Lesson plan

Level: Secondary

Topic: How we hear

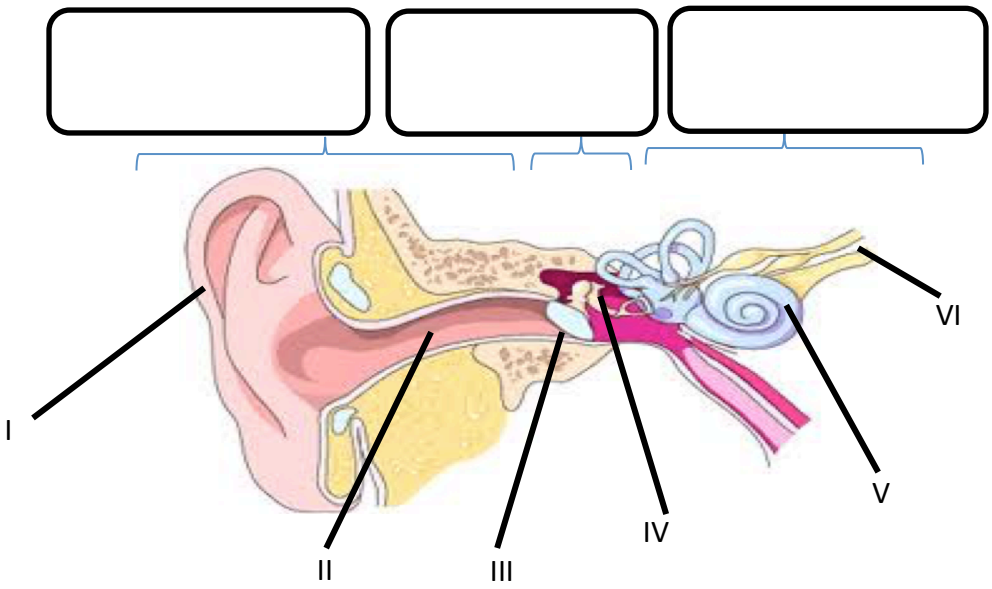
Objective: By the end of the lesson, students should be able to understand and explain the process of how our ears detect sounds.

A. Setting the context Presenting what is to be learned and the aims: to understand and explain the process of how our ears detect sounds.		
Step		**Mode of interaction**
1	Discuss current knowledge by showing the human ear model, separating the different parts of the model and asking students the names of them.	Teacher ←→ Student
B. Independent construction		
Step		**Mode of interaction**
2.	**Task 1** - Students try out with a short writing task: how is sound transmitted through the outer, middle and inner ear?	Students←→Students Students in groups
C. Modeling and Deconstruction		
Step		**Mode of interaction**
3	Using the processing of seeing as the modelled example, students are then asked to write the processing of hearing.	T ← → S
D. Guided Construction		
Step		**Mode of interaction**
4	*Why does my voice sound different when I hear from a recorder?* Students hear an audio record of classmates and are given hints about media (gas, liquid and solid) of transmission of sounds so they can connect this with their understanding of the particle theory.	T ← → S
5	In groups, students discuss the phenomenon of sound transmission through different media: gas vs solid.	Ss←→Ss Students in groups
6	Students report to the class their explanations for the phenomenon.	Ss → T and Ss
7	**Task 2** - Students are given a flow chart to complete the process of sound transmitting through skull bones to their ear as well as from air to their ear.	Ss←→Ss Students in groups
8	Students discuss with the class their flow charts.	Ss → T and Ss
Independent Construction		
9.	As homework, students are required to explain the phenomenon in writing.	

Preparatory Task

Fill in the blanks with the words given.

inner ear	outer ear	middle ear



Match each part of the ear with its function.

Part	Name	Function
I	a. earbones	1. vibrates as the sound reaches it.
II	b. eardrum	2. sends messages to the brain
III	c. ear canal	3. magnify the vibrations and transmit them to the inner ear.
IV	d. pinna	4. collects sound and direct to the ear canal
V	e. auditory nerve	5. The vibrations stimulate the receptors in this part and send out message.
VI	f. cochlea	6. allows sounds to passes through to the middle ear.

I	d	4
II		
III		
IV		
V		
VI		

SOLUTION

I	d	4
II	c	6
III	b	1
IV	a	3
V	f	5
VI	e	2

Assignment 1

Write down the process of sound waves transmitting through the outer, middle and inner ear.

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Assignment 2

When you hear your voice from a recorder, it sounds different from when you hear your own. Explain why this is so with process you learnt during lesson.

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This lesson plan was prepared by Lui Yun Choy at Memorial College in Hong Kong, under the supervision of John Polias, Director of Lexis Education.