room in which everyone is throwing table-tennis balls. That is how working in an office without acoustic treatment can feel.
- 12** Offices have many hard surfaces for sound to bounce off, such as walls, ceilings, floors, tables and desks. Using the so-called ABCs of sound mitigation – absorbing, blocking and covering – designers can treat sound at three different points: its source, its path and its recipient. When implementing the ABCs, office designers have the chance to combine acoustic treatment with creative brand expression.
- 13** Absorbent materials allow some of the sound to be captured by the material, reducing the total level of sound in a space. Carpets can pad the floor. Acoustic panels on the wall can create colourful patterns that also function as art installations. Green walls of plants can soak up sound while introducing fresh air. Islands of high-backed, upholstered furniture can create cosy areas for private conversations. Cloudlike baffles can seemingly levitate over meeting-room tables, improving speech clarity by directing the sound back to the listeners.
- 14** Blocking prevents all or some of the sound reaching the recipient by blocking its path. Plantronics, an audio-technology company in California, has introduced Habitat Soundscaping, which features large glass dividers with

water gently rippling down the sides, simultaneously blocking and covering sound. Covering, or masking, is the most counterintuitive of the treatment methods. At the right frequency and volume, additional sound can make a space seem quieter: the pleasant introduced sound, such as flowing water, cancels out unwanted sounds.

Here is how it works: if you were reading a book at the beach and two people started speaking a couple of metres away, you could probably continue reading because the sound of the surf in the background would cancel out some of the speech sounds. However, if you were reading in a silent library and two people sat down next to you and started to whisper, your concentration would immediately move to their conversation. In the same way, increasing the ambient noise level of a workspace can be effective in helping people to concentrate.

Forward-looking businesses are increasingly willing to invest in this “invisible architecture”. Julian Treasure is founder of UK-based The Sound Agency, which composes soundscapes of music and other sounds to represent companies’ brand identities. “It’s about designing, not appearance, but experience, so that we have spaces that sound as good as they look, that are fit for purpose and that improve our quality of life, our health and well-being, our social behaviour and our productivity,” Treasure said in a TED talk.

If you don’t expect a designer to set foot in your office any time soon, you can take the improvement of your soundscape into your own hands. This may help you get your work done; however, it may never feel quite like working next to the ocean.

TENLEY VAN DEN BERG is an English teacher, translator and writer based in Munich.

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### 3 Understanding the article

a. Explain how each of the following design elements can offer workplace sound solutions. Provide additional information from the article to elaborate on each one.

1. additional sound \_\_\_\_\_  
\_\_\_\_\_
2. baffles \_\_\_\_\_  
\_\_\_\_\_
3. flooring \_\_\_\_\_  
\_\_\_\_\_
4. furniture \_\_\_\_\_  
\_\_\_\_\_
5. glass dividers \_\_\_\_\_  
\_\_\_\_\_
6. glass pods \_\_\_\_\_  
\_\_\_\_\_
7. plants \_\_\_\_\_  
\_\_\_\_\_
8. wall panels \_\_\_\_\_  
\_\_\_\_\_

b. Which of these ideas would you like to see implemented in your workplace? Which wouldn't be practical? Which would be too costly? Which might be soothing for you but annoying for other people?

### 4 Expressions

a. Find the following three-word expressions in the article.

1. get yourself into a state of creativity and happiness (para 3) \_\_\_\_\_
2. the largest part of something (para 4) \_\_\_\_\_
3. the amount of money that a business makes or loses (para 4) \_\_\_\_\_
4. accept neither of two extreme positions or things but find a solution that is reasonable and fair (para 6)  
\_\_\_\_\_
5. good enough to do the job it was designed to do (para 16) \_\_\_\_\_

b. Use the expressions in sentences of your own.



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### 5 Extra reading

#### a. Read the tips.

#### Noise reduction: controlling your sound environment

Rebecca Knight, writing for the *Harvard Business Review*, has produced a few “survival strategies” for those who work in an acoustically uncomfortable environment. She was assisted by Karen Dillon, author of the *HBR Guide to Office Politics*, and David Burkus, an associate professor at Oral Roberts University.

#### 1. See the positive side

Dillon recommends trying to “embrace the open-office concept by focusing on the positives, ‘the bonding’ and downplaying the negatives.” \_\_\_\_\_

#### 2. Speak up

“Have a conversation with your team about how you can all work optimally in an open office,” Burkus suggests. However, he recommends first speaking to your manager so that the discussion comes from leadership. \_\_\_\_\_

#### 3. Invest in headphones

Dillon recommends buying a set of noise-cancelling headphones for those times when you are working on something that requires deep concentration. \_\_\_\_\_

#### 4. Move around or leave the office

“You should take full advantage of empty conference rooms, semi-private cubicles and quiet alcoves,” suggests Burkus. Ask your manager if you can work somewhere else for a while, such as the café across the street. \_\_\_\_\_

#### b. Match the final sentences below with the tips they belong to.

1. These also “serve as a visual cue to your colleagues that you are not to be disturbed unless it’s absolutely necessary”.
2. She adds that you don’t want to be labelled “difficult”.
3. Burkus says this is an easier request than asking to work from home, making it more difficult to refuse.
4. As a team, your goal is to come up with norms that you can all agree on and stick to.

#### c. Read the four complete tips, and then discuss the three questions below.

- Which tips would be practical in your work situation?
- Which you would be able to implement immediately?
- Which are you most likely to try?


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### 6 Discussion

a. Look at the list of sounds that are common in the workplace. Think about how these different sounds affect you at work. Do you consider these sounds to be:

- soothing and pleasant (SP);
- annoying and unwanted (AU);
- neutral (N), meaning they don't bother you and you hardly even notice them?

Write SP, AU or N next to each sound.

the coffee machine or kettle boiling _____	
colleagues laughing loudly _____	
a radio playing _____	
birds singing _____	
traffic on a busy road outside _____	
children playing nearby _____	
wind rattling the shutters _____	
colleagues talking on the phone _____	
a ringing phone going unanswered _____	
message alerts on your colleague's phone _____	
trains constantly going past _____	
roadworks or building work outside your window _____	
water dripping somewhere nearby _____	
a dog barking in the next building _____	
a colleague repeatedly tapping their pen _____	
_____	
_____	
_____	

b. Discuss your answers and add a few more examples of what you consider to be soothing or annoying noises at work on the lines provided.